

# SIXTY-SECOND ANNUAL REPORT

OF THE

# Department of Health

OF THE

# STATE OF NEW JERSEY

1939



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Department of Health of the State of New Jersey

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J. LYNN MAHAFFEY, M.D., *Director and Secretary*

EDMUND R. OUTCALT, *Deputy Secretary*

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

STATE OF NEW JERSEY,

DEPARTMENT OF HEALTH,

TRENTON, N. J., August 16, 1939.

*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, 1939.

IRVIN E. DEIBERT, M.D.,  
*President,*  
*State Department of Health.*

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STATE OF NEW JERSEY,

DEPARTMENT OF HEALTH,

TRENTON, N. J., August 16, 1939.

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

GENTLEMEN—I have the honor to submit herewith the annual report of the Department for the year ending June 30, 1939. The reports of the Bureau Chiefs will give comprehensive accounts of the activities of the eight Bureaus of the Department during the year.

Respectfully submitted,

J. LYNN MAHAFFEY, M.D.,  
*Director of Health.*

## Report of the Director of Health

J. LYNN MAHAFFEY, M.D.

Outstanding in the events of the past year is the series of studies made by the New Jersey Health and Welfare Conference appointed by Governor A. Harry Moore and organized under the chairmanship of Dr. Robert C. Clothier, president of Rutgers University. The report of this committee will outline the public health needs and problems of New Jersey and their relation to the national health needs as set forth in the report of the Interdepartmental Committee to Co-ordinate Health and Welfare Activities, created by the president.

All groups dealing with health and welfare problems in New Jersey were represented in these studies so that an intimate knowledge of the situation as well as mature group judgment were brought to bear in discussions and subsequent reports of subcommittees.

The Department contributed by preparing a large amount of data and by supplying the services of numerous technically trained and experienced persons as committee members, as well as clerical assistance.

The current expansion of essential health services which began in 1936, when funds were first made available under the Federal Social Security Act, continued during the past fiscal year, although to a lesser extent than in the previous years. The Department has steadily increased its services to a point where the public is beginning to receive basic health services commensurate with the needs of a metropolitan state. The per capita expenditure is still low. The nature and extent of these services are set forth in the reports of the eight Bureaus of the Department, but a number having particular significance are mentioned here.

### PNEUMONIA DEATHS PREVENTED

Anti-pneumococcic sera for use in the treatment of patients financially unable to pay for the material was first made available for distribution by the Department shortly before the beginning of the fiscal year and had been furnished for the treatment of 782 patients by June 30, 1939. Case histories of 777 of these serum treated cases showed a mortality of 15

percent, which, on the basis of an expected mortality of 25 to 42 percent without serum therapy, warrants the conclusion that at least 132 lives were saved by this free serum. The death rate from pneumonia of 54.25 per 100,000 in 1938 was the lowest ever recorded in this State.

Types 1 and 2 horse sera and Type 1 rabbit serum were distributed from 34 stations. In addition, 17 of the distributing stations were supplied with Types 5, 7, 8 horse sera and Type 3 rabbit serum. The Department approved 115 laboratories for the typing of pneumococci and made a special study with the U. S. Public Health Service to determine the relative proportion of different types of pneumococci causing pneumonia in the State.

#### NEW SERVICES FOR MOTHERS AND CHILDREN

A maternal mortality rate of 3.3 was recorded in 1937 and in 1938, the lowest rate in the history of the State and about half the rate of the years previous to 1932. Obstetrical consultative services were provided in 108 instances to physicians attending women of the low-wage group at home and a delivery nurse service was provided in 1,340 home deliveries of women of this low income group. The proportion of maternal deaths during the first six months of pregnancy decreased eight percent from 1937 and 11 percent from 1936.

In 1938 as in 1937, the infant mortality rate was 39 per 1000 live births. This was the lowest state rate in the United States for 1937.

The preventive mental hygiene program instituted three years ago has been developed under the direction of an advisor in mental hygiene and parent-child relationships. Instruction and training of staff nurses has enabled them to teach the mother of infants and children whom they visit the basic facts of child nature and development so that parents may be prepared to anticipate and avoid the development of improper parent-child relationships in the important formative years of childhood.

#### SYPHILIS CAMPAIGN EXPANDS

The Department's activities in the control of the venereal diseases were continued on the basic plans of previous years and were marked by the extension of diagnostic and treatment facilities for indigent and low-wage patients and by the inauguration of pre-marital and pre-natal blood testing required by Chapters 126 and 41, P. L. of 1938.

Nine new regional clinics for the treatment of indigent and low-wage venereal disease patients were established with the co-operation of local boards of health, bringing the total number of this type of clinic to 20. In addition, financial assistance was extended to five clinics operated independently by local health departments. It has been found necessary to increase clinic hours in seven of the regional clinics since January 1, 1939. At the same time, the demand for free anti-syphilitic drugs and their adjuncts by the physicians of New Jersey to be used for low-fee patients has increased steadily. The month of June, 1939, showed an increase of 80 percent in requests for free drugs over June, 1938.

Operation of the pre-marital examination law brought to light 760 cases of syphilis. Of 47,921 persons tested, 0.6 percent of the white applicants and 11 percent of the negro applicants gave positive laboratory tests. These are the best available data on the relative proportion of syphilis among whites and negroes in the State. There was a decided reduction in the number of marriages performed in New Jersey during the first months of operation of the pre-marital examination law, but the number of marriages was returning to normal at the end of the fiscal year.

A complete report of the operation of the pre-natal examination law will not be available until next year.

#### CLEANER RIVERS PROVIDED FOR

The activities of the Interstate Commission on the Delaware River Basin (Incodel) described in the annual report for 1938 resulted in the enactment by the 1939 Legislature of "An act to promote interstate cooperation for the conservation and protection of water resources in the Delaware river basin" which was approved by Governor Moore on July 1, 1939. This act, based on a reciprocal agreement with the other three signatory states of Delaware, New York and Pennsylvania, should serve as an effective instrument in improving the quality of the waters of the Delaware and in preserving these waters for future potable, industrial, recreational, and other uses.

The act divides the Interstate Delaware River into four zones based on the existing and potential quality and uses of the waters within each zone and establishes minimum requirements for sewage and waste treatment and for the quality of the river water for each zone.

To aid in the correction and control of the pollution of the waters of the Raritan River and its tributaries, the Department adopted two resolutions under authority granted to it by statute. The resolutions establish minimum requirements for method of treatment and quality of effluent of sewage and other polluting material discharged into these waters, the source of which was created subsequent to the respective effective dates of the resolutions.

As a result of the Department's efforts and the active co-operation of the interested industries and municipalities, the improvement of the waters of the Raritan River and its tributaries has continued during the past year. Abatement of discharges of harmful polluting matter into these waters has proceeded to such a point that plans are under consideration for the use of the improved waters as a source of public potable water supply; a large water front parkway and recreation center is under construction and the construction of others is contemplated. Large catches of fish, absent in recent years, are being reported up to Crab Island, about five miles below the city of New Brunswick.

Extensive studies of sewage treatment problems were carried on in addition to the heavy schedule of routine supervision to assure safe water supplies and adequate sewage disposal throughout the State.

#### COMMUNICABLE DISEASES STILL A PROBLEM

Diphtheria, a disease for which an effective prophylactic measure is available to all persons in New Jersey, showed a slight increase in 1938 over the two previous years with 574 cases and 33 deaths. Fifty-one percent of the fatal cases were children less than five years old. However, only eight percent of 46,741 persons receiving diphtheria toxoid distributed by the Department were under one year of age and only 42 percent were under five years. This record again emphasizes the need for increased efforts to secure immunization of children with diphtheria toxoid during the first year of life.

For the seventh consecutive year no case of smallpox was known to occur in the State, but it must be pointed out that this record can be continued only by maintaining a large proportion of vaccinated persons in the population. Rocky Mountain spotted fever showed a slight increase with 16 reported cases and eight deaths.

There was a marked increase in the number of examinations of specimens for evidence of communicable diseases during the year. The greater proportion of this increase was in the number of serodiagnostic tests for evidence of syphilis resulting from the operation of the pre-marital and pre-natal examination laws and the extension of the syphilis control program in the State.

#### RABIES REACHES PEAK

The unusually high incidence of rabies in animals which began in the early months of 1938 apparently reached its peak in January, 1939 but was still high at the close of the fiscal year.

To cope with this rapid increase the Department invoked for the first time the authority granted to it by statute to order local boards of health in affected areas to have all dogs confined except when on leash. At the close of the fiscal year the order had been applied to the boards of health in the counties of Bergen, Passaic, Essex, Union and Somerset and to eight boards of health in the northern section of Middlesex County and to several boards of health in Morris County.

An amendment to the rabies law making it possible for local boards of health to serve the necessary notice on dog owners by newspaper notification rather than by personal service, and changing the procedure of collection of penalties in case of violation, was submitted to the Legislature and became a law soon after the close of the fiscal year.

The special joint committee on rabies referred to in the annual report for the year 1937 continued its study of the rabies problem and of rabies legislation throughout the year. The committee found this problem to be complicated and far reaching and was not prepared to submit its final recommendation this year.

#### NEW FOOD AND DRUG LAWS ADOPTED

Since the new Federal Food, Drug and Cosmetic Act applies only to those foods, drugs, cosmetics and certain therapeutic devices which are shipped in interstate commerce, a bill was introduced in the 1939 Legislature to make the requirements of New Jersey uniform with those of the Federal Act. Such a law was needed to make the same standards apply to food, drugs, cosmetics and devices prepared and distributed solely

within the State as apply to these shipped in interstate commerce. This bill was approved August 8, 1939.

Double indexing of birth records prior to 1901 was begun in October 1935 as a WPA project. This work has been completed for the 42 years prior to June, 1890 and records for the following 10 years are now being indexed. If personnel is available, the 1878-1900 marriage records will be indexed by both husbands' and wives' names. These records are in extensive use for old age pension purposes and in 1938, 22,046 searches of records were made.

#### PUBLIC HEALTH EDUCATION IN DEMAND

Information and advice intended to promote better individual and community health habits has been made available to the public. The Department has endeavored to keep the citizens of the State informed as to the public health program and its relation to them through the means of talks, use of visual aids, newspaper releases and regular issues of the official bulletin, Public Health News.

Courses for training of personnel for health departments were conducted in co-operation with Rutgers University as in recent years. Thirty students were enrolled in the summer courses and 111 students completed one or more of 12 winter courses offered. Professional education of staff members of the Department was continued through use of funds made available by the Federal Social Security Act. Nurses, sanitarians and medical staff members were enabled to refresh and increase their technical training through public health courses offered in several universities.

#### DEPARTMENT EXPENDITURES

The total sum expended through the Department during the fiscal year was \$916,610.75, of which \$47,036.47 was allocated to certain local health departments and expended by them. The per capita expenditure for the program of the Department was 19.6 cents. Expenditures from State funds totalled \$544,270.12 and from Federal funds supplied under the Social Security Act, \$372,340.63. Revenue from licenses, fees, etc., amounted to \$46,081.37, which was transmitted to the State Treasurer.

#### COMBINED LOCAL HEALTH UNITS INCREASE

Local health administration in some communities of the State, both rural and suburban, is seriously inadequate and in others is almost totally lacking. Many of these local communities do not contain a population great enough to support an adequate local health service. The establishment of regional health commissions by groups of local boards of health pooling their resources to support a joint public health program has been demonstrated to be a practical and efficient method of providing adequate local health services. Unfortunately the establishment of such regional health units has been limited, but it is hoped that the next few years will see a more widespread development of this type of local health administration. At the close of the year there were 20 regional health commissions maintaining clinics for the treatment of indigent and low-wage venereal disease patients from the participating municipalities, but providing no other services. There were also four local health units, two in Monmouth County and two in Union County, organized to provide an extensive program of local public health services for the participating municipalities. The success of these units has demonstrated the feasibility of this type of local health administration in New Jersey.

## Report of Bureau of Administration

For the Year Ending June 30, 1939

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EDMUND R. OUTCALT, *Chief*

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At the meeting of the State Department of Health held on July 12, 1938, Irvin E. Deibert, M.D., was re-elected President, and Dr. E. W. Smillie, Vice-President, for the fiscal year ending June 30, 1939.

The following committees were appointed by the President to serve during the year:

- (1) *Administrative Improvement Committee*: Dr. Deibert, Dr. Mahaffey, Mr. MacDonald, Dr. Coffey and Mr. Outcalt.
- (2) *Advisory Committee*: to advise with Director on matters of controversy between meetings: Dr. Deibert, Dr. Smillie, Dr. Guthrie and Dr. Russell.
- (3) *Budget Committee*: Dr. Russell, Dr. Guthrie, Mr. Fowler and Dr. Nichols.
- (4) *Dental Committee*: Dr. Guthrie, Mr. Potts and Dr. Baker.
- (5) *Kennels Committee*: to study proposed regulations with respect to kennels and small animal hospitals: Dr. Smillie, Dr. Guthrie and Mr. Bishop.
- (6) *Legislative Committee*: Mrs. Rockafellar, Mr. Bishop, Mr. Potts and Dr. Guthrie.
- (7) *Maternal and Child Health Committee*: Miss MacNaughton, Dr. Nichols and Dr. Baker.
- (8) *Milk Committee*: Dr. Smillie, Dr. Russell and Mr. Bishop.
- (9) *Nursing Committee*: Advisory Generalized Public Health: Miss MacNaughton, Mrs. Rockafellar, Dr. Nichols, Dr. Guthrie and Mr. Fowler.



- (10) *Public Health Committee*: Dr. Nichols, Dr. Smillie and Dr. Baker.
- (11) *Rabies Committee*: for the study and control of rabies in New Jersey: Dr. Smillie and Dr. Russell.
- (12) *Shellfish Committee*: Mr. Fowler, Dr. Smillie and Mr. Potts.
- (13) *Social Security Committee*: Miss MacNaughton, Dr. Nichols, Dr. Smillie and Dr. Guthrie.
- (14) *Veneral Disease Committee*: Dr. Smillie, Dr. Nichols, Mr. Fowler and Dr. Guthrie.

## APPROPRIATIONS

During the fiscal year ending June 30, 1939, there was appropriated through State and Federal sources to the New Jersey State Health Department the sum of \$963,495.57.

The State Legislature appropriated \$552,811.23 and the following sums were received from the Federal Government under the Social Security and Veneral Disease Control Acts:

Social Security Act, Title V (U. S. Children's Bureau) Allotment .....	\$75,473.70	
Balance from 1938 .....	6,036.52	
Total .....		\$81,510.22
Social Security Act, Title VI (U. S. P. H. S.) Allotment....	\$199,531.00	
Balance from 1938 .....	58,316.12	
Total .....		257,847.12
Veneral Disease Control Act (U. S. P. H. S.) Allotment .....	71,327.00	
Total Federal Funds .....	\$410,684.34	

Analysis of the appropriations granted to the State Department of Health discloses that the State Legislature appropriated 12.5 cents and the Federal Government 10 cents per capita for public health protection in New Jersey during the fiscal year 1938-39. Thus the State Health Department had available for the enforcement of the health laws, the promotion of the public health and the education of the public with respect to their health, approximately 22.5 cents per capita. This figure, while

low in comparison with appropriations of other densely populated states, has enabled the Department to expand its program, to a point where the public is beginning to receive the kind of health service which a metropolitan state ought to have. The most important responsibility that the commonwealth has to its people is the conservation of health and life. With the additional Federal funds available, the Department is fast developing efficient means for providing proper health services and it is expected that the appropriating authorities of the State will continue to make available the necessary funds for matching Federal allotments in order that the government of New Jersey may in greater measure fulfill its obligations to the people in the protection of their health. Considering the fact that the per capita appropriation for public health protection provided by the State is only equal to the tax paid in the purchase of three gallons of gasoline per year, it is apparent that New Jersey is not assuming the full proportion of its obligation to the people in health conservation. The appropriations for the ensuing fiscal year, 1939-1940, by the State have been somewhat drastically reduced and some activities will have to be curtailed. It is hoped that these funds will be replaced during the following year so that the trend toward adequate health service in New Jersey may continue.

OUTLINE OF APPROPRIATIONS AND BUREAU ACTIVITIES  
BUREAU OF ADMINISTRATION

Personnel employed, June 30, 1939: Full time, 16.

	Federal Funds	State Funds	Total
Appropriations 1938-39 .....	\$12,613.28	\$39,518.20	\$52,131.48
Training of personnel .....	25,527.34	.....	25,527.34

This Bureau is in charge of all overhead activities of the Department as a whole, including budgeting, accounting and record keeping. It is charged with the secretarial, administrative and executive work and has a supervisory relation to the functions of all bureaus. Plans for the various activities of the Department are culminated in the Bureau and funds are allocated for their accomplishment. It also edits the bi-monthly publication, "Public Health News," and issues newspaper releases and cautionary bulletins.

## BUREAU OF LOCAL HEALTH ADMINISTRATION

Personnel employed, June 30, 1939: Full time, 32. Part time, 1.

	<i>Federal Funds</i>	<i>State Funds</i>	<i>Total</i>
Appropriations 1938-39 .....	\$53,427.00	\$44,809.48	\$98,236.48
Subsidies to local health departments .....	47,482.00	.....	47,482.00

The investigation and control of communicable diseases, the compilation of standard morbidity and mortality statistics concerning such diseases, the dissemination of informative pamphlets concerning health, the free distribution of diphtheria toxoid, smallpox vaccine and anti-pneumococci sera, rabies control, inspections of sanitary conditions at camps and roadside eating places and the investigation of nuisances prejudicial to the public health are functions of the above captioned Bureau. There are 567 local boards of health in New Jersey and inasmuch as many of them are unable to employ trained health officers to enforce approved, modern standards of health protection, the Bureau attempts by means of help and advice to bridge this gap in the public health organization of the State insofar as it is able. The State has been divided into seven districts and an office in charge of a public health expert employed by the Department has been established in each district for the purpose of aiding local health authorities in guarding the health of their respective communities. These officials give advice and assistance to local boards of health in public health protection.

Funds provided under the Federal Social Security Act, Title VI, have been extremely useful to this Bureau in enlarging the scope of its work. State appropriations have never been adequate in the broad field of disease prevention and in the field of local health administration. The Federal allocation of funds to New Jersey has enabled the Department to advance considerably this service, but the need is great and the State's responsibility in this particular avenue of public health must not be underestimated. Through the use of Federal funds, it has been possible to add two new health districts to the five originally established, additional personnel have been employed, and supplies and equipment have been purchased to make more efficient the operation of the original five district offices; several physicians and sanitarians skilled in epidemiology and disease prevention have been engaged in the central office for service

throughout the State, a public health nursing service is being established, much educational material is being distributed to the public and many lectures by experts illustrated with motion pictures are being given. The value of the service which this bureau can give as the result of these additional funds has been greatly advanced. Federal funds have likewise been made available to some municipalities for the purpose of rounding out their programs where local appropriations are inadequate and in some cases several of the smaller towns have joined together in the formation of a local health district and have been subsidized with Federal moneys. Recognition is also given to a W. P. A. Rural Sanitation Project sponsored by this Bureau under which over 16,000 sanitary pit privies have been constructed in the rural sections of the State.

Federal health authorities have recognized the need for trained public health personnel in order that the money expended for public health improvement may be used to the best possible advantage. Funds have been received for such training and courses have been established by this Bureau at Rutgers University where employees of local boards of health and others may receive special training in specific subjects. Some employees of the State Health Department have also been assigned to courses of special training at other colleges.

## TOXOID FUNDS

	<i>Federal Funds</i>	<i>State Funds</i>	<i>Total</i>
Appropriations 1938-39 .....	\$6,000.00	\$11,351.19	\$17,351.19

Free distribution of diphtheria toxoid and smallpox vaccine is carried on through the Bureau of Local Health Administration. These materials are available to physicians and under limited conditions to local health boards throughout the State. They are distributed under careful supervision and accurate records are kept. As a result of the preventive work which has been carried on in the State, there has been no case of smallpox in seven years and the death rate from diphtheria is extremely low. The efforts of the Bureau to keep these two diseases under control will not be relaxed.

## PNEUMONIA CONTROL

	<i>Federal Funds</i>	<i>State Funds</i>	<i>Total</i>
Appropriations 1938-39 .....	\$6,800.00	\$55,366.23	\$62,166.23

The Legislature during the present fiscal year saw fit to make available funds for the purchase and distribution of anti-pneumococccic sera for the treatment of persons ill with pneumonia and financially unable to pay for it. Sufficient serum was released for the treatment of 782 patients and of the number treated 665 recovered. Federal funds were used to conduct studies with respect to the prevalence of various types of pneumonia in New Jersey. Notwithstanding the saving of life as a result of the appropriation of funds for pneumonia serum, the Legislature did not see fit to furnish an appropriation for this purpose during the ensuing fiscal year. The Bureau still has some of the sera on hand but this will be exhausted before the pneumonia season begins. Failure to continue the campaign among the indigents against this devastating disease is not in accord with recent advances which have been made in public health protection in New Jersey.

## DIVISION OF VENEREAL DISEASE CONTROL

Personnel employed, June 30, 1939:	Full time .....	19
	Part time .....	1
	Part pay .....	54
	<hr/>	
	Total .....	74

	<i>Federal Funds</i>	<i>State Funds</i>	<i>Total</i>
Appropriations 1938-39 .....	\$59,272.00	\$26,340.68	\$85,612.68

This Division is conducting an intensive campaign through medical, epidemiological and educational means, against the venereal diseases. Through follow-up by letter and personal visit, based upon positive laboratory reports and submitted by physicians from suspected cases of venereal disease and under the provisions of the pre-marital and pre-natal laws, check is made to determine whether persons in the communicable stage of syphilis are receiving treatment. Patients found delinquent in treatment as well as known contacts with cases of syphilis, and persons believed to be spreading infection, are supervised by local health officers.

The Division through its staff of field workers assists local health officers in this work and also in investigating and locating sources of infection, in having delinquents return to treatment, and in necessary epidemiological investigation. The Division aids local health departments in organizing clinics for the treatment of indigent and low-wage patients with syphilis and assists financially in the payment of physicians giving medical service in these clinics. Such clinics throughout the State are also furnished certain drugs for the treatment of cases of venereal disease. In addition, similar drugs are furnished physicians for use in private practice on indigent or low-wage patients. The Division also distributes large quantities of educational pamphlets on the subject, furnishes exhibit material for public gatherings and makes available the services of lecturers.

The State supplies less than one-half of the funds available for the control of the venereal diseases. Federal authorities, recognizing the tremendous toll in human lives which is taken by syphilis alone, have been influential in having the Congress pass the Venereal Disease Control Act under which liberal allocations of funds are made to the States. The venereal disease problem is being vigorously attacked by the State Health Department, and, on account of its magnitude, the State's financial responsibility should not be overlooked.

## BUREAU OF BACTERIOLOGY

Personnel employed, June 30, 1939: Full time, 38.

	<i>Federal Funds</i>	<i>State Funds</i>	<i>Total</i>
Appropriations 1938-39 .....	\$40,360.00	\$65,495.21	\$105,855.21

Bacteriological and serological examinations of specimens from suspected and known cases of communicable diseases and from known and suspected carriers of the causative agents of such diseases, are made under the direction of the Bureau of Bacteriology. These specimens are received from physicians, local health officers, State, municipal and private institutions, in addition to those collected by the Department's personnel. During the fiscal year ending June 30, 1939, 214,357 specimens were examined. The Bureau also prepares for the chemical laboratory culture media, sterile collecting bottles and other sterile glassware for the examination of samples of water, sewage and shellfish. It

further inspects and licenses private and municipal laboratories throughout the State.

A great increase in the work of the Bureau has resulted from the expanded activities in venereal disease control. From 68,000 specimens examined for the presence of syphilis in 1937, there has been an increase to over 160,000 in 1939. The pre-marital and pre-natal blood test laws, which became effective during the present fiscal year, have been largely responsible for the increase in blood specimens examined. During the ensuing year, State appropriations for laboratory supplies by means of which these tests are made, have been drastically reduced, and it will be necessary to use Federal funds, if available, to carry out the provisions of statutes passed by the New Jersey Legislature. Unless the State recognizes the importance of providing funds for blood tests, the whole campaign against the venereal diseases will be in jeopardy.

#### BUREAU OF FOOD AND DRUGS

Personnel employed, June 30, 1939: Full time, 20.

	<i>Federal Funds</i>	<i>State Funds</i>	<i>Total</i>
Appropriations, 1938-39 .....	\$49,477.50	\$78,539.43	\$128,016.93

Enforcement of the laws prohibiting the sale and distribution of adulterated food and drugs and the acts governing the sanitation of establishments where foods are produced, prepared, packed, stored or otherwise handled is under the direction of the Bureau of Food and Drugs. Inspections are made of dairy farms, creameries and milk pasteurizing plants, slaughterhouses, ice cream manufacturing plants, beverage bottling plants, cold storage warehouses, egg breaking establishments, canning factories, bakeries, restaurants, meat packing establishments, meat markets, drug stores and miscellaneous food establishments.

One of the important functions of the Bureau is the protection of the milk supply of the State. The law requires operators of milk plants, where milk is received from dairy farms for distribution in New Jersey, to secure a permit from this Department and fixes a permit fee of \$25.00. Rigid inspections are made of these dairy farms and milk plants, and inspectors are required to travel out of the State on many occasions in order that the supervision of the milk supplied to consumers may be as

complete as possible. The number of personnel employed for this work, however, is entirely inadequate to cover the field properly. The inspection force in this Bureau should be increased considerably. It should be noted, however, that New Jersey is particularly fortunate in the fact that approximately 92 percent of its milk supply is pasteurized. The revenue from license fees in connection with this work was \$15,425 in the fiscal year 1938-39.

The Bureau of Food and Drugs also engages in inspections of establishments where ice cream, frozen custards, sherbets and ices are manufactured, and the law fixes a license fee from \$5.00 to \$100.00 depending upon the volume produced. Samples of the product are collected for analysis to ascertain if it conforms with the established standard.

The Bureau is also charged with the enforcement of the laws and regulations governing the sanitation of shellfish. Funds supplied under the Social Security Act made possible the purchase of a new boat which is used in connection with sanitary inspection of shellfish grounds, and the examination of shellfish and the waters in which they grow for the purpose of ascertaining whether or not they are subject to contamination. In addition to the laboratory service conducted on the shellfish boat, the Department operates three land laboratories for this work. Inspections are also made of establishments from which shellfish are shipped in the shell and of shellfish shucking establishments. As a result of the supervision which is carried on by the Bureau of Food and Drugs, New Jersey oysters and clams are accepted for shipment anywhere in the United States as well as places outside of the country.

In view of the importance of protecting New Jersey's food supply, the inspection force of this Bureau should be increased.

#### BUREAU OF ENGINEERING

Personnel employed, June 30, 1939: Full time, 26.

	<i>Federal Funds</i>	<i>State Funds</i>	<i>Total</i>
Appropriations 1938-39 .....	\$16,410.00	\$60,311.67	\$76,721.67

The Bureau of Engineering exercises supervision from a public health standpoint over the pollution of the waters of the State, excepting those waters in the Passaic Valley Sewerage District. It also exercises from the same standpoint supervision over all public water supplies. Samples

of water from 386 supplies, which include 188 municipal supplies, are collected and examined at least four times a year for the purpose of keeping the water supplied within the required standards as established for drinking water. The population served by these supplies numbers approximately 3,139,500. Pollution of the waters of the State, including the Atlantic Ocean and its estuaries, is investigated and recommendations are made to the Director and State Board of Health for the correction of those pollutions causing or threatening injurious health conditions. The Bureau co-operates with municipalities, local boards of health, associations and industry in improving the efficiency of the operation of sewage, industrial and water treatment plants, and assists and advises in the control of objectionable tastes and odors and in the location of objectional bacterial and plant organisms in the public potable water supply. It transmits to the State Department of Education the results obtained in the examination of 693 samples from rural schools, and to the State Water Policy Commission the results obtained in the examination of many samples of water from watersheds in the State.

The Bureau examines plans and specifications for sewer extensions, sewage treatment plants, water purification plants, and alterations and additions to such plants, as well as new and additional sources of water supplies. Examinations are made of water for certification of interstate carriers. It also examines plans and specifications for mausoleums. In order that the maximum efficiency may be obtained in the operation of water supply systems, water purification plants, and sewage treatment plants, the Bureau, with the assistance of a Board of Examiners, examines and licenses the operators of such systems and plants. Upon qualification a license is issued for a fee and is renewed annually.

Special sanitary surveys are made so far as the limited technical personnel of the Bureau of Engineering will permit. During recent years a special investigation of the pollution of the Raritan River, caused by the discharge therein of untreated industrial wastes and raw and inadequately treated domestic sewage, has been carried on. Personnel of the Bureau have co-operated with industries and municipalities in solving the various problems in connection with the treatment of their wastes. As a result, the quality of the water in the Raritan River has been greatly improved, and the success of the Bureau's efforts is nearing completion. For the first time in many years, fish life this year has been observed in

the Raritan River. A similar survey is pending in the Hackensack River Basin.

The Bureau of Engineering is working with the Interstate Commission on the Delaware River Basin, which Commission comprises authorities of Delaware, New Jersey, New York and Pennsylvania, in an effort to conserve and protect the water resources in the Delaware River Basin. This undertaking is great in scope and will prove of tremendous value to the States concerned. Assistance is also being rendered the Governor of New Jersey, who is sponsoring a proposal to use the waters of the Delaware and Raritan Canal as a source of potable water supply, through which Canal it is proposed that a water supply will be carried from the Delaware River to municipalities in the northern part of the State.

Through the allocation of Federal funds to the Bureau of Engineering, three sanitary engineers have been added to the staff and necessary equipment and supplies have been made available. However, on account of the large increase in the work brought about by the construction of sewerage and water systems under P. W. A. and other Federal grants, together with special undertakings for the improvement of the State's resources in connection with the potable water supply, the personnel of the Bureau should be expanded considerably, and, if progress is to continue, New Jersey should not fail to furnish the necessary facilities.

#### BUREAU OF CHEMISTRY

Personnel employed, June 30, 1939: Full time, 15.

	<i>Federal Funds</i>	<i>State Funds</i>	<i>Total</i>
Appropriations 1938-39 .....	\$10,225.00	\$26,380.20	\$36,605.20

The Bureau of Chemistry makes chemical and bacteriological examinations of samples of foods, drugs, water, sewage and trade wastes collected by the Department's representatives in the enforcement of the Pure Food and Drug Act and of the Public Health Laws of New Jersey. The facilities of the laboratory are also extended to local boards of health, State Department of Public Instruction, State Purchasing Agent, New Jersey State Police, and the Fish and Game Commission. Analyses are also made of various samples of food and supplies under specifications for institutional use, rural school waters submitted by local boards

of education, water supplies from camps maintained by benevolent associations and other miscellaneous samples.

Assistance is given to local boards of health and waterworks laboratories desiring to install chemical control or supplement existing laboratory facilities. Instructions in chemical procedures are given the personnel of such laboratories when requested.

The Bureau makes investigations of those establishments producing chemicals which give rise to obnoxious, objectionable fumes and furnishes expert advice to local boards of health to assist in abatement of such nuisances.

In view of the expanded activities of the Food and Drugs and Engineering Bureaus of the Department, the work of the Bureau of Chemistry has accordingly greatly increased. Certain water tests which have formerly been performed in the field under adverse conditions are now efficiently carried out in the chemical laboratory. The use of Social Security Act funds has made possible this improvement in the work of the laboratory and much new and modern equipment has been purchased and old equipment replaced.

#### BUREAU OF MATERNAL AND CHILD HEALTH

Personnel employed, June 30, 1939:	Full time	50
	Part time	69
	Part pay	60
	Total	179

	Federal Funds	State Funds	Total
Appropriations 1938-39	\$81,510.22	\$107,692.53	\$189,202.75

The Bureau of Maternal and Child Health, through supervisory and educational methods, has for its objectives the lowering of infant and maternal mortality and the development to better health of the children of New Jersey. Vast gains toward these objectives have been made during the past few years. During the calendar years 1937 and 1938, the maternal mortality rate in New Jersey was 3.3 per 1000 live births, the lowest in the history of the State; and the infant mortality rate for the same period was 39 per 1000 live births, the lowest in the United States.

The program of the Bureau is carried out upon a basis which is extremely economical to the State. Arrangements are made for the establishment and supervision, principally in the smaller municipalities and rural districts throughout New Jersey, of child hygiene nurses. The nurses instruct mothers and expectant mothers in personal hygiene and in the care of infants and children. These nurses are employed by the Bureau and paid from State funds for periods of demonstration. After approximately a year, the municipality in which the nurse has been placed is expected to pay her salary. Several municipalities sometimes join together in the employment of the nurse. However, after the municipality has assumed the salary, the nurse still remains under the supervision of the Bureau. Under such an arrangement, a unified, supervised program can be carried out throughout the whole State. Thus, while 200 nurses are supervised, only 10 are paid entirely from State funds and 29 are partially paid by the State, the municipality assuming the balance of the salary. Nine are paid by the State from Federal funds, and eight are partially paid. At the present time the municipalities of New Jersey are contributing \$290,000 for child hygiene work as a result of the Bureau's demonstrations.

During 1938 there were 181 Baby Keep-well Stations conducted by the nurses associated with the Bureau. Half of these had physicians in attendance. Stations are conducted for mothers of the low-wage group that they may understand the proper development of their babies, the value of medical supervision, and receive guidance in care, feeding and management. During the same year over 900,000 school children were examined, and where defects were noted, recommendations were made for their correction. Large quantities of educational literature of value to parents were distributed.

The Bureau licenses maternity homes and exercises supervision over some 300 midwives. As a result of the work with midwives and with baby farms, and co-operation with hospitals and social agencies, a better supervision of unmarried mothers and their infants has been secured, and sympathetic care for more than 1,200 mothers and babies is obtained each year.

Active co-operation with the physicians of the State has procured for the medically needy more effective care in maternal and child health. The support of the Medical Society of New Jersey has been one of the

large factors in securing the encouraging results which have been attained in recent years.

Through active supervision, blindness from sore eyes of the new born has been practically eliminated. Sickness in infants and children has been reduced to a minimum through the education of mothers in the proper care of their children and has resulted in a great saving to the State in institutional costs.

Federal Social Security Act funds have been of great assistance in this work. It has been possible to employ a number of experts in a supervisory capacity, to engage many new nurses and physicians and to make available the services of expert obstetricians in difficult cases of child birth. There has also been made available for the low-wage group a delivery nurse service whereby properly trained, registered, experienced nurses may be called by the doctor to assist him in home deliveries. Facilities have been provided through these funds for "refresher courses" for physicians and nurses in order that they may be informed of the most modern practices in connection with delivery and care of infants.

The work of the Bureau of Maternal and Child Health is extremely important in the development of the State's public health program. The economic value to the State of this great branch of the service cannot be discounted and the program deserves ardent support.

#### BUREAU OF VITAL STATISTICS

Personnel employed, June 30, 1939: Full time, 19.

	<i>Federal Funds</i>	<i>State Funds</i>	<i>Total</i>
Appropriations 1938-39 .....	\$1,580.00	\$37,006.41	\$38,586.41

This Bureau has the custody of more than 7,000,000 records of births, marriages and deaths, which have occurred in the State of New Jersey since 1848. Approximately 135,000 records are received, indexed and filed annually.

Upon application, searches are conducted, and certified copies delivered of the records contained in the Bureau's vaults. The revenue produced from this service amounts to approximately \$11,000 per year. Copies are furnished without charge to widows, veterans, veterans' organizations for compensation, and other pension purposes, to children

for school and employment purposes, and to individuals for enlistment in the army or navy of the United States.

Statistical data concerning births, marriages and deaths for the use of the Department in conducting its public health program are furnished by the Bureau of Vital Statistics. Statistical material compiled is eagerly sought by city, State and Federal Departments, insurance companies, chambers of commerce, students, statisticians, and associations interested in disease and accident prevention. The Bureau also supervises the registration of births, marriages and deaths in each municipality of the State.

#### FINANCIAL NEED

At the suggestion of the President of the United States a National Health Conference was called in July, 1939, for the purpose of discussing a report made by a special committee appointed to survey the health and medical care needs of the United States. One of the conclusions reached by the committee was

"that existing services for the conservation of national health are inadequate to secure to the citizens of the United States such health of body and mind as they should have."

In order that the State might fall in line with the national health movement, the Governor of New Jersey later in the year called "The New Jersey Health and Welfare Conference," and committees composed of selected individuals particularly interested in health and welfare, were appointed to study the needs of New Jersey in this field. The reports of the various committees of the Conference have not, as yet, been completed, but the conclusions thus far reached confirm the Department's findings, which agree with the general conclusion of the National Committee, that existing services for the conservation of public health are inadequate to secure to the citizens of New Jersey such health of body and mind as they should have. Space will not permit a detailed description of these inadequacies, but the important activities which need to be inaugurated or expanded may be outlined as follows:

1. State Health Districts
2. Local Health Units
3. Maternal and Child Health

4. Water Purification and Sewage Disposal
5. Food and Drug Inspection
6. Laboratory Services
7. Dental Health
8. General Sanitation
9. Venereal Disease Control
10. Tuberculosis Control
11. Pneumonia Control
12. Control of other Communicable Diseases
13. Cancer Control
14. Mental Hygiene
15. Diabetes
16. Heart Disease
17. Adult Hygiene
18. Occupational Diseases
19. Health Education
20. Public Health Nursing Service
21. Nutrition

Attention must also be given to the quality of the personnel employed in the State Health Department. It is a natural conclusion that this vital service cannot be rendered by personnel who are underpaid or inadequately trained. It is also evident that such expansion as has occurred thus far necessarily places far greater burdens and responsibilities upon the technical employees of the Department who control various types of activities, and serious consideration should be given to the readjustment of salaries of these individuals in order that they may be sufficiently compensated to ensure the success of the program. Salary ranges for properly trained medical and technical personnel are entirely too low and for this reason the Department has in many instances been handicapped in filling important positions.

While the Federal appropriations allocated to New Jersey under the Social Security Act have greatly improved public health services in this State, the studies which have been conducted by recognized health authorities show conclusively that the program is by no means complete. Recently an attitude to curtail State appropriations, and to encourage the use of Federal funds to relieve the State of its responsibilities, has

developed. Such a procedure can only result in failure for a program which has been planned on the basis of adequate public health services. On the other hand, an adequate program is economically sound and will return great dividends to New Jersey in the reduction of institutional care and the increased productivity of a healthy public.

#### BOARD OF EXAMINERS AND EXAMINATIONS

Four examinations on the last Friday of July, October, January and April were held as usual.

At the meeting of the Department on February 14, 1939, James J. Hagan, Jersey City; Patrick J. Monaghan, Newark; Edwin H. Coward, M.D., Pleasantville; together with Frank Yates, I. H. Shaw and Cecil K. Blanchard of the State Department of Health were reappointed as members of the Board of Examiners of Health Officers and Inspectors for the ensuing year. The Board reorganized by the election of James J. Hagan as President and Frank Yates as Secretary for one year.

During the year there were filed with the Department 312 applications for examination as Health Officer or as Inspector of the various classes.

Licenses were issued to those receiving a general average of 70 percent or more, as follows: Health Officer, 20; Sanitary Inspector of the first class, 65; Sanitary Inspector of the third class, 3; Food and Drug Inspector, 3; Lay Meat Inspector, 5; Milk Inspector, 2; Plumbing Inspector, 29.

#### ANNUAL CONFERENCE

The 29th Annual Conference of State and Local Health Officials of New Jersey was held in the State House, Trenton, on February 17, 1939. The program of the Conference follows:



*Morning Session, 10:15 A. M.*

## What Every Board of Health in New Jersey Should Do.

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|--|---|
| 1. Have a balanced program.                                    | Frank J. Osborne, Health Officer, East Orange; member Appraisal Form Committee.         |
| 2. Organize legally. Register Vital Statistics.                | Wallace T. Eakins, Asst. Epidemiologist, N. J. State Department of Health.              |
| 3. Prevent, control and sometimes treat communicable diseases. | I. W. Knight, M.D., District Health Officer, N. J. State Department of Health.          |
| 4. Promote the health of the individual.                       | Julius Levy, M.D., Consultant N. J. State Department of Health.                         |
| 5. Secure sanitary surroundings, water, milk, foods, etc.      | Cecil K. Blanchard, Asst. Epidemiologist, N. J. State Department of Health.             |
| How such a balanced program can be obtained.                   | Wm. H. MacDonald, Chief, Bureau of Local Health Adm., N. J. State Department of Health. |

*Afternoon Session, 2:30 P. M.*

## J. LYNN MAHAFFEY, M.D., Director of Health, presiding.

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|--|---|
| Pneumonia, A Public Health Problem.                          | H. A. Holle, M.D., Passed Assistant Surgeon U. S. Public Health Service.                    |
| New Jersey's Pneumonia Program.                              | Harvey F. Doe, M.D., Medical Assistant N. J. State Department of Health.                    |
| Six Months' Experience with the Pre-marital Examination Law. | John Hall, Field Supervisor N. J. State Department of Health.                               |
| Pre-marital Tests in a Venereal Disease Control Program.     | Theodore Rosenthal, M.D., Director, Bureau of Social Hygiene, N. Y. City Health Department. |
| The National Health Conference.                              | Wm. H. MacDonald.   |
| Program of the State Committee on Health and Welfare.        | Joseph H. Kler, M.D., Chairman Executive Committee.   |

*Evening Session, 7:30 P. M.*

## DR. MAHAFFEY, presiding.

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|---|---|
| The Controlled Groups as a Case-Finding Medium. | Frederick P. Lee, M.D., Health Officer, Paterson.   |
| Operation of the New Federal Food and Drug Law. | W. S. Frisbie, in charge Office of Co-operation, Food and Drug Adm., U. S. Department of Agriculture. |

## CEMETERIES

The Department gave consideration to the application of the Carpatho-Russian St. Peter's and St. Paul's Cemetery Association for reversal of the decision of the Township Committee of Randolph Township, Morris County, by which decision the aforesaid Township Committee refused the application of the said Cemetery Association for the location of a cemetery or burial ground within the Township of Randolph. A special committee of the Department was appointed and a hearing relative to the said application was given by the committee at Dover, N. J., on September 2, 1938. Inasmuch as there appeared to be no menace to the public health involved, or other objection which would justify sustaining the said decision, the Department, on recommendation of the committee, voted that the decision of the Township Committee and Board of Health of Randolph Township, Morris County, in refusing to grant permission to the Carpatho-Russian St. Peter's and St. Paul's Cemetery Association to locate a cemetery in the Township of Randolph, Morris County, be reversed and that permission be granted by the State Department of Health to said Cemetery Association to locate a cemetery in Randolph Township.

Consideration was given to the application of the Holy Cross Cemetery, Inc., for reversal of the decision of the Township Committee and Board of Health of Ocean Township in refusing to grant permission for the establishment of a cemetery by said Holy Cross Cemetery, Inc., in Wayside, Township of Ocean, Monmouth County. A special committee of the Department was appointed and a hearing on the appeal was conducted at Oakhurst on October 4, 1938. It was pointed out that the enterprise is primarily intended for the burial of Italian Catholics and that one Catholic cemetery is now available for private use and another can be consecrated for the burial of indigents. It, therefore, did not appear that the need for another private cemetery was insistent and the Department, on recommendation of the committee, voted that the action of the Township Committee and Board of Health of Ocean Township in refusing to grant permission for the establishment of the proposed cemetery be sustained and that the appeal of the Holy Cross Cemetery, Inc., be denied.

## ANIMAL EXPERIMENTATION

During the fiscal year 1938-1939 the following permits for experimentation on animals were granted in accordance with the provisions of Title 4:22-16, Article 2, Revised Statutes of New Jersey, for the purpose of promoting pharmacological research and testing pharmaceuticals:

Department of Biological Science of Rutgers University, New Brunswick, New Jersey; permit dated February 20, 1939.

Newark Beth Israel Hospital, William Antopol, M.D., Director of Laboratories, 201 Lyons Avenue, Newark, New Jersey; permit dated April 17, 1939.

## LEGISLATION

The following legislation of interest to health officials was enacted by the Legislature during the year 1939:

S-61, *Chap. 13, Taggart*. To appropriate \$25,000 for the purchase of pneumonia serum.

S-92, *Chap. 294, Bowers*. To provide tuberculosis tests for school children.

S-93, *Chap. 295, Bowers*. To authorize boards of education to require physical examinations of all employees at least once in three years and also examinations of employees evidencing ill health.

S-94, *Chap. 296, Bowers*. Companion bill to S-92. To provide for a more thorough above-the-waist examination of school pupils.

S-101, *Chap. 146, Foran*. (For the President) To approve and apply to that part of the Delaware River Basin lying in this State uniform rules and regulations for the control of pollution of such waters and its tributaries which have been approved by joint negotiations between New York, New Jersey and Delaware and the Federal government.

S-144, *Chap. 299, Bowers*. To permit boards of education to require vaccination for diphtheria.

S-214, *Chap. 248, Taggart*. To provide for the extermination of the marihuana weed through the joint action of the prosecutor of the pleas and the State Department of Health; appropriates \$2,500.

S-281, *Chap. 254, Scott*. To regulate tourist camps, trailer camps and overnight lodging places. Exempts licensed hotels having more than 10 sleeping rooms for guests.

S-352, *Chap. 261, Foran*. (For the President) To provide for the inspection by the Department of Health of restaurants, lunch rooms, cabins, bar rooms, hotels, or "other places where food or drink is offered for sale."

S-433, *Chap. 336*. Validates notices heretofore given by State Board of Health which had technical defects.

A-10, *Chap. 227, Cavicchia*. To provide that common law marriages entered into after April 1, 1939, shall be void.

A-11, *Chap. 116, Donahue*. To regulate the sale and distribution of eggs removed from incubators for hatching purposes.

A-245, *Chap. 320, Palese*. Makes numerous amendments to the act regulating foods, drugs, cosmetics, appliances and devices intended for use in the treatment of human ailments, to bring State regulations more in conformance with Federal regulations.

A-406, *Chap. 176, Pierson*. To permit municipalities owning their own water supplies or which contemplate establishing water supplies to make Reconstruction Finance Corporation loans for the establishment or improvement thereof.

A-464, *Chap. 280, Wickham*. To increase the membership of the State Board of Health by adding a registered pharmacist.

A-501, *Chap. 201, Stokes*. To permit the local boards of health or inspectors to insert newspaper advertisements where it is believed there is danger of the existence of rabies, instead of serving personal notice to owners of dogs.

A-549, *Chap. 282, Hess*. To continue the study of work of the Delaware and Raritan Canal Commission; appropriates \$8,000.

A-610, *Chap. 185, Shepard*. To insert the descriptive word "Natural" in the act regulating the labeling of milk.

The following bills were introduced in the Legislature, but had not become laws at the time this report was submitted:

S-47, *Foran*. To make it a misdemeanor for any person or firm to wilfully or maliciously interfere, directly or indirectly, with any person or firm while lawfully engaged in the production, transportation, buying or selling of food or food products.

S-99, *Foran*. (For the President) To permit certified copies of Department of Health records to be admitted in evidence.

S-140, *Stanger*. To prohibit the distribution and sale of milk except in containers of such a character as to keep such milk beyond the reach of prowling domestic animals.

S-160, *Proctor*. To permit health officers to make arrests for violations of town ordinances or health board ordinances committed in their presence.

S-164, *Bowers*. To provide for the labeling of milk and cream to show the day on which it was produced.

S-171, *Stanger*. To require physicians, pharmacists and hospital heads to report the existence of venereal diseases in patients to the State Health Department, and the State Department to report such fact to the local Board of Health. Makes it a misdemeanor for a person infected with such disease not to apply for treatment.

S-186, *Driscoll*. To establish a uniform system of licensing dogs under the New Jersey Society for the Prevention of Cruelty to Animals.

S-244, *Stanger*. To regulate the taking of shellfish in the tidal waters of the State.

S-245, *Stanger*. To permit the taking of shellfish from the Great Egg Harbor River and the Tuckahoe River between April 1st and May 31st.

S-262, *Bowers*. To provide for the labeling of milk and cream so as to show the State in which the milk or cream was produced.

S-310, *Taggart*. To appropriate \$12,000 to the State Department of Health for a dental health educational program.

S-318, *Scott*. To provide for licensing by the State Department of Health of persons conducting scientific experiments on domestic animals.

DEPARTMENT OF HEALTH

S-326, *Foran*. (By request) To regulate the inspection of milk supplies with the approval of the Secretary of Agriculture.

A-13, *Donahue*. To regulate the sale of ice cream, ices and kindred frozen products.

A-38, *Friedland*. To provide for the licensing of restaurants, except hotels and dining cars.

A-132, *Mahr*. To provide for the municipal licensing, anti-rabic vaccination and muzzling of dogs.

A-172, *Wickham*. To appropriate \$10,000 for the eradication of the marihuana weed by the State Board of Health.

A-186, *Freund*. To create a State Water Authority to take over the functions of the Water Policy Commission, the North Jersey District Water Supply Commission, the Passaic Valley Water Commission and the Bergen County Water Commission.

A-286, *Glickenhans*. To permit the State Board of Health to create a Bureau of Narcotic Control; provides for a supervisor at \$3,500 a year.

A-417, *DeVoe*. To regulate the physical and chemical composition of and quantity of smoke, gases, etc., discharged into the atmosphere and to control the same.

A-500, *Palese*. To regulate the treatment of dead human bodies transported outside of the State.

A-516, *Schaeffer*. To permit ice cream merchants doing business in several municipalities to obtain a general permit from the State Board of Health rather than several permits from the various municipalities.

A-547, *Wilensky*. To dedicate the Delaware and Raritan Canal and its feeder to the purpose of public water supply.

A-559, *Brovane*. To provide for the inspection and licensing under the Department of Health of proposed construction camps where the same are to be occupied by five or more.

A-608, *McClave*. To permit the State Health Department to designate a secretary at \$500 a year to the persons engaged in conducting examinations to licensed operators of sewage treatment, water purification and water supply systems.

Statement of Revenue of the Department of Health of the State of New Jersey for the Year Ending June 30, 1939

Source	Amount
Analyses of water samples .....	\$745.00
Audiometer rental .....	204.60
Laboratory receipts .....	323.24
Licenses—cold storage .....	290.00
“ goat milk .....	54.41
“ ice cream .....	6,540.00
“ milk plant .....	15,475.13
“ narcotics .....	175.00
“ sewer and water plant operators .....	3,298.00
Miscellaneous .....	2.82
Penalties—violations F & D Laws .....	6,707.82
Searches of vital certificates .....	12,265.35
<b>Total revenue transmitted to the State Treasury .....</b>	<b>\$46,081.37</b>

BUREAU OF ADMINISTRATION

STATEMENT OF EXPENDITURES OF THE DEPARTMENT OF HEALTH OF THE STATE OF NEW JERSEY FOR THE YEAR ENDING JUNE 30, 1939

STATE FUNDS  
CENTRAL ADMINISTRATION BUREAUS

	Adminis- tration	Local Health	Vital Statistics	Food and Drugs	Engineer- ing	Chemistry	Bacteri- ology	Totals
Salaries .....	\$25,610.09	\$38,156.54	\$33,292.50	\$33,000.00	\$49,901.40	\$22,533.28	\$34,092.48	\$236,586.29
Laboratory supplies .....	.....	317.30	171.00	439.23	.....	2,527.89	11,201.67	14,168.79
Stationery and office supplies .....	2,592.53	1,440.08	.....	.....	1,062.66	108.37	.....	3,189.20
Auto maintenance .....	.....	137.10	201.78	62.05	.....	.....	.....	2,502.74
Office equipment .....	.....	.....	.....	.....	103.40	.....	124.51	745.64
Engineering supplies .....	.....	446.85	.....	.....	998.20	26.80	.....	998.20
Replacing cars .....	.....	.....	.....	.....	.....	.....	.....	446.85
Miscellaneous lab. expense .....	25.00	10.10	28.71	.....	86.25	.....	494.72	494.72
Other materials and supplies .....	3,008.01	661.28	20.61	8,609.15	3,384.92	46.06	32.40	228.52
Traveling expense .....	.....	231.80	.....	.....	.....	68.27	199.83	15,952.07
Auto insurance .....	.....	511.91	1,625.97	136.45	399.56	.....	.....	450.25
Printing .....	2,989.35	.....	708.00	.....	.....	29.00	520.05	6,212.29
Binding certificates .....	.....	588.00	500.00	.....	.....	.....	.....	500.00
Rental tabulating machines .....	.....	336.00	708.00	.....	.....	.....	.....	1,296.00
Rental garages .....	.....	.....	.....	239.64	384.00	.....	.....	720.00
Court expenses .....	2,348.40	157.72	119.91	12.70	189.47	271.07	1,171.17	381.94
Miscellaneous expense .....	.....	.....	.....	.....	.....	319.89	898.95	4,270.44
Laboratory equipment .....	.....	.....	.....	.....	2,500.00	.....	.....	1,218.84
Invest. Raritan river .....	.....	.....	.....	.....	.....	.....	.....	2,500.00
Pre-natal blood tests .....	.....	.....	.....	.....	.....	.....	14,803.99	14,803.99
<b>Totals .....</b>	<b>\$36,573.38</b>	<b>\$42,994.68</b>	<b>\$36,668.48</b>	<b>\$42,499.22</b>	<b>\$59,460.61</b>	<b>\$25,930.63</b>	<b>\$63,539.77</b>	<b>\$307,666.77</b>

STATEMENT OF EXPENDITURES OF THE DEPARTMENT OF HEALTH OF THE STATE OF NEW JERSEY  
FOR THE YEAR ENDING JUNE 30, 1939—Continued

STATE FUNDS  
APPROPRIATIONS FOR SPECIFIC PURPOSES

	Maternal and Child Health	Veneral Disease Control	Ice Cream Licenses	Milk Plant Licenses	Sanitary Shellfish Control	Toxicoid Distribution	Anti-Pneumo. Sera	Totals
Salaries .....	\$83,639.75	\$17,617.68	\$2,100.00	\$8,580.00	\$15,060.00	\$1,620.00	\$898.67	\$129,516.10
Lab. supplies, drugs and biolog. ....	539.39	5,736.47	.....	.....	328.71	9,449.53	54,283.13	70,337.23
Stationery and office supplies.....	709.18	140.94	241.42	349.47	153.72	36.42	.....	1,631.15
Auto maintenance .....	.....	.....	.....	.....	408.74	.....	.....	408.74
Office equipment .....	.....	179.50	.....	45.05	80.76	.....	.....	305.31
Inspectors' equipment .....	.....	.....	.....	152.00	.....	.....	.....	152.00
Other material and supplies .....	.....	.....	.....	.....	.....	.....	.....	.....
Travel .....	15,866.28	1,787.77	166.64	2,356.03	1,859.23	97.85	99.99	22,233.79
Insurance—boat and car .....	.....	.....	43.90	.....	156.30	.....	.....	200.20
Renting .....	1,179.06	355.36	.....	.....	46.35	34.77	19.95	1,635.69
Printing .....	.....	.....	48.00	.....	312.00	.....	.....	360.00
Rental—laboratory and car .....	.....	.....	12.30	.....	.....	.....	.....	12.30
Court expenses .....	.....	.....	.....	.....	516.59	.....	.....	516.59
Maintenance of plants .....	.....	.....	.....	.....	1,607.91	.....	.....	1,607.91
Maintenance of boats .....	.....	329.98	.....	.....	.....	1.50	.....	497.75
Miscellaneous expenses .....	166.27	.....	.....	.....	242.61	.....	.....	242.61
Highland lab. and boat No. 4 .....	.....	.....	.....	.....	.....	.....	.....	.....
Totals .....	\$102,099.93	\$26,147.70	\$2,612.26	\$11,482.55	\$20,773.12	\$11,240.07	\$55,301.74	\$229,657.37

TOTAL EXPENDITURES

Central Administration Bureaus .....	\$307,666.77
Appropriations for specific purposes .....	229,657.37
Total .....	\$537,324.14
State funds expended—salaries—U. S. Children's Bureau Project .....	3,413.00
Transferred to State House Commission—tel. and tel. charges .....	3,530.98
Total .....	\$544,270.12

NEW JERSEY STATE DEPARTMENT OF HEALTH  
UNITED STATES PUBLIC HEALTH SERVICE  
STATEMENT OF EXPENDITURES 1938-1939  
FEDERAL FUNDS

Project	Salaries	Travel	Materials and Supplies	Total Expendi- tures
Bureau of Administration .....	\$6,415.85	\$582.98	\$5,147.91	\$12,146.74
Bureau of Local Health Administration .....	8,866.67	2,397.32	7,040.50	18,304.49
Pneumonia Control .....	2,192.63	84.54	2,043.00	4,320.17
Bureau of Vital Statistics .....	360.00	.....	1,039.95	1,399.95
Bureau of Food and Drugs .....	10,985.62	4,216.32	29,218.85	44,420.79
Bureau of Chemistry .....	8,927.40	.....	748.83	9,676.23
Bureau of Engineering .....	9,940.00	2,458.22	2,318.92	14,717.14
Bureau of Bacteriology .....	13,534.96	.....	14,001.58	27,536.54
Rural Sanitation .....	1,800.00	3,977.30	99.97	5,877.27
Atlantic, Cape May Health District .....	2,347.04	382.51	168.14	2,897.69
Camden, Salem, Gloucester .....	3,060.00	410.02	411.42	3,881.44
Somerset, Hunterdon, Middlesex .....	.....	.....	240.00	240.00
Burlington Health District .....	4,200.00	14.04	610.94	4,824.98
Bergen, Passaic Health District .....	2,796.68	280.22	152.85	3,229.75
Sussex, Warren, Morris .....	5,792.32	431.66	908.78	7,132.76
Monmouth-Ocean Health District .....	1,800.00	371.13	92.78	2,263.91
Training of Personnel .....	13,577.92	357.44	.....	13,935.36
Veneral Disease Control Act—				
Central Administration .....	16,418.06	2,274.31	30,800.42	49,492.79
State Laboratory Services .....	4,187.42	64.66	7,087.16	11,339.24
Local Services .....	6,774.95	.....	.....	6,774.95
U. S. Children's Bureau—				
Maternal and Child Health .....	70,280.71	7,632.08	2,979.18	80,891.97
Total expenditures from current appropriation 1938-1939 .....	\$194,258.23	\$25,934.75	\$105,111.18	\$325,304.16

NEW JERSEY STATE DEPARTMENT OF HEALTH  
UNITED STATES PUBLIC HEALTH SERVICE  
STATEMENT OF EXPENDITURES 1938-1939—Continued

Project	Salaries	Travel	Materials and Supplies	Total Expendi- tures
Expenditures of Subsidized Local Health Units				
Jersey City .....	\$1,000.00	.....	.....	\$1,000.00
Monmouth County Unit No. 1 .....	2,000.00	\$100.00	\$300.00	2,400.00
Monmouth County Unit No. 2 .....	6,632.88	921.68	1,090.85	8,645.41
Union County Unit No. 1 .....	7,050.00	750.00	1,600.00	9,400.00
Union County Unit No. 2 .....	3,909.80	379.92	106.79	4,396.51
City of East Orange .....	2,700.00	56.70	640.85	3,397.55
City of Camden .....	2,100.00	.....	92.00	2,192.00
City of Newark .....	7,600.00	.....	1,000.00	8,600.00
City of Paterson .....	4,821.00	.....	1,684.00	6,505.00
City of Plainfield .....	.....	.....	500.00	500.00
Total expenditures of local units ...	\$37,813.68	\$2,208.30	\$7,014.49	\$47,036.47
Total Federal funds expended .....	\$232,071.91	\$28,143.05	\$112,125.67	\$372,340.63

## Report of the Bureau of Local Health Administration

For the Year Ending June 30, 1939

W. M. H. MacDONALD, CHIEF

Expansion of the plan of distributing anti-pneumococcic sera, action requiring local health boards in several counties to have dogs confined on account of danger of spread of rabies, and the formation of groups of local boards of health for the support of venereal disease treatment clinics were matters of particular interest in the activities of the Bureau during the year.

Of great interest from the standpoint of the public is the fact that New Jersey's death rate from pneumonia for the year 1938 was the lowest recorded annual rate and that this year was the seventh consecutive year no case of smallpox was known to occur in the State.

There were 82,752 cases of the 34 diseases declared reportable by State regulations recorded in the office of the State Department during the calendar year 1938. Over two-thirds of these cases were of chickenpox, measles and whooping cough, which still exact a heavy toll of illness chiefly among our child population.

The 1938 diphtheria record of 574 cases and 33 deaths was slightly higher than either of the two preceding years. As in 1937, the counties of Hudson, Salem, Passaic and Camden showed case rates higher than the other counties. Fifty-one percent of the fatal cases of diphtheria were in children less than five years old. This record again should emphasize the need for continued and, in fact, increased efforts to have parents secure for their children the protection afforded against diphtheria by toxoid.

Although for another year, the seventh in succession, the State was free from smallpox, the occurrence of cases in many other states confirms the statement previously made that, with modern methods of transportation and the marked movements of population especially in vacation

periods, the disease may be introduced into the State at any time. In spite of New Jersey's record, therefore, vigilance in stressing vaccination must not relax.

Poliomyelitis in 1938 was low in prevalence. Five of the 10 fatal cases of the disease occurred in children below five years of age.

Scarlet fever was lower than the normal, both in the number of reported cases and recorded deaths.

Typhoid fever was recorded as the cause of only 18 deaths during the year.

The lowest annual case and death rates recorded in New Jersey from tuberculosis (93.6 and 44.3) was the distinction of 1938.

Pneumonia also showed the lowest recorded annual death rate, 54.2 per 100,000. By counties, the highest rate in 1938 was recorded in Ocean, followed by the counties of Hunterdon, Sussex, Warren and Gloucester.

Fifty-eight percent of the total deaths from measles (31) and all of the deaths from whooping cough (54) were among children who had not yet reached the fifth year of life. This again emphasizes the fact that these diseases are particularly serious among very young children.

### RABIES

Two fatal cases of rabies in humans were recorded during the calendar year. One, a young child bitten on August 10, became ill on September 1 and died nine days later. Prior to the illness no report of the bite had been made to the local health department and no anti-rabic treatment was given. The second case was in an adult male bitten on July 30, who became ill on October 4, and who died on October 10. Anti-rabic treatment according to records available, was given between August 4 and 17.

That cases of rabies in humans occurred in the State in 1938 is not remarkable in view of the high prevalence of rabies among animals, particularly during the later months of the year. Reports were received of 573 cases of rabies which is considerably greater than the number of reports received during any year since the present system of reporting was adopted. All but 10 of the cases were in dogs.

NUMBER OF CASES OF RABIES IN ANIMALS REPORTED BY LOCAL BOARDS OF HEALTH, BY COUNTIES AND BY MONTHS, DURING THE YEAR 1938

County	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Atlantic .....	0	1	0	0	2	0	0	0	0	0	0	0	3
Bergen .....	0	0	0	0	0	5	2	5	11	7	5	14	49
Burlington .....	1	0	1	1	2	1	0	2	0	2	0	0	10
Camden .....	0	0	0	1	9	5	5	4	0	0	1	0	25
Cape May .....	0	0	0	0	0	0	0	0	0	0	0	0	0
Cumberland .....	0	0	0	0	0	0	0	0	0	0	0	0	0
Essex .....	0	3	9	6	13	12	20	14	15	20	17	26	155
Gloucester .....	0	0	0	0	0	1	0	0	0	0	0	0	1
Hudson .....	0	0	0	0	0	4	2	0	1	4	10	3	24
Hunterdon .....	0	0	1	0	0	0	0	2	0	0	0	0	3
Mercer .....	1	2	0	2	3	0	0	0	1	3	2	0	14
Middlesex .....	3	1	7	5	15	7	7	12	8	7	2	6	80
Monmouth .....	0	0	0	0	0	0	0	0	0	0	1	1	2
Morris .....	0	4	10	3	5	2	3	3	0	2	0	1	37
Ocean .....	0	0	0	0	0	0	0	3	0	0	1	0	4
Passaic .....	0	0	0	0	0	1	0	4	2	3	5	11	26
Salem .....	0	0	0	0	0	0	0	0	0	0	0	0	0
Somerset .....	0	4	2	1	4	1	1	1	4	3	2	3	28
Sussex .....	0	0	0	0	0	0	0	1	1	0	0	0	2
Union .....	0	1	3	3	2	2	5	8	14	22	17	17	94
Warren .....	0	0	1	4	2	3	1	1	0	2	3	1	18
State .....	5	16	34	26	57	44	46	60	57	75	67	86	573

The total number of persons in the State who received Pasteur treatment as a preventive of rabies during the year is not definitely known. However, in annual reports of local boards of health, it is stated that 1,075 persons to the knowledge of these boards received such treatments. The local health boards further report that expenditures from local public funds during the year in furnishing anti-rabic treatments to persons unable to pay was \$7,950.25.

All cases of dog bite, under existing statutes, are reportable by physicians and others to local boards of health irrespective of any suspicion of rabies in the offending animal. In a summary of the reports of dog bites made in conformity with the law, the local boards of health listed 14,668 reported cases during 1938.

A communication was sent boards of health in the northeastern counties early in February calling their attention to the increased prevalence of rabies and urging local action designed to prevent its spread.

The special joint committee on rabies referred to in the annual report for the year 1937, continued active during the year and, in addition to a general consideration of the rabies problem, gave much study through a special sub-committee, to changes or additions to existing legislation which might be desirable for a more comprehensive and effective regu-

lation of dogs as part of general rabies control measures. The committee found its assignment so complicated and far-reaching that it was not prepared to submit its final recommendations to be considered before the 1938-39 session of the Legislature.

Meanwhile, in view of the continued increase in rabies in the northeastern section of the State, the State Department of Health at its meeting on February 14 decided to invoke the authority granted it by statute to order certain boards of health to notify each dog owner to confine dogs in a pen or enclosure except when on leash accompanied by a responsible person, for a period of three months or until a certificate of release was issued by the local board. This action designed to have dogs confined was recommended by the Joint Rabies Committee.

This was the first time the State Department had attempted to apply on a large scale any order to confine dogs. The original order applied to each board of health in the counties of Bergen, Passaic, Essex, Union, and Somerset and to eight boards of health in the northern section of Middlesex County.

Practically all boards of health involved promptly prepared and served the required notices to dog owners and secured the co-operation of local municipal governing bodies in catching and disposing of stray unclaimed dogs.

While the prevalence of rabies in the involved area was reduced during the three months' period, at its termination the degree of reduction was not sufficient in the opinion of the Department to justify withdrawal of the order. Consequently the order was extended for another period of three months and several boards of health in Morris County, where a new focus of infection of rabies occurred, were also included within its provisions. The order was still in effect at the end of the fiscal year.

Application of this order revealed two very practical difficulties in the administration of the existing statute. The act required that a notice by a local board of health to the owner of a dog to confine the animal, be served in writing. This necessitates personal service of each notice and most boards of health do not have sufficient personnel to do this; further the board of health as a rule does not know all persons within its jurisdiction who own dogs. Bringing legal action in a district court as required in the present statute in case of violation of an order of the local board was also found inconvenient by many health officials.

Therefore, an amendment to the present law was prepared and submitted to the Legislature making it possible for a board of health to serve the necessary notice on dog owners by newspaper notification rather than personal service; the amendment also changed the procedure for penalty collection in case of violation. This amendment had not yet been finally passed upon by the Legislature on June 30.

#### INVESTIGATION OF COMMUNICABLE DISEASE OUTBREAKS

The Bureau continues to stress the importance of careful investigation of cases of communicable diseases to determine, if possible, the source of infection and the likelihood of exposure of other persons. Employees in the Bureau during the fiscal year 1938-39 investigated 362 cases of the reportable diseases and 137 cases of gastro-enteritis.

One outbreak of 88 relatively mild cases of gastro-enteritis was investigated in a private institution for adult male students. From the information collected in the investigation it appeared the illness resulted from eating pressed veal which had been kept about 24 hours at room temperature during the midsummer period.

#### UNDULANT FEVER

Fifty-two cases of this disease were reported during the calendar year, none of which was recorded as fatal. The highest number of cases reported in any county was in Morris. Histories of reported cases were obtained either in the field by employees in the Bureau or through local health officials. These histories showed that 34 of the 52 patients regularly used raw milk; two used both raw and pasteurized milk; six were reported to have used only pasteurized milk; four used pasteurized milk regularly and in addition used raw milk occasionally; one used pasteurized milk regularly but occasionally used milk from some unknown source; in two instances no data as to the use of milk was available.

Three cases not above included were in persons who because of their occupation regularly come in contact with animals. Two were employed in slaughterhouses and one was employed on a hog farm.

The high proportion of cases of undulant fever reported each year among users of raw milk compared with the reported cases among users of pasteurized milk should be and is an added incentive for still more general use of the pasteurized product.

During the year 1938-39 at least five local boards of health adopted ordinances requiring that uncertified milk sold locally shall be pasteurized. The total population of New Jersey municipalities in which the local boards of health now make such a requirement by ordinance is 1,246,866, or about one-third of the population of the State.

#### ROCKY MOUNTAIN SPOTTED FEVER

The continued and slightly increasing prevalence of this disease as indicated by case reports is disturbing. Sixteen cases were reported during 1938 resulting in eight deaths. Nearly all the cases occurred in the southern half of the State. However, throughout this area the cases were widely distributed. Lacking practical methods of tick control, news articles and pamphlets were issued directing attention to the possible danger from ticks and containing suggestions for the prevention of infection from this source. Through the co-operation of the National Institute of Health a limited quantity of Rocky Mountain spotted fever vaccine was made available for use.

#### MALARIA

The number of reported cases of malaria dropped from 27 in 1937 to 16 in 1938. Histories of these cases obtained by employees in the Bureau or through local health officials clearly showed at least 11, and probably the 12th case had been infected outside New Jersey. Of the remaining four reported cases the diagnosis was not confirmed by laboratory examination in two instances.

#### TYPHOID CARRIERS

At the close of the fiscal year 82 persons were recorded in the Department records as carriers of typhoid bacilli. Two were withdrawn from the list during the year, one by death and one after repeated negative specimens following removal of the gall bladder. Seven persons were added to the list of carriers; three were discovered through investigations to establish the source of infection of known cases of typhoid fever; three were listed after repeated specimens of discharges were found to contain typhoid bacilli after clinical recovery from an acute attack. One of the persons added to the list during the year was a carrier coming to New Jersey from another state.

A few of the carriers presented problems of care and maintenance experienced in similar cases in previous years. Unfortunately requests to the Legislature for the appropriation of a small sum to permit the Department to aid needy carriers in emergencies, under the provisions of Article 4A, Chapter 4, Title 26, of the Revised Statutes have not been acted upon favorably.

#### ASSISTANCE IN DIAGNOSIS

In response to special requests from physicians or local health departments aid was given in reaching a definite diagnosis in 26 cases suspected of being communicable diseases. The diagnosis established in these instances included scarlet fever, Rocky Mountain spotted fever, typhoid fever, measles, chickenpox, anthrax and tularemia.

#### COMMUNICABLE DISEASES ON DAIRIES

Twenty-eight cases of scarlet fever, two cases of tuberculosis, one of typhoid fever, one of diphtheria and one of erysipelas were reported on 33 dairy premises at which 8,680 quarts of milk were produced daily. Arrangements were made at each of these premises for continuance of the sale of milk.

#### FREE TOXOID AND VACCINE

Distribution of diphtheria toxoid and smallpox vaccine was continued under Rules previously adopted by the Department and no important change was made in the method of distribution. Fifty-nine distributing stations at strategic points about the State were serving voluntarily at the end of the fiscal year. Reports show that 46,741 children received diphtheria toxoid during the year from the State supply furnished free and that 28,545 persons were vaccinated against smallpox with the State material. Each of these figures is appreciably higher than in any preceding year.



NUMBER OF PERSONS REPORTED AS GIVEN FREE STATE TOXOID OR VACCINE  
DURING THE YEAR ENDING JUNE 30, 1938

County	Diphtheria Immunizations	Smallpox Vaccinations
Atlantic .....	882	564
Bergen .....	4,786	3,821
Burlington .....	952	344
Camden .....	6,743	2,426
Cape May .....	449	394
Cumberland .....	350	277
Essex .....	11,953	5,195
Gloucester .....	830	458
Hudson .....	5,188	3,518
Hunterdon .....	598	52
Mercer .....	2,651	1,346
Middlesex .....	1,108	1,854
Monmouth .....	349	1,281
Morris .....	762	872
Ocean .....	230	221
Passaic .....	4,607	2,573
Salem .....	349	425
Somerset .....	173	1,201
Sussex .....	112	4
Union .....	3,169	1,455
Warren .....	500	264
Totals .....	46,741	28,545

Eight percent of the children reported as receiving the toxoid were less than one year old; 42 percent were less than five years old.

Reports of persons vaccinated with the State vaccine show three percent to have been children less than one year old while 46 percent were children below five years of age.

#### PNEUMONIA SERUM

Shortly before the beginning of the fiscal year of 1938-39, the Department, under authority and with funds granted by the Legislature, undertook the distribution of anti-pneumococcic sera for use in the treatment of patients financially unable to pay for the material. A plan of distribution was established whereby sera would be available at distributing stations at strategic points about the State, services being given

gratis by such stations. The number of distributing centers necessarily was limited because the high cost of serum and moderate funds available for its purchase prohibited keeping large supplies of material in stock. Chiefly for the same reasons the number of types of sera furnished was restricted to Types 1, 2, 5, 7, 8, horse serum, and Types 1 and 3, rabbit serum. Types 5, 7 and 8, horse serum, and Type 3, rabbit serum, were placed in 17 stations. Other types of the horse serum furnished were available at these same stations and at 17 other places.

Laboratories at which typing of pneumococci might be done in any case before release of serum for its treatment, were approved in conformity with law after investigation by the Bureau of Bacteriology. Such approval had been given 115 laboratories at the end of the fiscal year.

Although many requests were received for a supply of typing serum for use at approved laboratories none was furnished except a limited amount procured through small unexpended funds near the end of the year.

The program was conducted with the co-operation of the Pneumonia Committee of the State Medical Society and the Joint Pneumonia Committee made up of representatives of several groups especially interested. County Medical Societies co-operated and set aside at least one regular meeting for discussion of pneumonia. Speakers were furnished through the State Health Department for several such meetings and motion pictures on the subject of pneumonia were shown. A short non-technical film on pneumonia distributed by the Metropolitan Life Insurance Company was shown at a large number of motion picture theaters in the State.

At the beginning of the year, July 1, 1938, the Legislature made available for the purchase of serum, the balance unexpended from the appropriation of \$25,000 made in the preceding year. This amount became exhausted and the furnishing of material had to be curtailed until the Legislature made an additional appropriation of \$10,000 and still later of \$25,000. All the sums appropriated were used by the end of the year although a substantial amount of serum remained undistributed in stations and available for use during the next fiscal year.

Serum was withdrawn from stations by 452 physicians to treat 782 patients from the time the material was first available early in 1938 to

June 30, 1939. Of these cases 407 were affected with Type 1 pneumococci and 130 with Type 2.

DISTRIBUTION OF ANTI-PNEUMOCOCCI SERA  
FROM APRIL 14, 1938, TO JUNE 30, 1939

County	No. Patients for Whom Sera Withdrawn by County of Withdrawals					No. Patients by County of Residence		All Types
	Horse					Rabbit		
	1	2	5	7	8	1	3	
Atlantic	7	4	0	3	5	0	2	20
Bergen	24	5	6	6	8	1	1	58
Burlington	14	5	1	2	0	0	0	25
Camden	38	5	3	15	5	1	2	62
Cape May	0	0	0	0	0	0	0	1
Cumberland	6	1	1	0	0	0	0	13
Essex	87	34	22	23	29	3	3	200
Gloucester	1	3	3	3	2	0	0	7
Hudson	80	19	5	12	17	0	0	134
Hunterdon	0	0	0	0	0	0	0	2
Mercer	15	3	0	7	2	0	3	22
Middlesex	23	7	1	9	2	0	0	46
Monmouth	27	1	0	0	3	0	0	32
Morris	12	1	4	4	1	0	0	21
Ocean	0	1	0	0	0	0	0	2
Passaic	30	7	4	4	5	2	0	47
Salem	0	0	0	0	0	0	0	4
Somerset	2	5	0	1	0	0	0	8
Sussex	9	15	0	1	1	0	0	23
Union	29	13	1	4	2	0	0	49
Warren	3	1	0	0	0	0	0	6
Total	407	130	51	94	82	7	11	782

Physicians obtaining serum were asked to forward this Department at the termination of the case, a history form showing the amount of serum used in each dose administered and other pertinent information. At the close of the year 777 of such report forms had been received. A tabulation of data on the report forms showed that of the 777 cases treated, 117 died. The mortality in the group was 15 percent. Data from various sources indicate that elsewhere in recent years the mortality in cases of pneumonia of the same specific types of pneumococci

ranged from 25 percent to 42 percent, depending upon the type involved. Had these rates prevailed among the cases treated with the serum supplied by the State, 132 persons who recovered would have died. This warrants the conclusion that the use of serum supplied by the State resulted in saving up to 132 lives.

TABLE SHOWING DISTRIBUTION OF 777 CASES OF PNEUMONIA TREATED WITH STATE SERUM, BY TYPE, WITH THE MORTALITY AND THE PROBABLE SAVING OF LIVES

Type and Kind of Serum	Cases Treated	No. Treated Cases		Percent Mortality	Estimated Mortality Without Serum	Estimated Lives Saved
		Recovered	Died			
Horse 1	409	360	49	12.	30	74
Rabbit 1	3	2	1	33.	30	0
Horse 2	129	106	23	17.8	42	27
Rabbit 3	14	9	5	36.	50	2
Horse 5	48	42	6	12.5	33	10
Horse 7	92	78	14	15.2	25	9
Horse 8	82	63	19	23.1	35	10
Total	777	660	117	15.		132

\* Estimate based upon figures in "PNEUMONIA & SERUM THERAPY" by Lord & Heffron, published in 1938.

Other observations from the data tabulated from the 777 case history forms filed by physicians are:

Average duration of disease before serum given	3.14 days
Average amount of serum administered per case	119,055 units
Number cases in which blood cultures were taken	305
Number cases having severe reactions following serum	29
Number cases having mild reactions following serum	189
Number cases showing sequelae (empyema, etc.)	178

In co-operation with the United States Public Health Service, a special study was carried on to determine the relative proportion of cases of pneumonia caused by the different types of pneumococci throughout the State. In this study, arrangements were made with laboratories in different sections of the State to save all specimens submitted for typing of pneumococci. These specimens were collected by a messenger and were typed by one technician at the State Laboratory. The services of this technician as well as other aid was furnished by the United States Public Health Service.

From the time this work started, August 22, 1938, to June 30, 1939, a total of 1,829 specimens were checked and in 1,474 pneumococci were found. Type 1 was most prevalent, followed by Types 3, 8, 7, 6 and 4 in the order named.

TYPES OF PNEUMOCOCCI FOUND IN SPUTUM SPECIMENS

Type	No.	Type	No.	Type	No.	Type	No.
I	203	VIII	119	XV	15	XXII	29
II	47	IX	32	XVI	35	XXIII	23
III	160	X	29	XVII	31	XXIV	9
IV	65	XI	24	XVIII	43	XXV	9
V	41	XII	5	XIX	37	XXVII	3
VI	66	XIII	30	XX	34	XXVIII	13
VII	97	XIV	51	XXI	11	XXIX	24
						XXX	14

## UNITED STATES SOCIAL SECURITY ACT FUNDS

Continued subsidies for public health administration through the United States Public Health Service under Title VI of the Federal Social Security Act made it possible to retain the personnel previously assigned this Bureau and to pay rental charges for four district offices. In addition there was added to the force in one district office a Public Health nurse for communicable disease work whose principal duties are the investigation of cases of syphilis treated at local clinics, the follow up of contacts to such cases and also the follow up of cases delinquent in treatment.

The services of a physician on a part-time basis were utilized in lecturing to small groups of colored physicians in different parts of the State on the subject of tuberculosis with particular reference to this disease among the colored race.

Another physician on a part-time basis was assigned to visit local boards of health and industrial plants in the metropolitan area of the State to encourage and seek co-operation in the Department's proposal for blood testing of employed persons for evidence of syphilis.

For a short time a veterinarian was employed to aid in rabies control work.

Some subsidy from Federal funds was also continued as described last year to the boards of health in Newark, Jersey City, Camden, Paterson, East Orange and Plainfield.

Not only the Bureau but the Department suffered an irreparable loss during the year in the death of Dr. I. W. Knight. Dr. Knight was employed by the Department on April 25, 1916, as Assistant Epidemiologist and later as the first State District Health Officer.

Subsidies from Federal funds were also continued to four local health units, each comprised of a group of three or more local boards of health jointly employing the same local health officer and having a joint advisory committee of representatives of each of the component local boards. One of the units is comprised of Asbury Park and four other nearby municipalities; one includes Long Branch and five other municipalities; another includes Union Township, Kenilworth and Roselle in Union County while the fourth consists of Cranford Township, Clark Township and Garwood Borough in Union County.

## INSPECTIONS OF LUNCH ROOMS AND CAMPS

Inspection of lunch rooms in rural areas and in small towns, either in conjunction with local health officials or independently, was carried on to the extent possible. A total of 1,376 inspections and reinspections were made of such establishments by employees in the Bureau and a large number of violations of provisions of statute pertaining to the sanitation of such places were corrected.

Late in the year at a special conference called by His Excellency, Governor Moore, the opinion was expressed by many that the approaching New York World's Fair would attract to New Jersey many tourists from all parts of the country journeying to the Fair and that control of sanitary conditions at highway eating places and other places open to the public would be a special problem for which health authorities of the State and the municipalities should assume responsibility. To meet such a situation two factors had to be considered; personnel and legislation giving the State Health Department definite jurisdiction over certain conditions pertaining to sanitation with authority to bring legal action promptly and readily in case of continued or flagrant violations.

No State funds for increased personnel were appropriated. However, in budgets of Federal funds allotted through the United States Public

Health Service, provision was made for additional inspection service for the summer beginning July 1, 1939.

A bill granting the Director of Health joint authority with local boards of health in matters relating to basic sanitation at public places was prepared and introduced for consideration by the Legislature. Public places within the scope of the proposed act were so defined as to include certain places of business, tourist cabins and camps as well as restaurants and lunch rooms. At the end of the year considered in this report this bill had not yet become a law.

Inspection of camps also was carried on during the year as extensively as practical. Many camps chiefly for boys and girls have been established in the State, most of which are in the northern counties. Experience has shown that local boards of health in many rural areas cannot be depended upon to ascertain conditions of sanitation at such camps and moreover, experience has shown that persons or organizations responsible for many such camps, cannot be depended upon even though intensely interested, to seek out and correct conditions at such places which might seriously affect the health of campers. Inspection by the State Department of Health partly meets this situation. During the year employees in the Bureau made inspections of 157 camps.

#### SPECIAL INVESTIGATIONS AND SURVEYS

Complaints are referred to this Bureau of many conditions alleged to be public health nuisances. These include complaints of private water supplies, private sewage collection and disposal systems, garbage and refuse accumulations, fly and mosquito breeding area, etc. Matters of this character properly come within the jurisdiction of local health boards. During the year, however, the Bureau made 1,510 investigations of matters or complaints of this nature chiefly in company with representatives of local boards of health.

Employees in the Bureau joined with employees in the Bureau of Engineering in making special house to house inspections of sewage disposal at premises in Somerdale, Camden County; Hamilton Township, Mercer County; Piscataway Township, Middlesex County; Passaic Township, Morris County, and in making an extensive inspection of private water supplies in Englishtown Borough, Monmouth County.

Considerable time and effort of employees in the Bureau were given during the year to the work and deliberations of several Committees of the New Jersey Health and Welfare Conference called by Governor Moore to study health needs in the State as related to general findings and recommendations for the health and welfare of the nation as set forth in the report considered in July, 1938 at the National Health Conference.

#### TRAINING OF HEALTH PERSONNEL

Courses for training personnel for health departments, conducted in co-operation with Rutgers University, were offered as in recent years. These comprised (1) summer courses, held two days a week for six weeks, covering a two-summer period, which afford 144 hours basic training in the field of public health; and (2) winter courses held Wednesday evenings and Saturday afternoons for two terms of ten weeks each, which offer advanced training to employees of health departments and others approved by the Department.

Thirty students were enrolled in the summer courses in 1938 and received training in public health administration by means of lectures, laboratory work and field trips.

The 1938 winter courses offered instruction in communicable disease control, public information service for a health department, sanitation, bacteriology, food control, water supply and sewage disposal, public health problems, public speaking, parasitology, and insect control.

There were 138 persons admitted to these 12 winter courses, and 111 completed one or more of them. Since three classes were held at the same time, the maximum number of courses one person could attend during the winter was four. Five students completed four courses each, four completed three courses, 41 finished two courses, and 61 finished one course.

The faculty of Rutgers University, the Department's staff and various experts in the subjects taught were drawn upon to give instruction in these courses. Students and teachers both felt this method of training meets an important need in a practical way. The winter courses were supported by Federal funds allotted to New Jersey and were free to students approved by the Department.

One of the medical assistants assigned to the Bureau completed the post graduate course for physicians offered by the Harvard School of Public Health and leading to the degree of Master of Public Health. Three medical assistants also attended a symposium on rickettsial diseases at Harvard.

Three sanitarians in the Bureau were given leaves of absence to attend courses covering five months' instruction at the School of Public Health, University of Michigan. Two of them who attended the school in 1938 also received the degree of Master of Science in Public Health.

#### OTHER WORK

Services rendered and work performed by the Bureau during the year, in addition to the activities mentioned, are indicated in part below:

Number of conferences with local health officials on questions pertaining to health work .....	5,691
Number of conferences with other public officials, physicians, and citizens on matters relating to public health .....	6,536
Number of meetings of local boards of health attended .....	218
Attendance at other public health meetings .....	405
Number of lectures given in summer courses for health officials .....	55
Number of lectures given in special courses for health officials .....	40
Number of other talks or lectures given or papers read .....	72
Number of persons given Schick, Dick or Mantoux tests or aid rendered in such tests .....	1,133
Number of water samples collected (private supplies) .....	794
Number of specimens collected from humans, either by employees of the Bureau, or with their aid, to be examined for pathogenic bacteria .....	1,642
Number of other specimens and samples collected for laboratory examination .....	120

#### WORKS PROGRESS ADMINISTRATION PROJECT

The Rural Community Sanitation project operated during the past year in all counties except Hudson and Essex. Under this project there are constructed outdoor pit privies of a standard type consisting of a concrete slab cover for the pit and a concrete riser for the seat, as part of the pit cover. Special urinal units are also being constructed to meet many requests for such units at semi-public places. All work in constructing and erecting the units is performed by WPA labor; all materials used in the construction including lumber, hardware, cement, paints, etc., are supplied by the person for whom the unit is built and erected.

The project sponsored by the Department is administered in the Bureau of Local Health Administration under the direction of Dr. N. E. Newbury, who is employed by the United States Public Health Service. Field assistants previously paid by the United States Public Health Service could not be continued on the payroll due to reduced appropriation to that organization, and during the latter part of the year, although the three assistants continued to work, their compensation was reduced and came partly from other funds. During the year, 6,218 units were erected. At the close of the year June 30, 1939, 402 men were working on the project. The cost of building material purchased by individuals and used in the construction of the 16,966 units erected since the project first opened amounts to \$414,371.66.

#### RURAL SANITATION UNITS CONSTRUCTED IN COUNTIES OF NEW JERSEY

County	Date Project Opened	Number Units Built for Fiscal Year Ending June 30, 1939	Total Number Units Built to June 30, 1939
Atlantic .....	February 24, 1936 .....	624	2,188
Burlington .....	February 24, 1936 .....	276	1,223
Camden .....	February 24, 1936 .....	329	1,073
Cape May .....	February 24, 1936 .....	339	907
Cumberland .....	February 24, 1936 .....	544	2,066
Gloucester .....	February 24, 1936 .....	353	1,234
Salem .....	February 25, 1936 .....	270	741
Mercer .....	July 1, 1936 .....	326	1,145
Middlesex .....	September 7, 1937 .....	269	386
Monmouth .....	February 24, 1936 .....	364	1,168
Ocean .....	February 24, 1936 .....	664	1,874
Somerset .....	September 7, 1937 .....	327	427
Union .....	September 7, 1937 .....	225	304
Bergen .....	July 1, 1937 .....	178	387
Hunterdon .....	September 7, 1937 .....	238	352
Morris .....	September 7, 1937 .....	196	293
Passaic .....	July 1, 1937 .....	204	377
Sussex .....	July 15, 1937 .....	155	337
Warren .....	September 7, 1937 .....	337	484
Total .....		6,218	16,966

## DIVISION OF VENEREAL DISEASE CONTROL

A report of the activities of this Division will be found elsewhere. In formulating the policy of developing venereal disease treatment clinics in several counties, groups of boards of health therein joined, with State aid, in establishing and maintaining clinics for infected persons in the low-wage group.

District health officers of the Bureau expended much time and effort in encouraging and aiding the organization of such groups. The fact that boards of health have pooled resources in such an undertaking, and through a central representative body maintained a clinic, is a definite demonstration of the practicability of joint local administration of a health project, if the local desire is sufficiently determined.

Such joint groups, organized either as legal regional health commissions or as voluntary health committees, existed at the close of the year in eight counties; one in Atlantic, three in Burlington, two in Cape May, one in Cumberland, one in Gloucester, one in Hudson, six in Monmouth, four in Morris and one in Ocean.

## LOCAL BOARDS OF HEALTH

In 1938 the number of municipalities, townships and other places in the State authorized by law to have a local health department was 567. The local boards of health in all but five of these districts filed with the State Department of Health an annual report as required by law. The information contained in the 562 reports received showed that the local health departments had funds available for their use during 1938 to the amount of \$2,428,226.37, or 55 cents per capita. This sum does not include \$191,016.80 which these departments reported as spent for hospital maintenance, garbage and rubbish removal. In 1931, 552 local departments reported an expenditure of \$2,179,409.00, not including expenditures for hospitals, garbage and rubbish removal. This sum was equivalent to 52 cents per capita.

The amount of money available for local health departments in incorporated municipalities was, as usual, considerably greater than in townships. In 1938 the amount available to health departments in such municipalities, less deductions of amounts spent for hospital maintenance, garbage and rubbish removal, was equal to 63 cents per capita.

The comparable figure for townships was 23 cents per capita. In 1931 the corresponding amounts per capita were 59 cents and 23 cents.

The number of employees reported by 562 local health departments for the year 1938 was 2,018. Of this number 728 were recorded as full-time employees while 1,290 served on a part-time basis. The corresponding numbers for the year 1931 were 688 full-time employees and 1,043 part-time. Of the 562 local health departments which filed annual reports, 195 reported the employment of a health officer. Sixty-one of these health officers were employed on a full-time and 134 on a part-time basis.

## REPORTED CASES OF CHICKENPOX IN NEW JERSEY

For the Calendar Year 1938 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	481	75	75	76	76	56	29	16	7	1	9	26	85
1 year	699	97	112	139	72	69	58	29	12	9	8	29	65
2 years	931	147	136	174	122	103	74	37	9	7	17	42	61
3 years	1118	174	182	219	155	107	83	29	9	10	16	52	86
4 years	1947	224	227	240	200	132	97	30	4	9	20	71	88
Under 5 years	4571	717	732	848	625	469	341	132	41	36	70	220	310
5 to 9 years	12463	2036	2113	2371	1706	1103	907	178	22	68	327	762	850
10 to 14 years	1587	236	290	308	248	189	104	13	7	12	31	84	85
15 to 19 years	101	33	38	33	27	20	8	2	1	0	2	8	14
20 to 24 years	77	8	12	18	12	10	4	5	1	0	0	2	5
25 to 29 years	86	10	14	14	13	10	5	2	0	1	2	3	7
30 to 34 years	44	10	4	8	4	6	2	1	0	1	1	3	4
35 to 44 years	6	0	1	0	1	2	0	2	0	0	0	0	0
45 to 54 years	2	2	0	0	0	0	0	0	0	0	0	0	0
55 to 64 years	4	1	2	0	1	0	0	0	0	0	0	0	0
65 years and over	25	6	3	1	1	4	0	0	0	0	2	3	5
Age not stated													
Total	19056	3079	3209	3890	2643	1793	1371	335	72	118	435	1083	1310

## REPORTED CASES AND DEATHS FROM CHICKENPOX IN NEW JERSEY

For the Calendar Year 1938 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year	229	2	252	1	481	3
1 year	340	1	359	0	699	1
2 years	490	0	432	1	931	1
3 years	560	0	553	0	1113	0
4 years	632	0	665	0	1347	0
Under 5 years	2310	3	2261	2	4571	5
5 to 9 years	6495	2	5968	0	12463	2
10 to 14 years	813	0	774	0	1587	0
15 to 19 years	97	0	94	0	191	0
20 to 24 years	36	0	41	0	77	0
25 to 29 years	44	0	42	0	86	0
30 to 34 years	25	0	19	0	44	0
35 to 44 years	4	0	2	0	6	0
45 to 54 years	0	0	2	0	2	0
55 to 64 years	2	0	2	0	4	0
65 years and over	16	0	9	0	25	0
Age not stated						
Total	9642	5	9214	2	19056	7

## REPORTED CASES OF DIPHTHERIA IN NEW JERSEY

For the Calendar Year 1938 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	17	5	4	1	3	1	1	0	0	0	1	1	1
1 year	23	1	5	2	1	3	4	0	0	1	2	1	3
2 years	40	6	9	5	3	3	1	1	3	1	2	1	6
3 years	39	1	5	7	5	4	1	2	2	1	3	2	6
4 years	36	5	3	2	5	2	3	3	3	1	2	3	4
Under 5 years	135	18	28	17	17	13	10	6	8	4	9	8	19
5 to 9 years	212	18	27	23	23	21	23	6	8	10	13	18	20
10 to 14 years	91	12	12	8	3	7	6	7	6	4	9	10	7
15 to 19 years	33	4	6	4	2	1	1	5	0	2	2	2	4
20 to 24 years	24	1	5	3	3	2	0	1	1	2	3	0	4
25 to 34 years	39	7	7	2	1	3	2	2	1	1	2	3	0
35 to 44 years	12	2	2	1	2	3	2	2	1	1	5	1	7
45 to 54 years	5	1	0	0	1	1	1	1	1	0	1	0	0
55 to 64 years	1	0	0	0	0	0	0	0	0	1	0	0	0
65 years and over	1	0	0	0	0	0	0	0	0	0	0	0	1
Age not stated	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	574	63	85	60	57	49	47	28	20	25	36	42	62

## REPORTED CASES AND DEATHS FROM DIPHTHERIA IN NEW JERSEY

For the Calendar Year 1938 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
	Under 1 year	14	2	3	0	17
1 year	14	1	9	1	23	2
2 years	20	1	20	4	40	5
3 years	25	4	14	1	39	5
4 years	19	2	17	3	36	5
Under 5 years	92	10	63	7	155	17
5 to 9 years	113	6	90	3	212	9
10 to 14 years	48	0	43	1	91	1
15 to 19 years	9	0	24	0	33	0
20 to 24 years	8	0	16	0	24	0
25 to 34 years	10	1	29	0	39	1
35 to 44 years	3	0	9	2	12	2
45 to 54 years	2	0	3	1	5	1
55 to 64 years	1	1	0	1	1	2
65 years and over	1	0	1	0	1	0
Age not stated	0	0	1	0	1	0
Total	287	18	287	15	574	33

## REPORTED CASES OF DYSENTERY IN NEW JERSEY

For the Calendar Year 1938 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	1	0	0	0	0
1 year	1	0	0	0	0	0	0	0	0	1	0	0	0
2 years	1	0	0	0	0	1	0	0	0	0	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	4	0	0	0	0	1	0	0	0	1	2	0	0
5 to 9 years	4	0	0	0	0	0	0	0	2	1	1	0	0
10 to 14 years	2	0	0	0	0	0	1	0	0	1	0	0	0
15 to 19 years	2	0	0	0	0	0	0	0	2	0	0	0	0
20 to 24 years	2	0	0	0	0	1	0	0	0	0	0	0	1
25 to 34 years	3	0	0	0	0	2	0	1	0	0	0	0	0
35 to 44 years	2	0	0	1	0	0	1	0	0	0	0	0	0
45 to 54 years	1	1	0	0	0	0	0	0	0	0	0	0	0
55 to 64 years	1	0	0	0	0	0	1	0	0	1	0	0	0
65 years and over	2	0	0	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	23	1	0	1	0	4	2	3	2	3	5	1	1

## REPORTED CASES AND DEATHS FROM DYSENTERY IN NEW JERSEY

For the Calendar Year 1938 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year	0	1	1	0	1	1
1 year	1	0	0	0	1	0
2 years	1	0	0	0	1	0
3 years	0	0	0	1	0	1
4 years	1	0	0	0	1	0
Under 5 years	3	1	1	1	4	2
5 to 9 years	4	0	0	0	4	0
10 to 14 years	0	0	2	0	2	0
15 to 19 years	2	0	0	0	2	0
20 to 24 years	2	0	0	0	2	0
25 to 34 years	1	1	0	0	2	1
35 to 44 years	2	2	2	1	4	3
45 to 54 years	1	0	0	1	1	1
55 to 64 years	1	1	0	0	2	1
65 years and over	2	1	0	0	3	1
Age not stated	0	0	0	0	0	0
Total	18	6	5	4	23	10

## REPORTED CASES OF EPIDEMIC CEREBRO-SPINAL MENINGITIS IN NEW JERSEY

For the Calendar Year 1938 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	4	0	0	0	0	2	1	1	0	0	0	0	0
1 year	0	0	0	0	0	0	0	0	0	0	0	0	0
2 years	1	0	0	0	0	0	0	0	1	0	0	0	0
3 years	4	2	0	1	0	0	0	0	0	0	0	0	0
4 years	2	2	0	0	0	0	0	0	0	0	0	0	0
Under 5 years	11	4	0	1	0	2	2	1	0	1	0	0	0
5 to 9 years	8	3	2	0	1	0	1	0	0	1	0	0	0
10 to 14 years	0	2	0	0	0	0	0	0	0	0	0	0	1
15 to 19 years	5	0	0	1	1	0	0	1	0	0	0	1	1
20 to 24 years	3	0	1	0	0	0	0	0	0	0	1	0	1
25 to 34 years	9	1	0	1	0	0	8	0	0	0	0	1	3
35 to 44 years	4	1	2	0	0	0	1	0	0	0	0	1	0
45 to 54 years	10	3	1	2	0	0	2	1	0	0	0	1	0
55 to 64 years	0	0	0	0	0	0	0	0	0	0	0	0	0
65 years and over	1	0	0	0	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	54	12	8	5	3	2	8	4	0	2	2	2	6

## REPORTED CASES AND DEATHS FROM EPIDEMIC CEREBRO-SPINAL MENINGITIS IN NEW JERSEY

For the Calendar Year 1938 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year	3	2	1	0	4	2
1 year	0	0	0	0	0	0
2 years	0	0	1	1	1	1
3 years	1	1	3	0	4	1
4 years	0	0	2	1	2	1
Under 5 years	4	3	7	2	11	5
5 to 9 years	6	0	2	1	8	1
10 to 14 years	2	1	2	2	3	3
15 to 19 years	4	1	1	0	5	1
20 to 24 years	1	1	2	1	3	2
25 to 34 years	8	2	1	2	9	4
35 to 44 years	2	0	0	2	2	2
45 to 54 years	4	2	6	2	10	4
55 to 64 years	0	1	0	0	0	1
65 years and over	1	1	0	0	1	1
Age not stated	0	0	0	0	0	0
Total	32	12	22	10	54	22









REPORTED CASES OF TRICHINOSIS IN NEW JERSEY

For the Calendar Year 1938 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	1	1	0	0	0	0	0	0	0	0	0	0	0
Under 5 years	1	1	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	1	1	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	3	0	1	0	1	0	0	1	0	0	0	0	0
35 to 44 years	2	0	0	0	1	0	0	0	0	0	1	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	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	7	2	1	0	2	0	0	1	0	0	1	0	0

REPORTED CASES AND DEATHS FROM TRICHINOSIS IN NEW JERSEY

For the Calendar Year 1938 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	1	0	1	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	0	0	0	0	0	0
25 to 34 years	3	0	0	0	3	0
35 to 44 years	2	0	0	0	2	0
45 to 54 years	0	0	0	0	0	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	6	0	1	0	7	0

REPORTED CASES OF TUBERCULOSIS IN NEW JERSEY

For the Calendar Year 1938 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	12	1	1	1	2	1	1	1	0	1	1	1	1
1 year	16	2	0	8	1	2	1	1	2	0	0	1	0
2 years	15	1	3	2	1	0	2	1	2	2	1	0	0
3 years	15	1	0	0	1	0	4	4	2	2	0	1	0
4 years	12	0	1	1	0	0	2	0	2	3	1	2	0
Under 5 years	70	5	5	10	5	3	10	7	8	3	5	1	
5 to 9 years	85	9	6	12	5	6	10	15	7	1	3	7	2
10 to 14 years	97	10	4	11	12	6	6	14	10	6	6	6	6
15 to 19 years	337	16	28	43	33	32	42	22	27	27	21	22	24
20 to 24 years	519	52	44	51	33	49	49	58	41	37	36	32	37
25 to 34 years	918	65	69	110	77	70	77	73	73	83	68	71	81
35 to 44 years	809	66	70	63	62	77	80	73	84	68	63	52	45
45 to 54 years	645	45	56	63	59	63	52	56	59	44	42	32	42
55 to 64 years	441	35	49	37	34	32	47	41	45	31	27	31	32
65 years and over	211	12	14	18	21	25	23	20	24	13	14	10	17
Age not stated	16	2	2	4	2	1	1	2	0	1	0	0	1
Total	4148	317	347	422	344	366	427	385	378	314	302	265	281

REPORTED CASES AND DEATHS FROM TUBERCULOSIS IN NEW JERSEY

For the Calendar Year 1938 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year	8	7	4	7	12	14
1 year	11	7	5	8	16	15
2 years	10	6	3	3	15	9
3 years	10	3	5	1	15	4
4 years	5	3	7	3	12	6
Under 5 years	44	26	26	22	70	48
5 to 9 years	46	7	39	10	85	17
10 to 14 years	45	9	52	10	97	19
15 to 19 years	111	23	228	69	337	92
20 to 24 years	179	70	340	121	519	191
25 to 34 years	433	181	485	218	918	384
35 to 44 years	525	242	284	128	809	370
45 to 54 years	494	276	151	76	645	352
55 to 64 years	334	197	107	90	441	287
65 years and over	146	129	63	72	211	192
Age not stated	8	6	8	0	16	6
Total	2365	1151	1783	811	4148	1962

REPORTED CASES OF TYPHOID FEVER IN NEW JERSEY

For the Calendar Year 1938 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	5	0	0	0	1	1	1	1	1	0	0	0	0
Under 5 years	5	0	0	0	1	1	1	1	1	0	0	0	0
5 to 9 years	17	2	0	1	3	0	0	0	4	2	1	1	2
10 to 14 years	21	0	1	0	3	1	2	1	7	2	3	0	1
15 to 19 years	15	1	1	2	0	0	0	1	4	1	3	1	0
20 to 24 years	22	0	0	1	3	5	2	0	3	5	1	2	0
25 to 34 years	25	3	1	0	1	4	2	2	5	0	3	2	2
35 to 44 years	17	0	0	1	0	2	2	5	2	4	0	1	0
45 to 54 years	17	0	0	3	1	1	1	5	1	3	0	0	2
55 to 64 years	4	0	0	0	0	0	0	0	2	1	0	0	0
65 years and over	1	0	0	0	0	0	0	0	1	0	0	0	0
Age not stated	2	0	0	0	0	1	0	0	1	0	0	0	0
Total	146	6	3	8	12	15	12	18	28	21	9	6	8

REPORTED CASES AND DEATHS FROM TYPHOID FEVER IN NEW JERSEY

For the Calendar Year 1938 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	1	0	0	0	1
3 years	0	0	0	0	0	0
4 years	2	0	3	0	5	0
Under 5 years	2	1	3	0	5	1
5 to 9 years	10	0	7	1	17	1
10 to 14 years	14	1	7	3	21	4
15 to 19 years	11	1	4	1	15	2
20 to 24 years	10	1	12	3	22	4
25 to 34 years	10	2	16	1	26	3
35 to 44 years	12	1	6	1	17	1
45 to 54 years	11	1	5	0	16	1
55 to 64 years	3	0	1	0	4	0
65 years and over	1	0	0	0	1	0
Age not stated	1	0	1	0	2	0
Total	90	8	56	10	146	18

REPORTED CASES OF UNDULANT FEVER IN NEW JERSEY

For the Calendar Year 1938 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	1	0	0	0	0	0	0
10 to 14 years	2	0	0	0	0	0	0	0	1	1	0	0	0
15 to 19 years	4	1	0	0	0	0	1	0	0	1	0	0	0
20 to 24 years	10	1	0	0	0	1	3	0	0	1	1	1	1
25 to 34 years	11	1	2	0	1	0	2	0	0	1	1	0	2
35 to 44 years	9	0	0	0	2	2	1	2	0	1	0	0	1
45 to 54 years	10	1	2	3	0	0	1	0	1	0	0	0	2
55 to 64 years	3	0	0	1	0	1	0	0	0	1	0	0	0
65 years and over	2	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	52	4	5	4	5	4	7	6	2	4	3	1	7

REPORTED CASES AND DEATHS FROM UNDULANT FEVER IN NEW JERSEY

For the Calendar Year 1938 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	1	0	1	0
10 to 14 years	0	0	2	0	2	0
15 to 19 years	0	0	1	0	1	0
20 to 24 years	3	0	1	0	10	0
25 to 34 years	7	0	4	0	11	0
35 to 44 years	0	0	2	0	9	0
45 to 54 years	2	0	5	0	10	0
55 to 64 years	5	0	1	0	3	0
65 years and over	0	0	2	0	2	0
Age not stated	0	0	0	0	0	0
Total	33	0	19	0	52	0

REPORTED CASES OF WHOOPING COUGH IN NEW JERSEY

For the Calendar Year 1938 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	740	47	80	52	47	48	55	88	77	75	55	64	102
1 year	941	58	51	37	51	64	72	104	121	92	95	79	127
2 years	1158	54	74	72	71	94	67	126	149	118	70	115	150
3 years	1325	69	62	90	82	90	82	159	172	129	106	111	183
4 years	1341	86	72	81	87	88	119	144	137	130	82	139	182
Under 5 years	3515	308	289	352	338	384	395	621	658	542	378	508	744
5 to 9 years	5464	350	365	393	362	394	402	537	658	369	340	697	801
10 to 14 years	535	25	31	59	33	42	35	49	58	40	32	60	91
15 to 19 years	44	3	2	4	1	5	5	3	1	7	2	6	5
20 to 24 years	20	3	0	1	0	0	5	7	1	0	2	1	2
25 to 34 years	43	4	3	4	2	4	2	4	5	4	3	4	5
35 to 44 years	29	1	0	1	1	7	4	6	3	1	2	1	2
45 to 54 years	9	0	1	0	1	3	0	2	0	0	0	0	2
55 to 64 years	6	0	0	0	0	0	2	1	1	2	0	0	0
65 years and over	6	0	1	0	1	1	1	0	1	0	0	0	1
Age not stated	25	1	3	1	4	1	4	1	1	0	2	4	3
Total	11716	695	695	814	742	837	858	1226	1214	967	761	1252	1656

REPORTED CASES AND DEATHS FROM WHOOPING COUGH IN NEW JERSEY

For the Calendar Year 1938 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year	393	18	347	14	740	32
1 year	450	5	491	6	941	11
2 years	578	2	480	4	1158	6
3 years	654	1	651	2	1325	3
4 years	674	1	667	1	1341	2
Under 5 years	2770	27	2736	27	5515	54
5 to 9 years	2717	0	2741	0	5464	0
10 to 14 years	268	0	287	0	555	0
15 to 19 years	17	0	27	0	44	0
20 to 24 years	3	0	17	0	20	0
25 to 34 years	8	0	35	0	43	0
35 to 44 years	7	0	8	0	29	0
45 to 54 years	1	0	8	0	9	0
55 to 64 years	0	0	6	0	6	0
65 years and over	0	0	6	0	6	0
Age not stated	18	0	7	0	25	0
Total	5818	27	5898	27	11716	54

REPORTED CASES AND DEATHS FROM CHICKENPOX AND DIPHTHERIA BY COUNTIES FOR 1938

COUNTIES	CHICKENPOX			DIPHTHERIA				
	Cases	Cases per 100,000 Population	Deaths	Cases	Cases per 100,000 Population	Deaths	Deaths per 100,000 Population	Percent Fatality
Atlantic	154	107.92	0	2	1.40	2	1.40	100.00
Bergen	2582	592.78	1	20	4.62	2	0.46	10.00
Burlington	194	196.55	0	15	15.19	1	1.01	6.66
Camden	806	215.97	0	64	22.91	2	0.71	3.12
Cape May	158	460.17	0	1	2.96	0	.....	.....
Cumberland	61	82.88	1	14	19.02	0	.....	.....
Essex	8204	898.97	1	31	3.39	4	0.44	12.90
Gloucester	151	224.28	0	6	7.43	3	3.71	50.00
Hudson	799	111.34	1	275	38.32	14	1.95	5.09
Hunterdon	35	154.93	0	0	.....	0	.....	.....
Jersey	482	242.21	0	6	3.01	1	0.50	16.66
Middlesex	422	180.34	0	11	4.70	2	0.85	18.18
Monmouth	1049	688.45	0	8	4.53	0	.....	.....
Morris	576	470.20	0	4	3.28	0	.....	.....
Ocean	63	166.68	0	8	21.16	0	.....	.....
Passaic	1117	348.08	0	75	23.37	2	0.62	2.66
Salem	57	154.05	0	13	35.13	0	.....	.....
Somerset	118	162.53	0	0	.....	0	.....	.....
Sussex	138	474.22	0	3	10.31	0	.....	.....
Union	2087	580.34	2	11	3.13	0	.....	.....
Warren	25	48.82	0	7	13.67	0	.....	.....
State	19056	430.45	7	574	12.96	33	0.74	5.75

**REPORTED CASES AND DEATHS FROM DYSENTERY, TRACHOMA, OPHTHALMIA  
NEONATORUM AND PARATYPHOID FEVER BY COUNTIES FOR 1938**

COUNTIES	DYSENTERY		TRACHOMA		OPHTHALMIA NEONATORUM		PARATYPHOID FEVER	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Atlantic	0	0	0	0	0	0	1	0
Bergen	5	0	1	0	0	0	0	0
Burlington	0	0	0	0	0	0	0	0
Camden	0	1	0	0	2	0	4	0
Cape May	0	0	0	0	0	0	0	0
Cumberland	1	0	0	0	0	0	1	0
Essex	2	1	3	0	147	0	6	0
Gloucester	0	0	0	0	0	0	0	0
Hudson	5	2	0	0	1	0	2	1
Hunterdon	0	0	0	0	0	0	0	0
Mercer	1	0	0	0	7	0	0	0
Middlesex	2	4	0	0	0	0	0	0
Monmouth	2	1	0	0	0	0	0	0
Morris	0	0	0	0	0	0	0	0
Ocean	1	1	0	0	0	0	0	0
Passaic	0	0	1	0	0	0	2	1
Salem	0	0	0	0	0	0	0	0
Somerset	0	0	0	0	0	0	0	0
Sussex	0	0	0	0	0	0	2	0
Union	4	0	1	0	0	0	0	0
Warren	0	0	0	0	0	0	0	0
State	23	10	6	0	157	0	19	2

**REPORTED CASES AND DEATHS FROM INFLUENZA AND PNEUMONIA  
BY COUNTIES FOR 1938**

COUNTIES	INFLUENZA			PNEUMONIA			
	Cases	Cases per 100,000 Population	Deaths per 100,000 Population	Cases	Cases per 100,000 Population	Deaths per 100,000 Population	
Atlantic	2	1.40	3	30	21.02	84	58.86
Bergen	12	2.77	9	469	108.51	175	40.49
Burlington	0	0	6	58	58.78	49	49.64
Camden	17	6.06	21	394	141.06	149	53.34
Cape May	17	50.14	3	7	20.95	25	73.74
Cumberland	2	2.71	8	61	82.88	29	39.40
Essex	82	8.98	32	2302	252.24	444	48.93
Gloucester	0	0	7	48	59.48	95	80.54
Hudson	182	23.36	28	322	44.87	425	59.22
Hunterdon	0	0	0	24	67.60	33	92.95
Mercer	10	5.02	12	191	95.98	133	67.84
Middlesex	1	0.42	7	167	71.38	92	39.31
Monmouth	14	8.45	10	213	128.62	83	50.12
Morris	2	1.63	5	132	107.75	67	54.69
Ocean	0	0	6	31	82.01	42	111.11
Passaic	109	33.96	16	129	40.20	167	82.04
Salem	0	0	7	12	32.43	28	75.67
Somerset	3	4.13	3	126	173.55	41	56.47
Sussex	1	3.43	2	76	261.17	27	92.78
Union	24	6.83	12	277	78.91	200	56.98
Warren	0	0	3	9	17.58	42	82.03
State	478	10.79	200	5078	114.70	2402	54.25

**REPORTED CASES AND DEATHS FROM MALARIA AND EPIDEMIC CEREBRO-SPINAL  
MENINGITIS BY COUNTIES FOR 1938**

COUNTIES	MALARIA			EPIDEMIC CEREBRO-SPINAL MENINGITIS			
	Cases	Cases per 100,000 Population	Deaths	Cases	Cases per 100,000 Population	Deaths per 100,000 Population	Percent Fatality
Atlantic	0	0	0	1	0.70	0	0
Bergen	1	0.23	0	5	1.15	2	0.46
Burlington	1	1.01	0	1	1.01	0	0
Camden	0	0	0	7	2.50	0	0
Cape May	3	8.85	0	0	0	0	0
Cumberland	0	0	0	2	2.71	2	2.71
Essex	3	0.33	0	6	0.65	5	0.54
Gloucester	1	1.24	0	0	0	0	0
Hudson	2	0.28	1	6	0.83	1	0.14
Hunterdon	0	0	0	1	2.81	0	0
Mercer	0	0	0	0	0	0	0
Middlesex	1	0.42	0	4	1.71	3	1.28
Monmouth	0	0	0	3	1.81	0	0
Morris	0	0	0	0	0	0	0
Ocean	0	0	0	1	2.64	0	0
Passaic	2	0.62	0	4	1.24	3	0.93
Salem	1	2.70	0	0	0	0	0
Somerset	0	0	0	1	1.37	0	0
Sussex	0	0	0	3	10.31	1	3.43
Union	1	0.28	0	7	1.99	3	0.65
Warren	0	0	0	2	3.90	2	3.90
State	16	0.36	1	54	1.22	22	0.49

**REPORTED CASES AND DEATHS FROM MEASLES AND GERMAN MEASLES  
BY COUNTIES FOR 1938**

COUNTIES	MEASLES				GERMAN MEASLES		
	Cases	Cases per 100,000 Population	Deaths per 100,000 Population	Percent Fatality	Cases	Cases per 100,000 Population	Deaths
Atlantic	822	376.03	1	0.70	24	16.81	0
Bergen	6310	1575.06	5	0.07	96	22.21	0
Burlington	1383	1715.30	1	1.01	9	9.12	0
Camden	2400	859.29	3	1.07	45	16.11	0
Cape May	234	690.26	0	0	33	97.34	0
Cumberland	608	826.06	2	2.71	2	2.71	0
Essex	921	100.92	0	0	197	21.58	0
Gloucester	904	1120.20	1	1.24	2	2.48	0
Hudson	2507	349.36	8	1.11	25	3.48	0
Hunterdon	560	1577.46	0	0	2	5.63	0
Mercer	927	465.83	1	0.50	10	5.02	0
Middlesex	647	276.49	2	0.85	26	11.11	0
Monmouth	568	342.99	0	0	25	15.09	0
Morris	192	156.73	0	0	33	26.94	0
Ocean	131	346.56	0	0	3	7.93	0
Passaic	2900	903.71	0	0	34	10.59	0
Salem	293	791.89	1	2.70	1	2.70	0
Somerset	972	1383.84	4	5.51	9	12.39	1
Sussex	269	924.40	0	0	50	171.82	0
Union	2320	690.97	2	0.57	81	23.07	0
Warren	411	802.73	0	0	19	37.11	0
State	27089	611.90	31	0.70	726	16.40	1

**REPORTED CASES AND DEATHS FROM ACUTE ANTERIOR POLIOMYELITIS  
AND SCARLET FEVER BY COUNTIES FOR 1938**

COUNTIES	ACUTE ANTERIOR POLIOMYELITIS				SCARLET FEVER			
	Cases	Deaths per 100,000 Population	Deaths	Deaths per 100,000 Population	Cases	Deaths per 100,000 Population	Deaths	Deaths per 100,000 Population
Atlantic	0	.....	0	.....	94	65.87	1	0.70
Bergen	5	1.15	0	.....	402	93.01	0	.....
Burlington	2	2.02	0	.....	73	73.96	1	1.01
Camden	1	0.39	0	.....	379	135.89	0	.....
Cape May	0	.....	0	.....	27	79.84	0	.....
Cumberland	2	2.71	0	.....	86	116.54	0	.....
Essex	14	1.53	2	0.22	935	102.45	1	0.11
Gloucester	2	2.48	1	1.24	84	104.09	1	1.24
Hudson	1	0.14	1	0.14	429	59.78	1	0.14
Hunterdon	0	.....	0	.....	50	140.84	1	2.81
Mercer	0	.....	0	.....	293	147.23	2	1.00
Middlesex	0	.....	0	.....	92	39.31	1	0.42
Monmouth	1	0.80	1	0.90	114	68.84	0	.....
Morris	1	0.81	0	.....	185	151.02	0	.....
Ocean	0	.....	0	.....	22	38.20	0	.....
Passaic	6	1.87	3	0.93	206	64.81	1	0.81
Salem	2	5.40	0	.....	20	54.05	1	2.70
Somerset	0	.....	0	.....	60	82.64	0	.....
Sussex	0	.....	0	.....	48	164.95	1	3.43
Union	3	0.85	1	0.28	352	94.58	0	.....
Warren	0	.....	1	1.85	36	70.31	0	.....
State	40	0.90	10	0.22	3969	89.65	12	0.27

**REPORTED CASES AND DEATHS FROM TYPHOID FEVER AND WHOOPING COUGH  
BY COUNTIES FOR 1938**

COUNTIES	TYPHOID FEVER				WHOOPING COUGH			
	Cases	Deaths per 100,000 Population	Deaths	Deaths per 100,000 Population	Cases	Deaths per 100,000 Population	Deaths	Deaths per 100,000 Population
Atlantic	22	15.41	2	1.40	162	113.52	1	0.70
Bergen	13	3.00	2	0.46	1028	353.54	0	.....
Burlington	7	7.09	1	1.01	304	308.00	2	2.02
Camden	16	5.73	0	.....	331	118.31	3	1.07
Cape May	1	2.95	0	.....	19	56.04	0	.....
Cumberland	4	5.43	0	.....	68	92.30	2	2.71
Essex	15	1.64	5	0.54	4733	520.82	16	1.76
Gloucester	4	4.95	0	.....	82	101.61	2	2.48
Hudson	17	2.37	5	0.69	630	87.79	7	0.97
Hunterdon	1	2.81	0	.....	32	90.14	2	5.63
Mercer	8	4.02	1	0.50	262	131.96	2	1.00
Middlesex	8	3.42	1	0.42	91	38.89	1	0.42
Monmouth	7	4.22	0	.....	821	375.00	1	0.60
Morris	8	6.63	0	.....	449	366.53	1	0.81
Ocean	1	2.94	0	.....	10	26.45	0	.....
Passaic	5	1.56	1	0.31	964	300.40	2	0.62
Salem	3	8.11	0	.....	8	21.62	1	2.70
Somerset	0	.....	0	.....	65	89.53	4	5.51
Sussex	2	8.87	0	.....	99	340.20	1	3.43
Union	4	1.14	0	.....	1204	343.02	6	1.71
Warren	0	.....	0	.....	34	66.40	0	.....
State	146	3.29	18	0.40	11716	264.65	54	1.22

**REPORTED CASES AND DEATHS FROM SMALLPOX AND TUBERCULOSIS  
BY COUNTIES FOR 1938**

COUNTIES	SMALLPOX				TUBERCULOSIS				
	Cases	Deaths per 100,000 Population	Deaths	Deaths per 100,000 Population	Cases	Deaths per 100,000 Population	Percent Fatality		
Atlantic	0	.....	0	.....	108	75.68	78	54.86	72.22
Bergen	0	.....	0	.....	267	61.77	145	33.55	54.30
Burlington	0	.....	0	.....	70	70.92	89	39.51	55.71
Camden	0	.....	0	.....	218	78.05	115	41.17	62.75
Cape May	0	.....	0	.....	18	53.09	10	29.50	55.55
Cumberland	0	.....	0	.....	52	70.65	37	50.27	71.15
Essex	0	.....	0	.....	986	106.04	483	53.47	49.49
Gloucester	0	.....	0	.....	38	47.08	32	39.65	84.21
Hudson	0	.....	0	.....	675	94.06	368	51.28	54.52
Hunterdon	0	.....	0	.....	30	84.50	16	45.07	53.33
Mercer	0	.....	0	.....	216	108.54	83	41.71	38.42
Middlesex	0	.....	0	.....	223	95.30	81	34.61	36.32
Monmouth	0	.....	0	.....	249	144.92	75	47.10	32.50
Morris	0	.....	0	.....	190	155.10	84	27.75	17.89
Ocean	0	.....	0	.....	25	66.13	19	50.26	76.00
Passaic	0	.....	0	.....	377	117.48	133	41.44	33.28
Salem	0	.....	0	.....	30	81.05	17	45.04	66.66
Somerset	0	.....	0	.....	65	89.53	25	34.43	35.46
Sussex	0	.....	0	.....	16	54.98	11	37.80	68.75
Union	0	.....	0	.....	273	78.34	139	39.60	50.54
Warren	0	.....	0	.....	29	56.64	14	27.34	48.27
State	0	.....	0	.....	4148	93.69	1962	44.32	47.29

**REPORTED CASES AND DEATHS FROM MUMPS, LETHARGIC ENCEPHALITIS,  
UNDULANT FEVER, TETANUS AND TRICHINOSIS BY COUNTIES FOR 1938**

COUNTIES	MUMPS		LETHARGIC ENCEPHALITIS		UNDULANT FEVER		TETANUS		TRICHINOSIS	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Atlantic	29	0	0	1	0	0	0	1	0	0
Bergen	1070	1	3	5	2	0	2	0	0	0
Burlington	811	0	0	0	1	0	0	0	0	0
Camden	871	0	3	2	1	0	0	0	0	0
Cape May	76	0	0	0	0	0	0	0	0	0
Cumberland	98	0	1	3	6	0	0	2	0	0
Essex	2573	1	2	1	4	0	2	1	1	0
Gloucester	47	0	0	0	2	0	0	0	0	0
Hudson	109	0	5	4	2	0	2	4	1	0
Hunterdon	22	0	0	0	0	0	0	0	0	0
Mercer	440	0	1	1	5	0	2	0	0	0
Middlesex	214	0	0	4	2	0	0	0	0	0
Monmouth	1220	0	2	1	2	0	1	0	0	0
Morris	338	0	0	0	7	0	0	0	0	0
Ocean	29	0	1	1	2	0	0	0	0	0
Passaic	313	0	2	1	5	0	0	0	1	0
Salem	10	0	0	1	2	0	0	0	0	0
Somerset	123	0	0	0	0	0	0	0	0	0
Sussex	74	0	0	0	4	0	0	0	0	0
Union	324	0	3	2	4	0	0	0	0	0
Warren	16	0	0	0	1	0	0	1	0	0
State	8409	2	23	28	52	0	9	11	7	0

## REPORTED CASES AND DEATHS FROM MISCELLANEOUS DISEASES FOR THE YEAR 1938

DISEASE	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Anthrax .....	4	0	0	0	4	0
Malaria .....	10	0	6	1	16	1
Ophthalmia Neonatorum .....	100	0	57	0	157	0
Rabies .....	1	1	1	1	2	2
Rocky Mountain Spotted Fever .....	12	5	4	3	16	8
Streptococcal Sore Throat .....	145	16	147	23	295	39
Smallpox .....	0	0	0	0	0	0
Tularemia .....	8	0	0	0	8	0
Typhus Fever .....	1	0	1	0	2	0

## Report of the Bureau of Engineering

For the Year Ending June 30, 1939

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

This report deals with the following:

- No. 1—Number of Water and Sewage Projects Examined and Approved from July 1, 1938, to June 30, 1939.
- No. 2—Inspections Made and Certain Actions Taken During the Year.
- No. 3—An Act to Promote Interstate Co-operation and Protection of Water Resources in the Delaware River Basin.
- No. 4—The Delaware and Raritan Canal as a Source of Water Supply for New Jersey.
- No. 5—The Pollution of the Waters of the Overpeck Creek, a Tributary of the Hackensack River—The Experimental Filter of the Englewood Sewerage Company, Englewood, New Jersey.
- No. 6—The Sub-Committee on Sanitation of the Committee on Expansion of Public Health of the Governor's Committee on Health and Welfare.
- No. 7—Pollution of the Raritan River and its Tributaries, and, Policies Established.
- No. 8—Federal Aid for Increased Personnel.
- No. 9—The Examination of Bay and Ocean Waters from South Amboy to Seaside Park.
- No. 10—Pollution of the Waters of Inside Thorofare and the Investigation of the Atlantic City Sewerage Company's Experimental Down-Flow Sewage Rapid Sand Filter.
- No. 11—Bacteriological Standards for Waters, used for Potable and Domestic Purposes, and, to be used in Prosecution under Chapter 253, Laws of 1909 (Now Section 58:11 of the Revised Statutes).
- No. 12—Certification of Water for Use on Interstate Carriers.
- No. 13—Physical Connections.

- No. 14—Water Supplies not now Recognized as Public Potable Water Supplies Pursuant to the Resolution adopted on January 10, 1933.
- No. 15—Water Supplies Abandoned from July 1, 1938, to June 30, 1939.
- No. 16—Private Supplies.
- No. 17—Establishment of Factories on Watershed.
- No. 18—School Supplies.
- No. 19—Public Potable Water Supplies in New Jersey.
- No. 20—Tabulation of Public Potable Water Supplies in New Jersey.
- No. 21—Analyses of Waters from Public Potable Water Supplies in New Jersey.
- No. 22—Status of Sewage Disposal as of June, 1939.

## No. 1

NUMBER OF WATER AND SEWAGE PROJECTS EXAMINED AND APPROVED FROM  
JULY 1, 1938, TO JUNE 30, 1939

<i>Character of Projects</i>	<i>Number of Projects</i>	<i>Number of Applying Municipalities, Commissions or Companies</i>	<i>Number of Plans</i>	<i>Engineers' Estimates of Cost</i>
<i>Sewage:</i>				
Sewer extensions .....	61	46	181	\$1,791,896.17
Alterations and additions to sewage and industrial waste treatment plants .....	24	22	125	2,496,540.00
Sewage and industrial waste treatment works, systems and appurtenances, new .....	28	25	529	4,913,734.96
<i>Water:</i>				
New systems and supplies .....	7	7	20	159,100.00
Alterations, improvements and additions to waterworks .....	45	38	113	1,329,846.53
Totals .....	165	138	968	\$10,691,117.66
Total of engineers' estimates of costs for the fiscal year ending June 30, 1938 .....				\$3,042,782.51

## No. 2

## INSPECTIONS MADE AND CERTAIN ACTIONS TAKEN DURING THE YEAR

Special water inspections .....	270
Water complaints, conferences, hearings and meetings .....	71
Routine water inspections .....	33
Special sewage inspections .....	177
Sewage complaints, conferences, hearings and meetings .....	36
Water sample collections .....	32
Water inventory inspections .....	54
Railroad certification inspections .....	20
Sewage routine inspections .....	2
Gage installations, changes and repairs .....	9
Creamery, cannery, dairy and industrial waste inspections .....	35
Cross connection inspections .....	12
Hotel investigations .....	7
Sewage outfall inspections .....	9
By-pass sealing .....	2

Seventy man-working days were spent in the collection of samples from stream sampling stations; 74 man-working days were spent in attending court trials and serving court papers; 178 man-working days were spent in attending meetings, conferences, and hearings; 27½ man-working days were spent in collecting surf samples along the North Jersey coast; 43 man-working days were spent in stream survey work, and 293 man-working days were spent in special river investigations.

The following man-working days were spent in the investigation of sewage treatment plants:

Allentown .....	8 days
Atlantic City .....	41½
Bound Brook .....	9
Englewood (Sewerage Company) .....	42
Haddon Township .....	15
Lakelands .....	17
Middlesex .....	7
New Brunswick .....	48
North Wildwood .....	7
Plainfield .....	11
Piscataway Township .....	9
Raritan .....	21
Sayreville .....	6
Somerville .....	41
Woodbridge .....	6½



The following man-working days were spent in the special investigation of high rate sprinkling filter plant:

North Carolina ..... 27 days

Sanitary inspections were made upon the following streams during the year:

Barnegat Bay	Molly Ann Brook
Big Timber Creek	Musconetcong River
Canoe Brook	Navesink River
Crooked Brook	Overpeck Creek
Crosswicks Creek	Passaic River
Delaware River	Patex Pond
Hackensack River	Rahway River
Kings Creek	Raritan River
Lake Musconetcong	Shark River
Lewis Brook	Shabakunk Creek
Metedeconk River	Wolf Creek

Stream pollutions investigated .....	100
Notices issued to cease stream pollution .....	72
Cases of stream pollution found to be abated .....	29
Cases referred to the Attorney General for prosecution .....	14
Notices issued upon municipalities or companies to immediately construct sewerage and waterworks, section 40:1-16, subdivision "g" .....	24
Notices issued to treat and/or purify water before distribution .....	15
Notices issued to make changes, alterations and additions to sewage system .....	2
Resolutions disapproving plans .....	2
Notices issued to cease discharge of improperly treated industrial wastes .....	10
Resolutions removing supply from list of water supplies as they have been abandoned .....	3
Resolutions approving plans for intercepting sewers and sewage treatment plants .....	3
Resolutions removing supply from list of water supplies as less than eight are supplied .....	3
Notices to cease distribution of water from unapproved source of water supply .....	2
Miscellaneous resolutions .....	10

No. 3—"AN ACT TO PROMOTE INTERSTATE CO-OPERATION AND PROTECTION OF WATER RESOURCES IN THE DELAWARE RIVER BASIN."

The establishment and the first objective of The Interstate Commission on the Delaware River Basin (Incodel) were reported upon in the annual report for 1938. Information upon the activities of the Engineering Sub-Committee on Quality of interstate waters in the basin, and upon the actions taken by the Departments of Health of New York,

Pennsylvania, New Jersey and Delaware, in the matter of sanitary standards, was also contained in the aforesaid annual report.

The objective and activities resulted in the establishment of Chapter 146, Laws of 1939. The act, approved by the Governor on July 1, 1939, is as follows:

"CHAPTER 146

"AN ACT to promote interstate co-operation for the conservation and protection of water resources in the Delaware river basin.

"BE IT ENACTED by the Senate and General Assembly of the State of New Jersey:

PREAMBLE

"WHEREAS, The States of New York, New Jersey, Pennsylvania and Delaware have each created, and now maintain, a Commission (or Committee) on Interstate Co-operation for the purpose of establishing and maintaining governmental machinery to facilitate communication, negotiation, understanding and co-operation between said States, respectively, and other States of the Union, both regionally and nationally, with power to establish such committees, subcommittees, and advisory boards as are deemed advisable to conduct conferences and to formulate proposals concerning subjects of intergovernmental co-operation, to study the laws of the several States, hold public or private hearings, make findings and recommendations, and to submit drafts of legislation to promote uniform laws for the elimination of the confusion and conflict between the several States of the Union and the Federal Government in the matter of laws and administrative practices concerning conservation, prevention, abatement and control of pollution, water supply, public welfare, flood control, and other subjects; and

"WHEREAS, Said Commissions (or Committees) on Interstate Co-operation of said States have organized and established and are now maintaining as an instrument of governmental machinery a joint advisory board known as 'The Interstate Commission on the Delaware River Basin,' as a regional commission composed of standing subcommittees of said Commissions (or Committees) on Interstate Co-operation, respectively, for the purpose of entering upon a program to study the conservation, water supply, pollution and other potential uses and benefits of, and to develop integrated plans to conserve and safeguard, the waters of the Delaware river basin, in the following specified particulars:

"A. To serve as a fact-co-ordinating body and to develop the means and procedure by which the general plans and policies proposed for the development of the region may be carried out;

"B. To sponsor the carrying out of properly developed plans which result from surveys and research concerning population, land and water resources and uses, and other related subjects;

"C. To co-ordinate the activities of the Commission and Committees on Interstate Co-operation and their joint agency, the Council of State Governments, with the work of the appropriate State and Federal agencies for the prevention and abatement of pollution.

"D. To encourage interstate compacts and the enactment of uniform State laws for the abatement of water pollution, for flood control and for the proper general use and control of the waters of the Delaware river.

"E. To advance, perpetuate, and outline the work recommended by its conferences, and to develop and propose new objectives; and

"WHEREAS, It is the purpose of the Commissions (or Committees) on Interstate Co-operation of said four States, acting through said Interstate Commission on the Delaware river basin, to eliminate confusion and conflict among said States by the promotion and enactment of uniform laws in said States to preserve in a safe and sanitary condition the waters and watershed of said Delaware river basin and to provide uniform concurrent regulations for the control and the enforcement of the elimination of pollution in the waters thereof in said States, respectively; and

"WHEREAS, Said Interstate Commission on the Delaware river basin, in co-operation with the State health departments of said States, respectively, and the National Resources Committee and the Public Health Service of the Federal Government has made a study, for the purposes above recited of said Delaware river and its tributaries in said Delaware river basin, and has formulated proposals for the inter-governmental co-operation of said States in the correction and control of pollution of the waters thereof, which have been formally approved, ratified and accepted by the health departments of said States, the United States Health Service and the said National Resources Committee, respectively, in the following form:

"WHEREAS, A substantial part of the territory of the States of New York, New Jersey, Pennsylvania and Delaware is situated within the Delaware river drainage basin; and

"WHEREAS, The increase in the population of the various municipal areas situated within the Delaware river basin, and the growth of industrial activity within the basin, have resulted in increasingly serious pollution of the waters of the interstate Delaware river and its tributaries; and

"WHEREAS, Such pollution constitutes a grave menace to the health, welfare, and recreational facilities of the people living in the Delaware river basin, and occasions great economic loss; and

"WHEREAS, The control of future pollution and the correction of existing pollution of the waters of the interstate Delaware river and its tributaries is of prime importance to the people living in the Delaware river basin and can best be accomplished through the co-operation of the representatives of the people in the basin, in the States of New York, New Jersey, Pennsylvania, and Delaware;

"Now, therefore, the State of New York and the State of New Jersey and the Commonwealth of Pennsylvania and the State of Delaware agree and are bound as follows:

## ARTICLE I

"Each of the signatory States pledges to each of the other signatory States faithful co-operation in the control of future pollution and in the correction of existing pollution of the waters of the interstate Delaware river and its west branch from the New York-Pennsylvania boundary line down to the Atlantic ocean. In order to effect such objects, each of the States agrees to enact adequate legislation, if necessary, to enable each such State so to require the treatment of sewage, industrial waste or other artificial polluting matter as to place and maintain the waters of the aforesaid interstate Delaware river, and of the tributaries thereof just above the confluence with the Delaware river, in the clean and sanitary condition required by the provisions of this agreement. Furthermore, each such State agrees so to enforce the provisions of these requirements, and other supplementary applicable legislation, if any, as to bring about the attainment of the objectives of pollution control and correction in accordance with such reasonable and effective programs as may be determined from time to time by the States in the manner prescribed herein.

## ARTICLE II

"It is recognized by the signatory States that due to such variable factors as location, size, character, and flow, and of the many varied uses of the waters of the interstate Delaware river and its aforesaid west branch, such as water supply, recreation, navigation, industrial developments, maintenance of fish life, shellfish culture, agriculture, and other purposes, that no single standard of sewage and waste treatment and of quality of receiving waters is practical for all parts of the river. Therefore, in order to apply minimum requirements for the attainment of correction and control of pollution which will be appropriate to the varied factors including the existing and potential quality and uses of the waters, the interstate Delaware river is hereby divided into four zones, to wit:

"Zone I: Zone one is that part of the Delaware river and its west branch extending from the New York-Pennsylvania boundary line to the head of tidewater at Trenton, New Jersey, and Morrisville, Pennsylvania.

"The drainage basin contributory to this zone, excepting part of the Lehigh river basin, is relatively sparsely inhabited and contains few sewered communities and relatively few industrial establishments producing waste water. The streams draining this area being, in general, relatively clean and of high elevation, are well adapted as sources of public water supplies, after treatment or purification.

"The principal uses of the waters of the Delaware river in Zone one are expected to be for water supply after such treatment or purification as may be necessary, and for recreation, bathing, maintenance of fish and aquatic life, agriculture, and for other related purposes.

"Zone II: Zone two is that part of the Delaware river extending from the head of tidewater at Trenton, New Jersey, and Morrisville, Pennsylvania, to a line drawn perpendicular to the channel of the Delaware river from the mouth of Pennypack creek in Philadelphia, Pennsylvania, to the corresponding point on the New Jersey shore.

"The drainage basin contributory to this zone is somewhat more densely populated than that of Zone one, and it contains more sewered communities and industrial establishments.

"The principal uses of the waters of the Delaware river in Zone two are expected to be for water supply, after treatment or purification, and for recreation, navigation, maintenance of fish and aquatic life, agricultural, industrial and other purposes.

"Zone III: Zone three is that part of the Delaware river extending from the aforesaid line connecting the mouth of Pennypack creek in Philadelphia and the corresponding point in New Jersey to the Pennsylvania-Delaware boundary line.

"The drainage basin contributory to this zone contains populous metropolitan areas including Philadelphia, Pennsylvania, and Camden, New Jersey.

"The principal uses of the waters of the Delaware river in Zone three are expected to be for navigation, industrial water supply, and other purposes.

"The water in this zone, however, should be of such sanitary quality that it will not be unfit for use as sources of water supply, will not be harmful to fish life, and will not adversely affect the quality of the waters of the tidal tributaries.

"Zone IV: Zone four is that part of the Delaware river extending from the Pennsylvania-Delaware boundary line to the Atlantic ocean.

"The principal uses of the waters of the Delaware river in Zone four are expected to be for navigation, industrial water supply, commercial fishing, shellfish culture, recreation and other purposes.

"In order to attain conditions of cleanliness and sanitation of the waters of the Delaware river which will be consistent with the appropriate existing and future quality and uses of such waters, the following minimum requirements shall apply to the several zones herein provided. It is the purpose and intent of such requirements to apply to artificial (not natural) causes of pollution.

#### ARTICLE III

"In order to put and maintain the waters of the interstate Delaware river and its west branch as aforesaid, in a clean and sanitary condition, no sewage, industrial wastes or other polluting matter shall be discharged into, or be permitted to flow or fall into, or be placed in any respective zone of the interstate Delaware river as herein established, unless such sewage, industrial waste or other artificial polluting matter shall first have been so treated as to produce an effluent which will meet the following minimum requirements:

"Zone 1: (1) Such effluent shall be free of noticeable floating solids, color, oil, grease, or sleek, and practically free of suspended solids.

"(2) Such effluent shall be sufficiently free of turbidity that it will not cause noticeable turbidity in the water of the Delaware river.

"(3) Such effluent shall show a reduction of organic substances of at least eighty-five per centum (85%) as measured by the bio-chemical oxygen demand, and furthermore, such effluent in no case shall exceed a bio-chemical oxygen demand of fifty (50) parts per million, and furthermore, the discharge of such effluent, after dispersion in the water of the river, shall not cause a reduction of the dissolved oxygen content of such water of more than five per centum (5%). The aforesaid reduction in dissolved oxygen content shall be determined by the average results obtained from dissolved

oxygen tests made upon samples collected on not less than six (6) consecutive days from points in the river above and below the point or points of effluent discharge.

"(4) Such effluent shall be of such quality that the most probable number of organisms of the Coli Aerogenes group shall not exceed one (1) per milliliter in more than ten per centum (10%) of the samples of sewage effluent tested by the confirmed test; and provided, further, that no single sample shall contain more than one hundred (100) organisms of the Coli Aerogenes group in one (1) milliliter.

"(5) Such effluent shall be sufficiently free of acids, alkalis, and other toxic or deleterious substances, that it will not create a menace to the public health through the use of the waters of the Delaware river for public water supplies, for recreation, bathing, agriculture and other purposes; nor be inimical to fish, animal or aquatic life.

"(6) Such effluent shall be free of offensive odors and also be free of substances capable of producing offensive tastes and odors in public water supplies derived from the Delaware river at any place above or below the discharge of such effluent.

"Zone 2: (1) Such effluent shall be free of noticeable floating solids, color, oil or grease, and practically free of both suspended solids and sleek.

"(2) Such effluent shall be sufficiently free of turbidity that it will not cause noticeable turbidity in the water of the Delaware river.

"(3) Such effluent shall show a reduction of organic substance of at least eighty-five (85) per centum as measured by the bio-chemical oxygen demand, and furthermore, such effluent in no case shall exceed a bio-chemical oxygen demand of one hundred (100) parts per million, and furthermore, the discharge of such effluent, after dispersion in the water of the river, shall not cause a reduction of the dissolved oxygen content of such water of more than ten (10) per centum. The aforesaid reduction in dissolved oxygen content shall be determined by the average results obtained by dissolved oxygen tests made upon samples collected on not less than six (6) consecutive days from points in the river above and below the point or points of effluent discharge.

"(4) Such effluent shall be of such quality that the most probable number of organisms of the Coli Aerogenes group shall not exceed one (1) per milliliter in more than twenty-five (25) per centum of the samples of sewage effluent tested by the confirmed test; and provided, further, that no single sample shall contain more than one hundred (100) organisms of the Coli Aerogenes group in one (1) milliliter.

"(5) Such effluent shall be sufficiently free of acids, alkalis, and other toxic or deleterious substances, that it will not create a menace to the public health through the use of the water of the Delaware river for public water supplies, for recreation, industrial and other purposes; nor be inimical to fish, animal or aquatic life.

"(6) Such effluent shall be free of offensive odors and also be free of substances capable of producing offensive tastes or odors in public water supplies derived from the Delaware river at any place below the discharge of such effluent.

"Zone 3: (1) Such effluent shall be free of noticeable floating solids, oil or grease, and substantially free of both suspended solids and sleek.

"(2) Such effluent shall be sufficiently free of turbidity that it will not cause substantial turbidity in the water of the Delaware river after dispersion in the water of the river.

"(3) Such effluent shall show a reduction of at least fifty-five (55) per centum of the total suspended solids and a reduction of not less than thirty-five (35) per centum of the bio-chemical demand. (It is the intent of this requirement to restore the dissolved oxygen content of the river water in this zone to at least fifty (50) per centum saturation. To accomplish this it may be necessary in the case of certain wastes, to obtain reductions greater than those required under this item.)

"(4) Such effluent, if it be discharged within two miles of a public waterworks intake or within prejudicial influence thereof, shall at all times be effectively treated with a germicide.

"(5) Such effluent shall be sufficiently free of acids, alkalis, and other toxic or deleterious substances, that it will not create a menace to the public health through the use of the waters of the Delaware river for public water supplies, or render such waters unfit for industrial and other purposes; or cause the water of the Delaware river to be harmful to fish life.

"(6) Such effluent shall be practically free of substances capable of producing offensive tastes or odors in public water supplies derived from the Delaware river.

"Zone 4: (1) Such effluent shall be free of noticeable floating solids, oil, or grease, and substantially free of both suspended solids and sleet.

"(2) Such effluent shall be sufficiently free of turbidity that it will not cause substantial turbidity in the waters of the Delaware river after dispersion in the water of the river.

"(3) Such effluent shall show a reduction of at least fifty-five (55) per centum of the total suspended solids and shall be subject to such further treatment as may be needed to prevent a nuisance.

"(4) Such effluent, if it be discharged within prejudicial influence of a public waterworks intake, or of recreational areas, or of shellfish grounds, shall at all times be effectively treated with a germicide, except that in the case of recreational area influence, such treatment need not be provided during the period from October fifteenth to May fifteenth of each year.

"(5) Such effluent shall be sufficiently free of acids, alkalis, and other toxic or deleterious substances that it will not create a menace to the public health through the use of the waters of the Delaware river for public water supplies, or render such waters unfit for commercial fishing, shellfish culture, recreational, industrial, or other purposes.

"(6) Such effluent shall be practically free of substances capable of producing offensive tastes or odors in public water supplies derived from the Delaware river.

"It is further recognized by the signatory States that the quality of the waters of the intrastate tributaries of the Delaware river and its aforesaid west branch are of interstate concern at their points of confluence with the Delaware river and its west branch. Therefore, it is also agreed that sewage, industrial waste or other artificial polluting matter discharged into, or permitted to flow or to fall into, or be placed in any intrastate tributary of the aforesaid Delaware river, shall be treated to that degree, if any, necessary to maintain the waters of such intrastate tributary immediately above its confluence with the aforesaid Delaware river in a condition at least equal to the clean and sanitary condition of the waters of the Delaware river immediately above the confluence of such tributary.

"Analyses and tests regarding the minimum requirements herein prescribed, shall be determined in accordance with the provisions contained in the American Public Health

Association's latest edition on 'Standard Methods for the Examination of Water and Sewage.'

"The aforesaid requirements as to treatment of sewage, industrial wastes or other artificial polluting matter and as to the sanitary quality of receiving waters are minima. It is the intent and purpose of these requirements to accomplish reasonable and adequate control and correction of pollution. Due to the many variable factors involved, however, and to the impossibility of forecasting future developments with certainty, it may be necessary in the future to impose additional requirements, particularly in Zones two and three.

"The minima herein prescribed therefore shall be considered the first steps toward attaining the objectives sought, and if necessary may be required to be supplemented in the case that the general application of such minimum requirements does not adequately improve and maintain the sanitary quality of the waters of the Delaware river.

"1. That part of the area of the Delaware river basin lying within this State is hereby established and declared to be a component part of an interstate-region for intergovernmental co-operation by said States in the conservation, protection and development of the water resources thereof by means of integrated plans, and said Interstate Commission on the Delaware River Basin is hereby recognized as the duly established regional commission or agency, of this State for intergovernmental co-operation in effectuating the purposes described in paragraph (2) of the above preamble, with full and complete authority to exercise, for the accomplishment of said purposes, the governmental machinery, powers and duties conferred by this State upon said Commission (or Committee) on Interstate Co-operation.

"2. The reciprocal agreement set forth in paragraph (4) of the above preamble is hereby ratified and applied to the waters and watershed of said Delaware river basin within the territorial limits of this State, and its terms and provisions shall supersede the terms and provisions of any existing laws and regulations applicable to that area, to the extent, only, that the terms and provisions of such existing laws and regulations are inconsistent with the terms and provisions set forth in said reciprocal agreement.

"3. The Department of Health is hereby empowered and directed to apply and carry into effect the proposals, terms and provisions of said reciprocal agreement, in the several zones therein prescribed, respectively within the territorial limits of this State, and to enforce the same by the exercise of such administrative and legal authority, and the institution and prosecution of such actions, suits or other proceedings as may be necessary or appropriate, as are now or may hereafter be provided under the laws and practice of this State.

"4. The Department of Health is hereby authorized and directed to co-operate with said Interstate Commission on the Delaware river basin in the further study of the sanitary condition of the waters of Delaware river and its tributaries in said Delaware river basin and to approve, adopt and enforce within this State, such reasonable modifications, changes or alterations in the zones or standards of quality of water in said river and tributaries as may, from time to time, be recommended by said Interstate Commission on the Delaware river basin, and approved by the departments of health of the other three States constituent to said Delaware river basin.

"5. The terms and provisions of said reciprocal agreement shall become effective upon receipt by the Secretary of State of this State of a certificate from the Executive Secretary of The Interstate Commission on the Delaware River Basin that an act in substantially the same form as this act has been passed by the Legislature, and approved

by the Governor, of one of the other three States constituent to said Delaware river basin, together with a certified copy of said act of said State, and thereupon the Secretary of State shall advise the Department of Health of this State accordingly.

"6. Nothing in this act shall be construed to apply to the Delaware and Raritan canal or its feeders.

"7. This act shall take effect immediately.

"Approved July 1, 1939."

It is to be noted that nothing in the aforesaid act shall be construed to apply to the Delaware and Raritan Canal or its feeder.

Paragraph 5 of the act sets up the procedure which must be satisfied, in order to make the reciprocal agreement effective.

There follows a copy of a letter to the Secretary of State from the Executive Secretary of The Interstate Commission on the Delaware River Basin:

"July 18, 1939.

"Hon. Thomas A. Mathis,  
Secretary of State,  
State House,  
Trenton, New Jersey.

"DEAR MR. MATHIS:

"Chapter 146, P. L. 1939, New Jersey, is 'An act to promote interstate co-operation for the conservation and protection of water resources in the Delaware river basin.'

"Section 5 of this act reads:

"The terms and provisions of said reciprocal agreement shall become effective upon receipt by the Secretary of State of this State of a Certificate from the Executive Secretary of the Interstate Commission on the Delaware River Basin, that an act in substantially the same form as this act has been passed by the Legislature, and approved by the Governor, of one of the other three States constituent to said Delaware River Basin, together with a certified copy of said act of said State, and thereupon the Secretary of State shall advise the Department of Health of this State accordingly.'

"This letter is to certify that Chapter 600, Laws of New York, 1939, a properly executed copy of which is enclosed is an act in substantially the same form as that which was passed by the Legislature of New Jersey and approved by the Governor.

"Will you, therefore, kindly advise the Department of Health of New Jersey accordingly.

Respectfully yours,

DAVID W. ROBINSON,  
Executive Secretary."

And there follows a copy of a letter from the Secretary of State to the Department of Health of the State of New Jersey:

"TRENTON, July 26, 1939.

"Dr. J. Lynn Mahaffey,  
Director of Health,  
State House,  
Trenton, N. J.

"DEAR SIR:

"This is to advise you that in a communication under date of July 25, 1939, signed by David W. Robinson, Executive Secretary of the Interstate Commission on the Delaware River Basin, has forwarded to this Department a certified copy of Chapter 600, Laws of the State of New York, 1939, for the purpose of filing in accordance with Chapter 146, P. L. of New Jersey, 1939, approved July 1, 1939, as the same is set out in the fifth section of the said act.

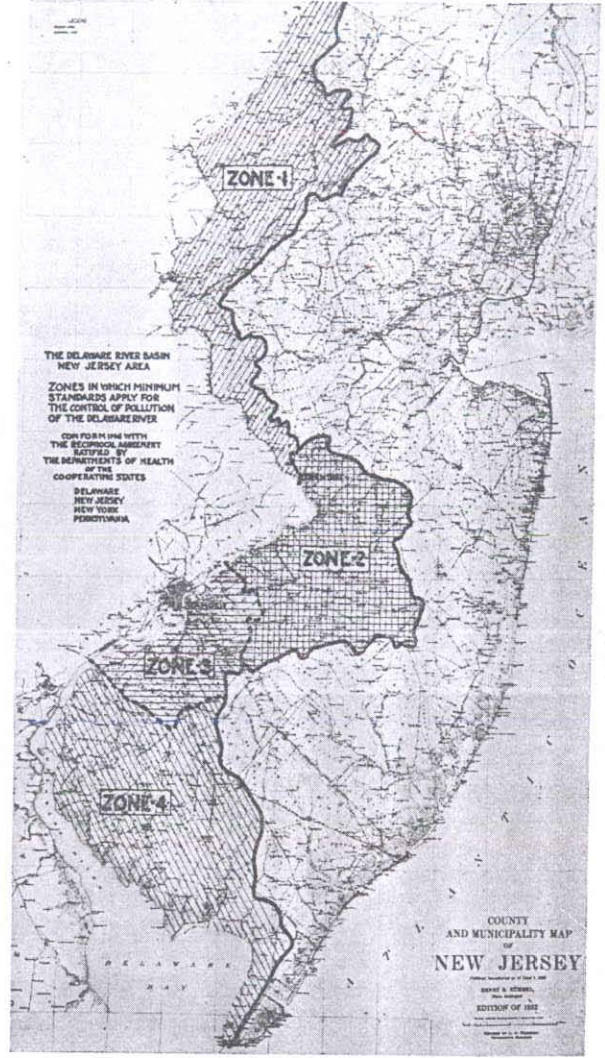
Very truly yours,

THOMAS A. MATHIS,  
Secretary of State."

It is concluded, inasmuch as the provisions of paragraph 5 of Chapter 146, Laws of 1939, have been met, that the terms and provisions of the agreement, outlined in the said law, are now effective in the States of New York and New Jersey.

The following map shows the limits of the zones (Article II) in the New Jersey section of the Delaware River watershed. And the following table contains, in a summary form, the requirements (Article III) as to the treatment of sewage, industrial wastes or other artificial polluting matter discharged into the interstate waters, as well as into the tributaries of the interstate Delaware River (Article I).

(Reference: Annual Report, 1938.)



MINIMUM REQUIREMENTS AS TO THE TREATMENT OF SEWAGE, INDUSTRIAL WASTES OR OTHER ARTIFICIAL POLLUTING MATTER DISCHARGED INTO THE INTERSTATE DELAWARE RIVER BASIN ESTABLISHED BY CHAPTER 146, P. L. 1939

	ZONE 1	ZONE 2	ZONE 3	ZONE 4
Solids (floating)	Free of Noticable	Same as 1	Same as 1	Same as 1
Color	Free of Noticable	Same as 1	.....	Same as 1
Oil	Free of Noticable	Same as 1	Same as 1	Same as 1
Grease	Free of Noticable	Same as 1	Same as 1	Same as 1
Sleek	Free of Noticable	Practically free of	Substantially free of	Same as 3
Solids, suspended	Practically free of	Same as 1	Substantially free of, with reduction of at least 55%	Reduction of 55% of total suspended matter. Further treatment if required, to prevent a nuisance
Turbidity	Shall not cause noticable turbidity in receiving water	Same as 1	Not cause substantial turbidity in receiving water after dispersion	Same as 3
Biochemical Oxygen Demand	Shall show a reduction of at least 85% with effluent not exceeding 50 p.p.m.	Reduction of at least 85% with effluent not exceeding 100 p.p.m.	Reduction of not less than 50% to be effected. Greater B.O.D. reductions may be required.	.....
Dissolved Oxygen	After dispersion, the effluent shall not reduce content of receiving water more than 5%, as determined from average results of samples collected on not less than 6 days above and below discharge	Effluent, after dispersion shall have content of dissolved oxygen not less than 10%, based on 6 day sampling as in Zone 1	The intent of the B.O.D. requirement is to restore the dissolved oxygen content of the river to at least 50% saturation	.....
Organisms—Coli-Aerogenes Group	Shall not exceed 1 per milliliter (c.c.) in more than 10% of effluent samples tested; and, no single sample shall contain more than 100 per milliliter (c.c.)	Shall not exceed 1 per milliliter (c.c.) in more than 25% of samples tested; no single sample shall contain more than 100 per milliliter (c.c.)	Effluent to be treated with a germicide if discharged within 2 miles (or within pre-judicial influence) of a public waterworks intake	Effluent to be treated with a germicide if discharged within pre-judicial influence of a public waterworks intake, or recreational area or shellfish grounds. In case of recreational area, however, treatment not required from October 15 to May 15 of each year

p.p.m. = parts per million  
c.c. = cubic centimeter

MINIMUM REQUIREMENTS AS TO THE TREATMENT OF SEWAGE, INDUSTRIAL WASTES OR OTHER ARTIFICIAL POLLUTING MATTER  
DISCHARGED INTO THE INTERSTATE DELAWARE RIVER BASIN ESTABLISHED BY CHAPTER 146, P. L. 1939.—(Continued)

	ZONE 1	ZONE 2	ZONE 3	ZONE 4
Acids, Alkalis, Toxics, or Infectious Substances	Sufficiently free of, so as not to create a menace to the public health through use of the receiving waters for public water supplies, recreation, industrial and other purposes, or injurious to fish, animal or aquatic life	Sufficiently free of, so as not to create a menace to the public health through use of the receiving waters for public water supplies, recreation, industrial and other purposes, or injurious to fish, animal or aquatic life	Sufficiently free of, so that no person who may be exposed through use of Delaware River for public water supplies, or other such waters unfit for industrial purposes, or cause the waters of Delaware River to be harmful to fish life	Sufficiently free of, so will not create a menace to the public health through use of Delaware River for public water supplies, or other such waters unfit for commercial fishing, shellfish or other purposes, injurious to fish life
Tastes and Odors	Free of offensive odors and free of substances capable of producing offensive tastes or odors in public water supplies derived from	Same as Zone 1	Same as Zone 1	Same as Zone 1

#### No. 4—THE DELAWARE AND RARITAN CANAL AS A SOURCE OF WATER SUPPLY FOR NEW JERSEY.

Honorable A. Harry Moore, Governor of New Jersey, designated, under date of June 7, 1938, Messrs. Charles Capen, H. T. Critchlow and H. P. Croft, to prepare a report which may be submitted to the Legislature with regard to the availability of the properties of the Delaware and Raritan Canal as a feeder for a new water supply project for the Metropolitan District of New Jersey; and, the Governor suggested certain items to be covered in the requested report.

The State Department of Health authorized H. P. Croft to participate in the preparation of such a report. And in accordance with the aforesaid instructions, a report was submitted to the Governor, under date of October 4, 1938.

The "Summary of Report" is as follows:

"The Delaware and Raritan Canal Water Project, investigated and reported upon herein, considers the utilization of the canal properties as a feeder for a new water supply project for the Metropolitan District of New Jersey. The properties studied to that end extend from the feeder intake on the Delaware River at Raven Rock, New Jersey, to a point near Bound Brook, a distance of 49 miles.

"This plan provides that a maximum of 230 million gallons daily (m.g.d.) and an average of 180 m.g.d. will be diverted and transported by gravity with provisions for taking 30 m.g.d. at Trenton for use in that area. The remainder of 200 m.g.d. maximum and 150 m.g.d. average will be delivered by gravity to a pumping station at Bound Brook. Provision, however, is made for taking by gravity up to 10 m.g.d. of water from the canal at Bound Brook for use of the New Brunswick area.

"An electrically operated pumping station of 200 m.g.d. capacity will lift the water through a pressure aqueduct 4.16 miles long into a storage reservoir at Dock Watch Hollow, north of Bound Brook. This basin has a total area of about 1,500 acres, and its rim varies in elevation, the lower places being 460 feet above sea level. For the first stages of the development it is proposed to store water up to elevation 380 feet, which would provide a usable capacity of 600 million gallons for a 20-foot drawdown. It is suggested, however, that the entire basin of 1,500 acres be acquired in order to better control the entire natural drainage into the reservoir as well as to provide for possible future enlargement. The dam site for this reservoir is on rock, and the proposed concrete masonry dam can be constructed so as to be readily increased in height when necessary.

"Immediately below the dam the water will be filtered and then carried in a transmission main, of 200 m.g.d. capacity, 20.75 miles to a point at the southern terminus of the 60-inch diameter supply main of the Wanaque system at the Newark-Elizabeth boundary.

"The investigation of the present needs for water in the Northern Metropolitan District discloses a surplus of supply over demand in the Paterson and Newark areas. However, taking into consideration the entire district, the falling off in demand during the depression and the certain future growth in population and industrial water demands, it would seem wise to proceed without further delay with the development of a major water supply project for the Metropolitan District. New York City, the Boston Metropolitan District, and Los Angeles, as well as other lesser metropolitan areas of the country, are now proceeding with undertakings to increase in large measure their available supply of water.

"A careful examination of the quality of the waters in the Delaware River in the vicinity of Raven Rock leads to the conclusion that these waters compare favorably with others being used for potable purposes. Consideration of the steps now being taken by the States of New York, Pennsylvania, and New Jersey to effect further abatement of pollution leads to the belief that an improvement in quality may be expected under interstate co-operation. The purification of waters of such quality by modern filtration methods, as herein proposed for this project, insures the potability of the final product.

"The properties of the Delaware and Raritan Canal provide water diversion rights in the Delaware River which, it is believed, can be transferred by legislative enactment to water supply uses. The feeder and canal afford a right-of-way across the State for an aqueduct to transport this water by gravity. The preferred Plan 1, of the three plans studied, contemplates a closed aqueduct for the entire distance. This would protect the diverted water from local contamination, from cross-drainage, storm water, and polluting material now entering the canal; provide greater reliability of service; and assure lower maintenance and operating cost. The conversion of a 100-year-old canal, with its many structures that carry it across streams and other obstructions, so as to render it suitable for use as a right-of-way for a public water supply aqueduct, involves many difficult problems most readily solved by the use of a closed aqueduct.

"A study of the comparison of the Delaware and Raritan Canal Water Project with the Chimney Rock project, proposed by the North Jersey District Water Supply Commission, and the Bunnvale project, proposed by the State Water Policy Commission, suggests certain advantages and disadvantages.

"Advantages: (1) Existing State ownership of water rights; (2) Existing State ownership of right-of-way from Raven Rock to Bound Brook; (3) Relatively large flow of Delaware River reduces amount of land necessary for storage purposes; (4) Relatively short time necessary to construct the projects; (5) Adapted to the present program of Federal financing of self-liquidating public works.

"Disadvantages: (1) Diversion of interstate waters may lead to possible delays through disagreement or litigation; (2) The further delay in, if not complete abandonment of, the development of intrastate waters from tributaries of Raritan and Delaware Rivers in New Jersey, by gravity, as proposed in the Chimney Rock and Bunnvale projects; (3) The perpetual operation of a pumping station with attending costs and possible interruption in service; (4) The greater distance to transport water from source to the Northern Metropolitan District.

"The comparison of estimated costs and capacities of the three projects, with filtration and delivery to the center of the district, is as follows:

	<i>Delaware and Raritan Canal</i>	<i>Chimney Rock</i>	<i>Bunnvale</i>
Capacity—M.G.D. ....	150	145	152
Capital cost .....	\$33,743,000*	\$51,994,000	\$47,945,000
Construction cost per M.G.D. develop- ment .....	225,000	358,000	315,000
Pumping cost capitalized at 5% .....	10,400,000	.....	.....
Total comparative cost .....	\$44,143,000	\$51,994,000	\$47,945,000
Comparative cost per M.G.D. developed	294,000	358,000	315,000

\*Plan 1, see text of report.

"While these comparisons are not all strictly on the same basis, they are about the most representative figures available for such different types of projects."

In the "Special Message of Governor A. Harry Moore on the use of the Delaware and Raritan Canal as a water supply to the 163d Legislature of New Jersey. Also transmitting certain documents and reports," transmitted under date of February 13, 1939, the Governor states, in part, as follows:

"I appointed a committee . . . to investigate the feasibility of this plan and report upon its probable cost; also to report upon the quality of the water obtained from the Delaware River and the physical condition of the feeder and canal and their adaptability as a part of a water supply project. I set up this committee, composed of employees of the several State departments, because these men were already employed by the State and the taxpayers were thus saved any additional expense. The files of the various State departments are filled with a tremendous amount of data relating to the State's water supplies, all of which has been available to the committee such as the one I appointed."

Under date of March 15, 1939, the Governor requested a supplemental report on the Delaware and Raritan Canal Water Supply Project; such a report was forwarded under date of April 27, 1939. This report related, in brief, to possible objections to the proposal which had been pointed out by the Interstate Commission on the Delaware River Basin (Incodel).

Into the preparation of the reports entered: field inspections, the collection and examination of stream samples, investigations upon the treatment of sludge from water treatment plants, map and graph work, tabulations, and the examination of data in the files of the department.



The interested personnel in the Bureaus of Chemistry and Engineering—clerical and technical—took a great interest in the preparation of the report; it was due to their efforts that the department's assignments were completed in the allotted time.

The time and labor expended by the personnel of the said Bureaus to accomplish this task, resolved into terms of man-days, are as follows:

Bureau of Chemistry .....	80 man-days
Bureau of Engineering—technical .....	270 man-days
Bureau of Engineering—clerical .....	30 man-days

NO. 5—THE POLLUTION OF THE WATERS OF THE OVERPECK CREEK,  
A TRIBUTARY OF THE HACKENSACK RIVER—THE EXPERIMENTAL  
FILTER OF THE ENGLEWOOD SEWERAGE COMPANY,  
ENGLEWOOD, NEW JERSEY.

During the summer of 1936 extensive investigations were made of the plants discharging sewage into Overpeck Creek, among which was the Englewood plant. As a result of these investigations, the Department of Health of the State of New Jersey at a meeting held on January 12, 1937, adopted a resolution calling for the service of a notice upon the Englewood Sewerage Company requiring the said company to expand or intensify its method of sewage treatment prior to May 15, 1937, "so that the expanded or intensified method of sewage treatment will be one of sedimentation, oxidation (or nitrification) and chlorination . . . ." This notice also required that the additions and alterations to the plant comply with this Department's rules and regulations.

At a meeting of the Department of Health of the State of New Jersey held on March 9, 1937, it was on motion voted that the enforcement of the above notice, together with others against Bergen County municipalities, be held in abeyance until the meeting of September 1937, at which time those petitioning for an extension of time were to advise the Department as to the progress made in the establishment of joint sewage projects.

The consulting engineer for the Englewood Sewerage Company requested, under date of April 21, 1937, the reaction of this Department to "the type of sprinkling filter that is operated continuously by returning a portion of the effluent to the filter." Included in this letter was the statement "In submitting our plans for this new plant we wish them to

be sufficiently complete to relieve the Englewood Sewerage Company of any further responsibility for any pollution in the Overpeck Creek."

This Department's answer to the above letter, dated April 27, 1937, stated that the knowledge of the Bureau of Engineering relative to this type of filter was limited but that the engineering personnel believed that this method of treatment has considerable merit; further, "The Bureau of Engineering is loathe to recommend the aero-filter at Englewood, however, for the following reasons:

"1. It is understood that the Englewood Sewerage Company, by the construction of a new sewage treatment plant, intends to be relieved of any further responsibility for any pollution in the Overpeck Creek. It is implied, therefore, that the unconditional approval of the State Department of Health would be expected. While the Bureau of Engineering would favor an Aero-Filter installation at some plant in New Jersey, it would be hesitant to recommend an unconditional approval of the same regardless of even optimum conditions and prospects for its success.

"2. The records of this department indicate that the sewage at Englewood is very strong, the biochemical oxygen demand averaging about 410 parts per million and running over 600 parts per million during the periods of heaviest volume of flow. It will, therefore, be necessary that a plant which can be assured of providing a high degree of treatment be installed if a heavy oxygen demand is not to be imposed upon the receiving waters of Overpeck Creek which provide a low dilution factor at Englewood."

Under date of June 2, 1937, this Department was advised that

"At a meeting of the Board of Directors of the Englewood Sewerage Company last night it was voted to establish a sewage testing unit at Englewood for the purpose of determining the efficiency and application of a sprinkling filter operated by the recirculation of the sewage on the filter with the co-operation of the State Department of Health." . . . "Should this method of sewage treatment prove to be successful and economical under New Jersey conditions the company will prepare detailed plans and specifications for the establishment of a permanent plant of this nature to treat the sewage of the city of Englewood."

Paragraph 5, Chapter 186, P. L. 1930 (now Section 58:12-2 of the Revised Statutes) is, in part, as follows:

"It shall be the duty of the Department of Health of the State of New Jersey to investigate the various methods of sewage disposal; in order that it may be able to make proper recommendations in regard thereto. . . ."

The Department, at a meeting held on June 8, 1937, on motion, voted that the Bureau of Engineering be authorized to participate in the investigation being conducted by the Englewood Sewerage Company of a new method of sewage treatment. And on September 14, 1937, the

Department gave a hearing to representatives of interested municipalities in the Overpeck Creek Basin, and the motion was adopted that action upon the enforcement of notices issued, be held in abeyance pending the completion of the Englewood experimental plant.

The experimental plant was completed and placed in operation on October 24, 1937. Engineers of the Department participated in the investigation of the plant during the period from July, 1938 to July, 1939. The report was placed before the members of the Department at a meeting held on May 9, 1939, and the following recommendations were adopted:

"1. That the Department approve the report of the investigation of the Experimental High Capacity Trickling Filter of the Englewood Sewerage Company, 1937-1939.

"2. That copies of the report be forwarded to the Englewood Sewerage Company, the municipalities of Cliffside Park, Englewood, Leonia, Palisades Park, Ridgefield, Ridgefield Park, Teaneck Township and other interested parties.

"3. That the Englewood Sewerage Company be requested to advise this Department as to when final plans and specifications for additions and alterations to its sewage treatment plant, as required by the provisions of a notice issued by this Department on January 12, 1937, will be submitted for appropriate action or as to what action the said company contemplates relative to the compliance with the said notice.

"4. That the attention of the municipalities of Leonia, Palisades Park, Ridgefield, Ridgefield Park and Teaneck Township be called to the action taken by the Department of Health of the State of New Jersey at a meeting held on September 14, 1937; to wit, the enforcement of the notices issued by the Department upon only those municipalities which are considering the construction of a trunk sewer in the Overpeck Creek Basin, be held in abeyance pending the completion of investigations to be made at the Englewood Experimental Sewage Treatment Plant."

(Reference Annual Reports, 1932, 1933, 1934.)

No. 6—THE SUB-COMMITTEE ON SANITATION OF THE COMMITTEE ON  
EXPANSION OF PUBLIC HEALTH OF THE GOVERNOR'S  
COMMITTEE ON HEALTH AND WELFARE.

The Sub-committee on Sanitation organized on February 16, 1939; the members were as follows: J. E. Bacon, C. K. Blanchard, H. P. Croft and W. W. Scofield of the State Department of Health; H. T. Critchlow of the State Water Policy Commission; R. C. Erickson of the Board of Health of the City of Long Branch, and C. A. Hallgring and P. J. Monaghan of the Board of Health of the City of Newark. S. A. Kowalchik, senior sanitary engineer in the State Department of Health, served as secretary.

The committee considered and reported upon the following items: public water supplies, public sewerage systems, industrial wastes, physical cross connections between approved and unapproved water supplies and between approved water supplies and drains, the supervision of public water supplies and sewerage systems, swimming pools, garbage and rubbish collection and disposal, recreation places other than camps, rural school sanitation, camp sanitation, eating places and food handling establishments, shellfish, and private water supplies and sewage disposal.

The committee submitted its report, under date of March 28, 1939. There follows the text of the Introduction and the Summary of the aforesaid report.

"INTRODUCTION

"Recognizing the fact that sanitation plays an important part in the promotion of health, happiness and prosperity of any community, and that the greater the population density, and the more vigorous the industrial and recreational activities, the greater the need for sanitation, it is deemed advisable to consider first the more important aspects of New Jersey's development and its present position as compared with other States.

"The State of New Jersey occupies a unique location between and partially within two of the nation's greatest commercial, industrial and financial centers. This geographical location, coupled with the fact that approximately 90 percent of its boundary is contiguous to large bodies of water, explains in a large measure its economic and social pattern. It also explains to a considerable degree the State's industrial activity and its extensive developments as suburban and recreational areas.

"Upon its small area, which is only 0.252 percent of the total area of the United States, New Jersey sustains 3.34 percent of the entire population of the country. From 1900 to 1930 it rose in population rank from sixteenth to ninth place while from 1890 to 1930 its population increased 180 percent. The average population of the State is now 570 per square mile. Only one state in the union, Rhode Island, exceeds this density. Such improved facilities as railroads, highways, power and other utilities, and the increased leisure time of the populace have largely contributed to an abnormal population increase in the seacoast area, and the lakeland regions in the northern section of the State.

"The largest rate of population growth, naturally, has been in the metropolitan areas, amounting in instances to phenomenal proportions. Practically all communities of the State, however, have maintained a fair rate of population increase.

"Trends and present circumstances indicate that New Jersey is likely to continue, for many years, to grow at a rate greater than most other sections of the country. Only a sharp reversal of present trends will turn the flow in other directions. Evidences are that New Jersey will be one of the last states to feel the current decline in rate of population increase for the country as a whole. This is of large significance to planning for future development and future service.

"Bearing the above facts in mind, the committee has endeavored to determine what sanitation facilities and services are available to the people of the State, the shortcomings of these services and facilities; and what additional physical equipment, facilities, services and policies are required to assure that the health of its people will be safeguarded. The results of its determinations are presented in this report."

#### "SUMMARY

"New Jersey's dense population, industrial activity, extensive shore line on ocean, bays and rivers and recreational development all demand that sanitation be given adequate attention in any program of health and welfare.

"So much has already been attained in the protection of public potable water supplies, shellfish and milk, and certain other foods, and in the treatment of sewage, that New Jersey is a leading state in these matters. Sanitation of swimming pools, rural schools and camps, urban and rural eating places and of food manufacturing establishments presents problems which have been studied and analyzed but cannot be met with present public health funds, personnel and legislation. The disposal of industrial wastes, garbage and refuse; adequate sanitary safeguards for places of recreation and for private water supplies and sewage disposal systems each represents a situation known to be unsatisfactory, but data are lacking for quantitative analysis.

"Local public health administration as now constituted in New Jersey does not function well in most rural areas nor in all urban municipalities. For this reason and since supervision of many of the matters above-mentioned is vested in the State Department of Health, more State supervision is thought necessary to accomplish most of the improvements recommended by the committee. A study has also been made of the activities of New Jersey State Water Policy Commission in relation to public water supplies, and it has been determined that an expansion of this agency is needed to meet its problems.

"Generally, the recommendations of the committee include:

"(1) Increased supervision of public water supplies and sewerage systems, and industrial wastes disposal to secure optimum efficiency and protection.

"(2) Construction of facilities to meet present and future needs for safe water supplies and adequate treatment of sewage and industrial wastes.

"(3) Establishment of hydrological and climatological stations to permit of a more adequate study of the ultimate yield of the State surface waterways and ground water for water supply purposes.

"(4) Adequate legislation and supervision to safeguard users of public swimming pools and bathing places.

"(5) Adequate legislation and increased supervision to safeguard patrons of public eating places and camps.

"(6) Increased supervision of the harvesting of shellfish.

"(7) Increased jurisdiction and supervision of certain food manufacturing establishments, and of rural school water supplies.

"(8) Study of municipal garbage disposal to determine the nature and extent, and to evolve a solution of the sanitary problems relating thereto.

"(9) Study of the operation of recreational places to determine the nature and size, and to evolve a solution of sanitary problems relating thereto.

"(10) More advisory aid to rural residents so as to secure safer water supplies derived from private wells, springs, etc., and more adequate disposal of sewage by privately owned septic tank systems and cesspools.

#### "Costs

"The estimated costs of the recommended expansions are as follows:

"(a) Increased supervision and assistance .....	\$147,360 per yr.
"(b) Equipment for use in supervision and assistance .....	25,250
"(c) Construction of water supplies, sewerage systems .....	62,825,000
"(d) Construction of industrial wastes treatment plants .....	Unknown

"In arriving at the above estimates of cost of supervision and assistance, it was assumed that the work would be performed largely by the Department of Health of the State of New Jersey. However, should it be found possible to expand local health units and lodge in these units the responsibility of the supervision of local problems in sanitation, the committee's estimates of the per annum cost of supervision and assistance to the State may be reduced materially.

#### "RESULTS EXPECTED

"1. Increase the safeness and improve the attractiveness of the potable water supplies; and provide an adequate supply of potable water for the immediate future needs.

"2. Reduce, substantially, the pollution of the waters of the State; and recover, for recreational uses and shellfish propagation, a large portion of the State waterways, thereby lessening the hazards to health, comfort and property.

"3. Eliminate the dangers incident to unsafe waters and excreta disposal at rural schools.

"4. Improve the cleanliness and safety of foods, including milk, and improve food handling, thereby reducing the danger of illness and food-borne diseases.

"5. Reduce insanitary conditions in general, and thereby provide more adequate safeguards to the health of the public at large."

The Committee on Expanded Public Health adopted the following resolutions:

#### "WATER SUPPLY SYSTEMS AND SEWAGE DISPOSAL SYSTEMS AT RURAL SCHOOLS

"WHEREAS, A public school is an integral part of any community; and,

"WHEREAS, A large proportion of the population of any community spends considerable time at public schools; and,

"WHEREAS, The public school is a training place for youth from the standpoints of scholarship, good citizenship, and community responsibility; and,

"WHEREAS, The Committee-at-Large of the Committee on Expanded Public Health of the New Jersey Health and Welfare Conference has learned, through the report prepared by its Sub-committee on Sanitation, that water supplies and the means of disposing of human wastes from many public schools are unsafe and in violation of existing health regulations; therefore,

"Be It Resolved, By the Committee-at-Large of the Committee on Expanded Public Health of the New Jersey Health and Welfare Conference, at its meeting held on the

17th day of May, A. D. one thousand nine hundred and thirty-nine, that providing and maintaining safe sanitary facilities, including the supply of water and the collection and disposal of human wastes at public schools, should be the special interest of the community and the State; and,

*"Be It Further Resolved,* By the said Committee-at-Large that the water supply and method and means of disposing of human wastes, including the installation of plumbing at public schools, should at least meet the standards and requirements fixed in State Health Laws and regulations, and in the regulations of the Local Board of Health of the community; and,

*"Be It Further Resolved,* By the said Committee-at-Large, that it hereby recommends that either by permission of State and local Departments of Public Instruction or by legislation that authorized agents of the interested local boards of health or the State Department of Health determine, through inspections, whether compliance is made with the said laws, requirements and regulations, and in case violations are found the said health agencies shall notify the State or local boards of education, which shall promptly take steps to correct such violations."

#### "RECREATIONAL AREAS

"WHEREAS, The Committee-at-Large of the Committee on Expanded Public Health of the New Jersey Health and Welfare Conference has learned, through the report prepared by its Sub-committee on Sanitation, that in New Jersey, because of its position in relation to the metropolitan areas of New York and Philadelphia, its possession of readily accessible and widely popular ocean beaches, and its numerous attractive small lakes and ponds in the northern upland region, recreational activities in the State are increasing almost in phenomenal proportions; and,

"WHEREAS, The said Committee-at-Large has found and determined that no State health agency exercises organized supervision over sanitation practices in said areas; and,

"WHEREAS, The said Committee-at-Large is of the opinion that there is a real need for increased supervision of sanitation practices in recreational areas in order to safeguard the health of the patrons and all residents of watershed in that area and that said supervision should be exercised by public health authorities; therefore,

*"Be It Resolved,* By the Committee-at-Large of the Committee on Expanded Public Health of the New Jersey Health and Welfare Conference, at its meeting held on the 17th day of May, A. D. one thousand nine hundred and thirty-nine, that legislation be promulgated, for enactment, which will vest in the Department of Health of the State of New Jersey and the interested local boards of health the necessary powers to enforce the installation of proper and adequate sanitation facilities at recreational areas and afford the patrons of recreational areas proper and adequate sanitation services."

#### "PRIVATE WATER SUPPLY SYSTEMS AND SEWERAGE SYSTEMS

"WHEREAS, The Committee-at-Large of the Committee on Expanded Public Health of the New Jersey Health and Welfare Conference has learned, through the report prepared by its Sub-committee on Sanitation, that, in many instances, tracts of land are developed for habitation in localities where public water supply systems and/or sewerage systems are not available, nor likely to be available for many years in the future; and,

"WHEREAS, In certain of these localities the ground formations are not suitable for the proper and adequate disposal of sewage and other polluting material by private systems, nor are they suitable for the development of safe private water supplies; and,

"WHEREAS, In certain other areas little consideration is given by the developers of the installation of suitable and adequate systems for the disposal of sewage and other polluting material, or to the development of safe water supply systems; and,

"WHEREAS, The proper and adequate method of the disposal of sewage and other polluting material should be determined, and the practicability of obtaining a safe water supply, public or private, should be assured prior, rather than subsequent, to the development of any tract of land for habitation; therefore,

*"Be It Resolved,* By the Committee-at-Large of the Committee on Expanded Public Health of the New Jersey Health and Welfare Conference, at its meeting held on the 17th day of May, A. D. one thousand nine hundred and thirty-nine, that legislation be promulgated, for enactment, requiring that before any map of a real estate sub-division shall be approved by a governing body, in accordance with Section 46:23-2c of the Revised Statutes, such map shall be accompanied by a statement from the local board of health, exercising jurisdiction over such areas, that a public potable water supply and a public sewerage system are available, or that, in its opinion, a safe water supply is assured and the safe disposal of sewage and excrement on lots proposed in such sub-division is practicable.

#### "PLUMBING INSTALLATION

"And to determine through what local agency, i. e. Health Department, Building Department, et cetera, the enforcement of regulations on the installation of plumbing systems, shall be carried out, and

*"Be It Further Resolved,* That it be urged a thorough and scientific study be made by some State or national agency, institution or department to determine authoritatively the minimum installation and design of house plumbing systems, which will operate efficiently and be conducive to the health and comfort of the occupants of homes or buildings in which such systems are installed."

The following is an excerpt from the report of the Chairman of The Committee on Expansion of Public Health to the Executive Committee of The Governor's New Jersey Conference on Health and Welfare:

"Sanitation: This splendid and outstanding report, as it stands, should be published in its entirety as soon as possible, as it presents the present situation with recommendations as to all of the sanitary problems existing in New Jersey, together with the solution of these problems and the estimated costs thereof. This study will serve as a textbook, for years to come for all who wish to know the sanitary problems of this State and what is needed to correct them."

The time and labor expended by the personnel of the Bureau to accomplish this task, resolved into terms of man-days, are as follows:

Technical staff .....	50 man-days
Clerical staff .....	45 man-days

No. 7—POLLUTION OF THE RARITAN RIVER AND ITS TRIBUTARIES, AND  
POLICIES ESTABLISHED

The sanitary survey and the "clean-up" of the Raritan River and its tributaries have continued during the past year. The fine spirit of co-operation shown by most of the interested industries, in the effort to abate the discharge of harmful polluting matter into the waters of the river, will go far toward restoring these waters to their rightful position in the existence of the people in the lower Raritan Valley. Already plans are under consideration for the use of the improved waters as a source of public potable water supply; a large water front parkway and recreation center is under construction and the construction of others is contemplated. Fish are returning to the Raritan River; large catches are reported up to Crab Island—about five miles below the City of New Brunswick.

There are 192 industries located in the lower Raritan Valley; that is, below the confluence of the north and south branches of the Raritan River. Of these industries, 36 had discharged or were found to be discharging material directly into the river, and information upon their waste disposal, as of June 30, 1939, is contained in the following table:

Classification	Number Plants in Classification	Total Wastes in M.G.D.	Total Oxygen Requirements in Pounds/Day	Population Equivalents	Total Free Acid— Pounds/Day
No longer discharging to Raritan River	7	1,730	4,407	25,916	12,050
Treatment installed—results satisfactory	3	15,350	21,190	124,460	18,061
Treatment plants under construction ...	5	12,931	27,566	127,500	5,600
Experimenting with treatment processes— progress satisfactory .....	6	4,616	12,239	71,935	103,042
Not considered polluting .....	4	0,910	11	66	.....
Waiting upon construction of new mu- nicipal sewer lines .....	4	0,084	69	410	.....
Progress unsatisfactory .....	4	2,513	9,653	56,600	24,396
Out of business .....	2	0,722	1,597	9,380	.....
Moving off watershed .....	1	0,022	58	340	.....

Before the start of the industrial clean-up, the daily discharge from the 36 industries averaged 38,158,000 gallons of wastes which had oxygen absorbing properties of 76,790 pounds—an amount equivalent to the oxygen absorbing properties in the wastes from a population of 416,600; in addition, 163,149 pounds of acid were discharged daily. With the operation of the industrial wastes treatment plants, including plants now under construction and proposed, the oxygen absorbing properties in the discharged wastes should be reduced 88.8 per cent and the acid reduced 85 per cent.

During the fiscal year ten new sewage treatment plants were placed in operation and these receive, on an average, 10,770,000 gallons of sewage per day from a population of over 93,500. The operation of these plants reduce the biochemical oxygen demand of the discharged wastes from 21,589 pounds to 8,942 pounds—a reduction of about 59 per cent.

Most of the work in the Raritan River Valley has been done by a special technical force which has expended the following man-working days:

Investigation of the operation of new sewage treatment plants .....	208
Investigation of industrial wastes .....	94
Investigation of receiving waters .....	91
Office, including preparation for field work and court cases .....	350

The investigation of the pollution of the waters of the Raritan River and its tributaries was instituted on July 1, 1931. At that time Russell E. Watson, Esq., was appointed, with no remuneration, as special deputy attorney-general in charge of the legal work relating to pollution. It is due to the efforts of Mr. Watson and the sincere encouragement of the director and board members that the progress has been made in this complicated and difficult problem.

The members of the Department of Health of the State of New Jersey, at a meeting held on November 15, 1938, adopted a policy, which relates to the discharge of sewage and other polluting matter, the source of which was created subsequent to such date. The policy is as follows:

"WHEREAS, The Department of Health of the State of New Jersey has caused to be made extensive inspections and investigations of the sanitary qualities of the waters of the Raritan River and has required the installation of works for the treatment of domestic sewage, industrial wastes and other polluting matter discharged therein; and,

"WHEREAS, The municipalities located along and near the Raritan River and corporations operating manufacturing plants along and near the Raritan River have expended and are expending large sums of money for the construction and operation of plants for the treatment of domestic sewage or industrial wastes or other polluting matter in compliance with notices to cease polluting the Raritan River issued by the Department of Health of the State of New Jersey; and,

"WHEREAS, The Raritan River is the natural place of discharge of sewage and other polluting matter from premises and municipalities located in the watershed of the Raritan River and the control of such pollution from new sources in said watershed is necessary in order that the beneficial results of the treatment plants and works heretofore constructed, now being constructed and hereafter to be constructed in compliance with notices issued by the Department of Health of the State of New Jersey as aforesaid shall not be impaired; and,

"WHEREAS, Section 58:12-3 of the Revised Statutes reads in part as follows:

*'Pollution of waters by sewage prohibited.* Except under such conditions as shall be approved by the Department, no person, corporation or municipality shall build any sewer, drain or sewerage system from which it is designed that any sewage or other harmful and deleterious matter, solid or liquid, shall flow into any of the waters of this State, or build, cause to be built or operate any plant for the treatment of sewage or other polluting substance from which the effluent is to flow into any of such waters, . . . Before the building of any plant for the treatment of sewage or other polluting substance as aforesaid, any new plans therefor shall be submitted to the Department';

and,

"WHEREAS, In order that the waters of the Raritan River shall not be polluted in such manner as to cause or threaten injury to the inhabitants of the said watershed either in their health, comfort or property, it is necessary that the sewage and other polluting material discharged in the said river from new sources be subjected to a minimum method of treatment of sedimentation, oxidation (or nitrification) and chlorination, so that a well clarified and highly oxidized effluent, low in bacterial content, will be discharged into the said river; therefore,

*"Be It Resolved,* By the Department of Health of the State of New Jersey, at a meeting held on the fifteenth day of November, A. D. one thousand nine hundred and thirty-eight, that under the power and authority granted to the said Department of Health by the provisions of Chapter 10, Title 58 of the Revised Statutes, said chapter being entitled 'Pollution of Waters,' Chapter 11, Title 58 of the Revised Statutes, said chapter being entitled 'Water and Sewerage Plants and Systems in General,' Chapter 12, Title 58 of the Revised Statutes, as amended by Chapter 224 of the Laws of 1938, said chapter being entitled 'Sewerage Districts and Sewerage District Boards,' and particularly by said section R. S. 58:12-3 above quoted, that all sewage and other polluting matter, the source of which was not created, established, caused or maintained prior to the fifteenth day of November, A. D. one thousand nine hundred and thirty-eight, or which was not discharged into the Raritan River prior thereto, shall, before discharge into the waters of the Raritan River, be subjected, as a minimum, to a method of treatment equivalent to that obtained by sedimentation, oxidation (or nitrification) and chlorination, so that a well clarified and highly oxidized effluent, low in bacterial content, will be discharged from the said new sources of pollution; and,

*"Be It Further Resolved,* That this policy, hereby established, shall apply to the discharge of sewage, industrial and/or manufacturing wastes and other polluting matter and shall apply to any person, firm or corporation, municipal or otherwise; and,

*"Be It Further Resolved,* That this policy shall become effective immediately."

To aid in the correction and control of the pollution of the waters of the Raritan River and its tributaries, the Department at a meeting held on June 13, 1939, adopted the following preamble and resolution:

"WHEREAS, The control of future pollution and the abatement of existing pollution in the waters of the Raritan River and its tributaries from the mouth of the said river to the confluence of the Raritan and Millstone Rivers, are of prime importance to the people living in and adjacent to the said section of the river, and, are necessary in order to place and maintain the waters of the said river in a condition satisfactory for safe and economical use as public and industrial water supplies after reasonable treatment, suitable for recreational usage, fit for supporting fish and other aquatic life, safe for shellfish propagation and adaptable to such other uses as may be legitimate, and, further, render and maintain said waters free from unsightly or malodorous nuisances due to floating solids, scum, oil or grease, sleet or sludge deposits and free from all such pollution that may cause or threaten injury to any of the inhabitants of this State either in their health, comfort or property; and,

"WHEREAS, The Department of Health of the State of New Jersey acting since 1931 under special and regular appropriations, has made, and is making, through its representatives, investigations of the sanitary conditions of the aforesaid waters of the Raritan River and its tributaries, and, based upon the findings of investigations made, has issued recommendations and orders upon certain municipalities and industrial establishments to cease the discharge of raw or inadequately treated domestic sewage, industrial wastes or other polluting matter into the said waters, and to dispose of such domestic sewage, industrial wastes or other polluting matter in a manner satisfactory to the said Department of Health; and,

"WHEREAS, Most of the aforesaid municipalities and industrial establishments have complied, or are complying, with the aforesaid recommendations and orders issued by the said department, and the said State Department of Health is of the opinion that the sewage treatment works and the industrial waste treatment works constructed, and in the course of construction, represent the expenditure of over six million dollars (\$6,000,000) by the interested municipalities and industries and the Federal government, and the maintenance and operation of the said works by the interested municipalities and industries involve an additional expenditure of large sums of money; and,

"WHEREAS, The Department of Health of the State of New Jersey is of the opinion that the aforesaid sewage treatment works and the industrial waste treatment works are designed to treat raw sewage and other polluting matter now or formerly discharged from municipally owned and operated sewer systems to an amount of over thirty-three million (33,000,000) gallons of sewage per day—the amount of over twenty-one million six hundred forty thousand (21,640,000) gallons is now being contributed by a population of over two hundred fifty thousand (250,000) persons, and, are designed to treat raw sewage, industrial wastes and other polluting

matter now or formerly discharged from industrial plants to an amount of over thirty-eight million (38,000,000) gallons per day, said thirty-eight million gallons of waste having an oxygen absorbing power equal to the normal sanitary wastes of a contributing population of over three hundred forty thousand (340,000) persons; and,

"WHEREAS, Section 58:12-2 of the Revised Statutes of New Jersey is as follows:

*'58:12-2. Powers and duties of Department of Health relative to sewage disposal and pollution of waters; orders for improvements; appeal.* The State Department of Health, hereinafter in this chapter designated as the "Department," shall investigate the various methods of sewage disposal in order that it may be able to make proper recommendations in regard thereto, shall require alterations, additions or improvements to sewage treatment works, shall investigate all complaints of pollution of the waters of this State which shall be brought to its notice, and may inspect any of the waters of this State.

If the Department finds that any of said waters are being polluted in such manner as to cause or threaten injury to any of the inhabitants of this State, either in their health, comfort or property, or that any sewage treatment works are inadequate in capacity or unit design to properly care for, treat and dispose of sewage before an effluent from such works is discharged into any of said waters, it shall notify in writing any person, corporation or municipality found to be polluting said waters or owning, operating or controlling, separately or jointly, any such inadequate sewage treatment works, that prior to a time to be fixed by the Department, which time shall not be later than five years from the date of the notice, the person, corporation or municipality polluting said waters must cease such polluting and make such disposition of its sewage and other polluting matter as shall be approved by the Department, and such person, corporation or municipality owning, operating or controlling inadequate sewage treatment works as aforesaid must alter, add to or improve such works in order that the sewage being received therein shall be cared for, treated and disposed of, and the effluent discharged into said waters in a manner approved by the Department.

'Any person, corporation or municipality aggrieved by the finding of the Department may appeal therefrom to the court of chancery at any time within three months after being notified thereof, and said court may hear and determine such appeal in a summary manner according to the course and practice of the court in other cases, and thereupon may affirm the finding of the Department or reverse or modify the finding in whole or in part as the court shall deem just and reasonable.'; and,

"WHEREAS, Section 58:12-3 of the Revised Statutes of New Jersey is as follows:

*'58:12-3. Pollution of waters by sewage prohibited.* Except under such conditions as shall be approved by the Department, no person, corporation or municipality shall build any sewer, drain, or sewerage system from which it is designed that any sewage or other harmful and deleterious matter, solid or liquid, shall flow into any of the waters of this State, or build, cause to be built or operate any plant for the treatment of sewage or other polluting substance from which the effluent is to flow into any of such waters, or, after the date specified in the notice provided for by section 58:12-2 of this title, permit any sewage or other polluting matter to flow into such waters from any sewer, drain or sewerage system under

its control. Before the building of any plant for the treatment of sewage or other polluting substance as aforesaid, any new plans therefor shall be submitted to the Department.';

and,

"WHEREAS, The Interstate Sanitation Commission, established under the provisions of Subtitle 7, Title 32 of the Revised Statutes of New Jersey, has the authority to group the waters of the Interstate Sanitation District into two classes, to wit: Class 'A' and Class 'B'; and, that the Class 'A' is the group 'in which the designated water areas are expected to be used primarily for recreational purposes, shellfish culture or the development of fish life'; and,

"WHEREAS, Article VII, Section 32:18-8 of the Revised Statutes of New Jersey, is, in part, as follows:

'1. It is agreed between the signatory states that no sewage or other polluting matters shall be discharged or permitted to flow into, or be placed in, or permitted to fall or move into the tidal waters of the district, except under the following conditions and restrictions:

'(1) All sewage discharged or permitted to flow into Class "A" waters of the district shall first have been so treated as—

'a. to remove all floating solids and at least sixty per cent (60%) of the suspended solids; and

'b. to effect a reduction of organisms of the B. Coli group (intestinal bacilli) so that the probable number of such organisms shall not exceed one per cubic centimeter in more than fifty per cent (50%) of the samples of sewage effluent tested by the partially confirmed test; *provided, however*, that in the case of discharge into waters used primarily for bathing this bacterial standard need not be required except during the bathing season; and

'c. to effect a reduction in the oxygen demand of the sewage effluent sufficient to maintain an average dissolved oxygen content in the tidal waters of the district and in the general vicinity of the point of discharge of the sewage into those waters, at a depth of about five feet below the surface of not less than fifty per cent (50%) saturation during any week of the year. . . .';

and,

"WHEREAS, Article VIII, Section 38:18-9 of the Revised Statutes of New Jersey is, in part, as follows:

'1. Each of the signatory states agrees, that in so far as waters within its jurisdiction may flow into any portion of the district, all sewage discharged or permitted to flow into any stream tributary to the tidal waters of the district shall be treated to that extent, if any, which may be necessary to maintain such tributary immediately above its confluence with the tidal waters of the district in a sanitary condition at least equal to the classification requirements determined by the commission for the tidal waters of the district into which it discharges. The waters of the Hudson River, immediately above the mouth of the Sparkill Creek on the westerly side and the New York-New Jersey boundary extended on the easterly side of the river, shall be maintained in a sanitary condition at ebb tide at least equal to the sanitary condition prevailing in the waters of the river immediately below said boundary at flood tide.';

and,

"WHEREAS, The Department of Health of the State of New Jersey is in receipt of a preamble and resolution, adopted by the Interstate Sanitation Commission, at a hearing held by said commission on December 8, 1937, which classifies the waters of the Raritan Bay together with the Raritan River up to the Victory Bridge, on said river, between the municipalities of Perth Amboy and South Amboy as Class 'A' waters, said preamble and resolution reading as follows, to wit:

'WHEREAS, Upon due notice, public hearings upon the predominate use of the waters of the Interstate Sanitation District were conducted at Perth Amboy, N. J., on the twenty-eighth day of April, nineteen hundred and thirty-seven; at Keansburg, N. J., on the twenty-first day of July, nineteen hundred and thirty-seven; and at Brooklyn, N. Y., on the eighteenth day of August, nineteen hundred and thirty-seven, as provided by the terms of the Compact entered into between the States of New York and New Jersey, and

'WHEREAS, A study was made by this Commission through its staff and employees, and

'WHEREAS, The Commissioners have given proper study to the question, now after due deliberation,

'*Be It Resolved*, By the Interstate Sanitation Commission at a meeting held on the eighth day of December, nineteen hundred and thirty-seven, that the waters of the Interstate Sanitation District including Raritan Bay together with the Raritan River up to the Victory Bridge on said river between Perth Amboy and South Amboy; together with the Chesapeake Creek up to the New York and Long Branch Railroad bridge on said creek at Morgan; together with the Matawan Creek up to the New York and Long Branch Railroad bridge on said creek at Matawan; Sandy Hook Bay; together with the Shrewsbury River up to the passenger railroad bridge between Navesink Light and Highland Beach on said river; and the tidal waters of greater New York City south of the narrows and of Arthur Kill south of Outerbridge Crossing, together with all the estuaries and tidal waters of the Interstate Sanitation District adjacent thereto—shall be designated:

CLASS "A" WATERS

in conformity with the terms and conditions of the aforesaid Compact.

'Adopted at the regular meeting of the Interstate Sanitation Commission December 8, 1937.

S. G. HESS (Signed),

['SEAL]

SETH G. HESS,

*Chief Engineer-Executive Secretary;*

and,

"WHEREAS, The Department of Health of the State of New Jersey at a meeting held on November 15, 1938, adopted a preamble and resolution reading as follows:

'*Be It Resolved*, By the Department of Health of the State of New Jersey, at a meeting held on the fifteenth day of November, A. D. one thousand nine hundred and thirty-eight, that under the power and authority granted to the said Department of Health by the provisions of Chapter 10, Title 58 of the Revised

Statutes, said chapter being entitled "Pollution of Waters," Chapter 11, Title 58 of the Revised Statutes, said chapter being entitled "Water and Sewerage Plants and Systems in General," Chapter 12, Title 58 of the Revised Statutes, as amended by Chapter 224 of the Laws of 1938, said chapter being entitled "Sewerage Districts and Sewerage District Boards," and particularly by the said section R. S. 58:12-3 above-quoted, that all sewage and other polluting matter, the source of which was not created, established, caused or maintained prior to the fifteenth day of November, A. D. one thousand nine hundred and thirty-eight, or which was not discharged into the Raritan River prior thereto, shall, before discharge into the waters of the Raritan River, be subjected, as a minimum, to a method of treatment equivalent to that obtained by sedimentation, oxidation (or nitrification) and chlorination, so that a well clarified and highly oxidized effluent, low in bacterial content, will be discharged from the said new sources of pollution; and, '*Be It Further Resolved*, That this policy, hereby established, shall apply to the discharge of sewage, industrial and/or manufacturing wastes and other polluting matter and shall apply to any person, firm or corporation, municipal or otherwise; and,

'*Be It Further Resolved*, That this policy shall become effective immediately.'; and,

"WHEREAS, The Department of Health of the State of New Jersey has been requested to establish standards of purity in the matter of existing pollution of the waters of the Raritan River and its tributaries; and,

"WHEREAS, A preamble and resolution was adopted, on February 15, 1938, by the Mayors Association of Middlesex County, which preamble and resolution is, in part, as follows, to wit:

'WHEREAS, The municipalities bordering on the Raritan River were directed by decrees made by the Court of Chancery of New Jersey in suits instituted by the New Jersey State Department of Health to cease polluting the Raritan River by emptying untreated domestic sewage therein, and

'WHEREAS, The said municipalities have complied or are complying with the said decrees at an aggregate cost of approximately \$4,000,000.00, and

'WHEREAS, The Raritan River is grossly polluted by the discharge therein of untreated industrial wastes; and

'WHEREAS, The said municipalities bordering on the Raritan River were given to understand that the New Jersey State Department of Health intended to proceed against industrial polluters of the Raritan River as the final step in its program for the purification of the river as soon as the domestic sewage problem had been solved; and,

'WHEREAS, The Raritan River will continue to be a grossly polluted stream unless industrial wastes now being discharged therein are treated and in such case the moneys spent by the municipalities will be largely wastes; now therefore,

'*Be It Resolved*, By the Mayors Association of Middlesex County, New Jersey, that the New Jersey State Department of Health be commended for its efforts to enforce the law respecting the pollution of the Raritan River and be



urged to complete its program for the purification thereof by the control of industrial pollution as soon as possible.

*'Be It Further Resolved,* That this association extend to the New Jersey State Department of Health its support and co-operation in its efforts to control industrial pollution';  
and,

"WHEREAS, The Department of Health of the State of New Jersey has found and determined that in order that domestic sewage, industrial wastes or other polluting matter, now discharged into the waters of the Raritan River and its tributaries from the mouth of the said river to the confluence of the Raritan and Millstone Rivers, shall not injure or threaten injury to the health, comfort or property, or recreational facilities of the people living in, and adjacent to, said section of the Raritan River Basin, and cause great economic loss, such domestic sewage, industrial wastes or other polluting material shall be subjected to a method of treatment, as a minimum, which will produce an effluent which, at least, will meet the following requirements.

"1. The effluent shall contain no free acidity; that is, all titratable acidity shall be neutralized.

"2. The effluent shall be free of noticeable floating solids, scum, oil, grease or sleek.

"3. The effluent shall be sufficiently free of color or turbidity, or both, so that after dispersion in the receiving waters, or not more than one thousand (1,000) feet above or below the point of effluent discharge, it will not substantially discolor, alter the natural color or add to the turbidity of the receiving waters.

"4. The effluent shall be free of caustic alkalinity or other toxic or deleterious substances.

"5. The effluent shall be free of offensive odors.

"6. The effluent shall be of such a quality that the most probable number of organisms of the Coli-Aerogenes Group shall not exceed one (1) per cubic centimeter in more than twenty-five per centum (25%) of the samples of effluent tested by the partially confirmed test; and provided, further, that no single sample shall contain more than ten (10) organisms of the Coli-Aerogenes Group in one (1) cubic centimeter.

"7. The effluent after dispersion in the receiving waters, or not more than one thousand (1,000) feet above or below the point of effluent discharge, shall not reduce the dissolved oxygen content in such receiving waters below fifty per centum (50%) saturation. The aforesaid dissolved oxygen content shall be determined by the average of the results of the analysis of at least six (6) samples collected at approximately equal intervals during any eight hour (8 hr.) period of any day; now,

*'Be It Resolved,* By the Department of Health of the State of New Jersey, at a meeting held on the thirteenth day of June, A. D. one thousand nine hundred and thirty-nine, that under the power and authority granted to the said Department of Health by the provisions of certain sections of Title 58 of the Revised Statutes, domestic sewage, industrial wastes or other polluting matter now discharged into, or now permitted to flow or fall into, or now placed in the waters of the Raritan River and its tributaries from the mouth of the said river to the confluence of the Raritan and Millstone Rivers shall be subjected to a method of treatment, as a minimum, which will produce an effluent which will, at least, meet the following requirements:

"1. The effluent shall contain no free acidity; that is, all titratable acidity shall be neutralized.

"2. The effluent shall be free of noticeable floating solids, scum, oil, grease or sleek.

"3. The effluent shall be sufficiently free of color or turbidity, or both, so that after dispersion in the receiving waters, or not more than one thousand (1,000) feet above or below the point of effluent discharge, it will not substantially discolor, alter the natural color or add to the turbidity of the receiving waters.

"4. The effluent shall be free of caustic alkalinity or other toxic or deleterious substances.

"5. The effluent shall be free of offensive odors.

"6. The effluent shall be of such quality that the most probable number of organisms of the Coli-Aerogenes Group shall not exceed one (1) per cubic centimeter in more than twenty-five per centum (25%) of the samples of effluent tested by the partially confirmed test; and provided, further, that no single sample shall contain more than ten (10) organisms of the Coli-Aerogenes Group in one (1) cubic centimeter.

"7. The effluent after dispersion in the receiving waters, or not more than one thousand (1,000) feet above or below the point of effluent discharge, shall not reduce the dissolved oxygen content in such receiving waters below fifty per centum (50%) saturation. The aforesaid dissolved oxygen content shall be determined by the average of the results of the analysis of at least six (6) samples collected at approximately equal intervals during any eight hour (8 hr.) period of any day; and,

*'Be It Further Resolved,* That this policy, hereby established, shall apply to the discharge of sewage or other polluting matter; and,

*'Be It Further Resolved,* That this policy shall become effective immediately; and,

*'Be It Further Resolved,* That this policy shall not repeal the policy established by the Department of Health of the State of New Jersey at a meeting held on November 15, 1938; said policy relating to stream pollution, the source of which was not created, established, caused or maintained prior to November 15, 1938; and,

*'Be It Further Resolved,* By the Department of Health of the State of New Jersey that a copy of this resolution be made a part of the records of the Department of Health of the State of New Jersey, to be used in all prosecutions made under the provisions of certain sections of Title 58 of the Revised Statutes, for the control or abatement of existing pollutions in the waters of the Raritan River and its tributaries from the mouth of the said river to the confluence of the Raritan and Millstone Rivers."

(Reference: Annual reports for 1931, 1932, 1933, 1934, 1937, 1938.)

#### NO. 8—FEDERAL AID FOR INCREASED PERSONNEL

During this fiscal year the Bureau was again able, through the aid granted by the Federal Government to retain on its staff, in addition to its normal personnel, one (1) sanitary engineer-chemist, and three (3) assistant sanitary engineers. This additional personnel continued inspections of the various water supplies, sewage treatment plants, and performed other allied work, viz., stream sampling, drafting, compiling of statistical data, preparation of court exhibits, etc. In general the scope of the field and office work was expanded commensurately with the expansion of the personnel.

More particularly, the Bureau was able to further its investigations and studies of the industrial pollution of the Raritan River, and to co-operate with the many industries in developing feasible and effective methods of treatment of their respective wastes. All these efforts together with the policing and inspections of the existing sewage and industrial treatment works produced fruitful progress towards the completion of its "pollution-abatement program" in the Raritan Valley, which was initiated by the Department several years past.

Also, the Bureau was aided greatly in the examination of the plans and specifications for sewerage and water projects submitted to the Department for approval, a pronounced influx of which continued as a result of the additional Federal grants and loans made available to New Jersey municipalities for the construction of such public works.

In addition, the Bureau intensified its activities in the investigation and study of the pollution of the Delaware River, which was done in co-operation with the Interstate Commission on the Delaware River Basin, a commission created by the mutual actions of the States of New York, Pennsylvania and New Jersey—Delaware co-operating.

The Bureau was also able to cope successfully with the administration of the water superintendents licensing act (Chapter 206, P. L. 1939), a new duty imposed upon the Bureau by an act of legislation; to participate in the preparation of the "Report on the Utilizations of the Delaware and Raritan Canal for a Metropolitan Water Supply in the State of New Jersey," and the "Report of the Sub-Committee on Sanitation of the Expanded Committee on Public Health of the State of New Jersey," which work was done pursuant to the instructions of the Governor of New Jersey; and to co-operate with the Atlantic City Sewerage Company and the Englewood Sewerage Company in the performance of tests in certain proposed experimental methods of sewage treatment.

#### No. 9—THE EXAMINATION OF BAY AND OCEAN WATERS FROM SOUTH AMBOY TO SEASIDE PARK

In August, 1938, bacteriological examinations were made of surf samples collected from South Amboy to Seaside Park. The procedure was in conformity with a program instituted prior to 1930. Samples were collected from 92 bathing beaches located upon the shores of the

Raritan and the Sandy Hook Bays and the Atlantic Ocean. The results obtained in the examinations of samples collected, are shown in the table which follows this article.

It is concluded, as of August, 1938, that: the sanitary conditions of the bay waters have improved since the preceding survey; the bay waters, except in and around South Amboy and Keansburg, are relatively safe for recreational purposes, including bathing; and, the ocean waters, adjacent to the bathing beaches from Sea Bright to Seaside Park, are relatively safe for recreational purposes, including bathing.

Due to increased work in duties established by law, board action and usage, and limited personnel, a survey of the bay and ocean waters was not made in the summer of 1939; therefore, an opinion cannot be expressed upon these waters for that period.

(Reference: Annual Report, 1930 to 1935, 1938.)

BACTERIOLOGICAL DATA  
SURF SAMPLES COLLECTED AUGUST 29 AND 30, 1933  
FROM SOUTH AMBOY TO SEASIDE PARK, N. J.

8-1 to 8-82 Aug. 29, 1933  
8-101 to 8-132 Aug. 30, 1933

Sample No.	MUNICIPALITY	LOCATION	TIME	TIDE	COLI-ABROGENES GROUP	INDUS. COIL PER C.C.
8-1	South Amboy	One Block East of Railroad Station	11:00 AM	high	Present 4 of 5 - 0.1 c.c.	8.0
8-101	South Amboy	One Block East of Railroad Station	5:55 AM	low	Present 2 of 5 - 0.01 c.c.	40.0
8-2	South Amboy	West of Railroad Pier	11:00 AM	high	Present 3 of 5 - 0.01 c.c.	60.0
8-102	South Amboy	West of Railroad Pier	5:55 AM	low	Present 2 of 5 - 0.01 c.c.	40.0
8-3	South Amboy	East of Railroad Pier	11:00 AM	high	Present 1 of 5 - 0.01 c.c.	20.0
8-103	South Amboy	East of Railroad Pier	5:55 AM	low	Present 1 of 5 - 0.01 c.c.	20.0
8-4	Morgan	West of Jetty	11:30 AM	high	Present 2 of 5 - 0.1 c.c.	4.0
8-104	Morgan	West of Jetty	6:10 AM	low	Present 2 of 5 - 0.1 c.c.	4.0
8-5	Morgan	Chesapeake Creek at Bay	11:30 AM	high	Present 1 of 5 - 0.1 c.c.	2.0
8-105	Morgan	Chesapeake Creek at Bay	6:10 AM	low	Present 1 of 5 - 0.1 c.c.	2.0
8-6	Morgan	East of Jetty	11:30 AM	high	Present 4 of 5 - 1.0 c.c.	0.8
8-106	Morgan	East of Jetty	6:10 AM	low	Present 4 of 5 - 1.0 c.c.	0.8
8-7	Laurence Harbor	West End of Restaurant-Inlet	11:30 AM	high	Present 3 of 5 - 0.1 c.c.	6.0
8-107	Laurence Harbor	West End of Restaurant-Inlet	6:20 AM	low	Present 1 of 5 - 0.1 c.c.	2.0
8-8	Laurence Harbor	East End of Restaurant	11:35 AM	high	Present 1 of 5 - 0.1 c.c.	2.0
8-108	Laurence Harbor	East End of Restaurant	6:25 AM	low	Present 4 of 5 - 1.0 c.c.	0.8
8-9	Laurence Harbor	Beach West of Sledler's	11:35 AM	high	Present 4 of 5 - 1.0 c.c.	0.8
8-109	Laurence Harbor	Beach West of Sledler's	6:25 AM	low	Present 3 of 5 - 1.0 c.c.	0.8
8-10	Sledler's Beach	West of Restaurant	11:45 AM	high	Present 3 of 5 - 0.1 c.c.	6.0
8-110	Sledler's Beach	West of Restaurant	6:25 AM	low	Present 3 of 5 - 0.1 c.c.	6.0
8-11	Sledler's Beach	East of Restaurant	11:45 AM	high	Present 3 of 5 - 0.1 c.c.	4.0
8-111	Sledler's Beach	East of Restaurant	6:25 AM	low	Present 3 of 5 - 1.0 c.c.	0.8
8-12	Keyport	100 Feet Above Outfall	11:55 AM	high	Present 4 of 5 - 0.1 c.c.	8.0
8-112	Keyport	100 Feet Above Outfall	6:35 AM	low	Present all of 5 - 0.1 c.c.	10.0
8-13	Keyport	100 Feet Below Outfall	11:55 AM	high	No Sample Taken	
8-113	Keyport	100 Feet Below Outfall	6:35 AM	low	Present all of 5 - 0.1 c.c.	10.0
8-14	Keyport	Main Beach at Dock	11:55 AM	high	Present 2 of 5 - 0.1 c.c.	4.0
8-114	Keyport	Main Beach at Dock	6:35 AM	low	Present 3 of 5 - 0.1 c.c.	6.0
8-15	Keyport	Road Works	12:00 N	1 hr. ebb	Present all of 5 - 1.0 c.c.	1.0
8-115	Keyport	Road Works	6:35 AM	low	Present all of 5 - 1.0 c.c.	1.0
8-16	Union Beach	Yacht Club	12:10 PM	1 hr. ebb	Present 3 of 5 - 0.1 c.c.	0.0
8-116	Union Beach	Yacht Club	6:45 AM	low	Present all of 5 - 1.0 c.c.	1.0
8-17	Keansburg	Laurel Avenue	12:25 PM	1 hr. ebb	Present 3 of 5 - 0.1 c.c.	6.0
8-117	Keansburg	Laurel Avenue	7:00 AM	1 hr. flood	Present 3 of 5 - 0.1 c.c.	6.0
8-18	Keansburg	Oakwood Place	12:30 PM	1 hr. ebb	Present 1 of 5 - 1.0 c.c.	0.2
8-118	Keansburg	Oakwood Place	7:00 AM	1 hr. flood	Present 4 of 5 - 0.1 c.c.	8.0
8-19	Keansburg	Car Avenue	12:35 PM	1 hr. ebb	Present 2 of 5 - 0.1 c.c.	4.0
8-119	Keansburg	Car Avenue	7:10 AM	1 hr. flood	Present 1 of 5 - 0.01 c.c.	20.0
8-20	Keansburg	Grandview Avenue	12:40 PM	1 hr. ebb	Present 3 of 5 - 0.1 c.c.	6.0
8-120	Keansburg	Grandview Avenue	7:15 AM	1 hr. flood	Present 4 of 5 - 0.1 c.c.	8.0
8-21	Keansburg	Bayview Avenue	12:45 PM	1 hr. ebb	Present 2 of 5 - 0.1 c.c.	4.0
8-121	Keansburg	Bayview Avenue	7:15 AM	1 hr. flood	Present 2 of 5 - 0.1 c.c.	4.0
8-22	Keansburg	100 Feet West of Outfall	7:20 AM	1 hr. flood	No Samples Taken	
8-122	Keansburg	100 Feet West of Outfall	12:50 PM	1 hr. ebb	Present all of 5 - 1.0 c.c.	1.0
8-23	Keansburg	500 Feet East of Outfall	7:20 AM	1 hr. flood	Present 2 of 5 - 0.1 c.c.	4.0
8-123	Keansburg	500 Feet East of Outfall	12:50 PM	1 hr. ebb	Present all of 5 - 1.0 c.c.	1.0
8-24	Ideal Beach	Beacon Avenue	12:55 PM	1 hr. ebb	Present 2 of 5 - 0.1 c.c.	4.0
8-124	Ideal Beach	Beacon Avenue	7:25 AM	1 hr. flood	Present 1 of 5 - 0.1 c.c.	2.0
8-25	Atlantic Highlands	Atlantic Beach	1:10 PM	2 hr. ebb	Present 1 of 5 - 1.0 c.c.	0.2
8-125	Atlantic Highlands	Atlantic Beach	7:35 AM	1 hr. flood	Present 1 of 5 - 0.1 c.c.	2.0
8-26	Atlantic Highlands	Richard's Beach	1:10 PM	2 hr. ebb	Present 1 of 5 - 0.1 c.c.	0.2
8-126	Atlantic Highlands	Richard's Beach	7:35 AM	1 hr. flood	Present 1 of 5 - 0.1 c.c.	2.0
8-27	Atlantic Highlands	Free Beach	1:10 PM	2 hr. ebb	Present 2 of 5 - 0.1 c.c.	2.0
8-127	Atlantic Highlands	Free Beach	7:35 AM	1 hr. flood	Present 2 of 5 - 0.1 c.c.	4.0
8-28	Highlands	Atlantic Avenue	1:45 PM	2 hr. ebb	Present 1 of 5 - 0.1 c.c.	2.0
8-128	Highlands	Atlantic Avenue	7:35 AM	1 hr. flood	Present 1 of 5 - 0.1 c.c.	2.0
8-29	Highlands	Cornwall Avenue	1:50 PM	2 hr. ebb	Present all of 5 - 1.0 c.c.	1.0
8-129	Highlands	Cornwall Avenue	7:40 AM	1 hr. flood	Present 1 of 5 - 0.1 c.c.	2.0
8-30	Highlands	Shrewsbury Pumping Station No. 1 Public Beach	1:50 PM	2 hr. ebb	Present 3 of 5 - 1.0 c.c.	0.8
8-130	Highlands	Shrewsbury Pumping Station No. 1 Public Beach	7:45 AM	1 hr. flood	Present 3 of 5 - 1.0 c.c.	0.8
8-31	Sea Bright	South Beach	2:05 PM	3 hr. ebb	Present all of 5 - 1.0 c.c.	1.0
8-131	Sea Bright	South Beach	7:50 AM	1 hr. flood	Present 4 of 5 - 1.0 c.c.	0.8

BACTERIOLOGICAL DATA  
SURF SAMPLES COLLECTED AUGUST 29 AND 30, 1938  
FROM SOUTH AMBOY TO SEASIDE PARK, N. J.—Continued

Sample No.	MUNICIPALITY	LOCATION	TIME	TIDE	COLI-AEROGENES GROUP	INDEX COLI PER C.C.
S-12	Sea Bright	Beach Club	2:30 PM	3 hr. ebb	Present 1 of 5 — 1.0 c.c.	0.2
S-13	Sea Bright	Beach Club	7:35 AM	1 hr. flood	Present 1 of 5 — 1.0 c.c.	0.2
S-133	Sea Bright	Beach Club	2:30 PM	3 hr. ebb	Present 4 of 5 — 10.0 c.c.	0.0
S-134	Sea Bright	Beach Club	7:35 AM	1 hr. flood	Present 3 of 5 — 1.0 c.c.	0.0
S-31	Sea Bright	Pontiasin House	2:25 PM	3 hr. ebb	Present all of 5 — 10.0 c.c.	0.0
S-35	Long Branch	Seaside Baths	8:10 AM	2 hr. flood	Present 4 of 5 — 0.1 c.c.	8.0
S-135	Long Branch	Seaside Baths	9:40 PM	3 hr. ebb	Present all of 5 — 1.0 c.c.	1.0
S-136	Long Branch	Seaside Baths	8:25 AM	2 hr. flood	Present all of 5 — 0.1 c.c.	10.0
S-98	Long Branch	At Outfall	2:50 PM	3 hr. ebb	Present 2 of 5 — 1.0 c.c.	0.4
S-137	Long Branch	Dixons Baths	8:30 AM	2 hr. flood	Present all of 5 — 0.1 c.c.	10.0
S-38	Long Branch	CHY Beach	6:35 AM	3 hr. ebb	Present 2 of 5 — 1.0 c.c.	0.4
S-138	Long Branch	CHY Beach	2:55 PM	3 hr. ebb	Present 1 of 5 — 0.1 c.c.	2.0
S-30	Long Branch	Atlantic Baths	3:00 PM	4 hr. ebb	Present all of 5 — 0.1 c.c.	10.0
S-139	Long Branch	Atlantic Baths	8:45 AM	2 hr. flood	Present 4 of 5 — 0.1 c.c.	8.0
S-40	Long Branch	Norptane Baths	3:05 PM	4 hr. ebb	Present all of 5 — 0.1 c.c.	10.0
S-140	Long Branch	Norptane Baths	8:55 AM	2 hr. flood	Present 2 of 5 — 0.1 c.c.	4.0
S-41	Long Branch	Colonial Baths	3:15 PM	4 hr. ebb	Present 1 of 5 — 0.1 c.c.	2.0
S-141	Long Branch	Colonial Baths	8:00 AM	3 hr. flood	Present 1 of 5 — 0.1 c.c.	2.0
S-42	Edison	Garfield Terrace	3:20 PM	4 hr. ebb	Present 2 of 5 — 0.1 c.c.	4.0
S-142	Edison	Garfield Terrace	8:20 AM	3 hr. flood	Present 2 of 5 — 0.1 c.c.	4.0
S-43	Deal	North of Outfall	3:25 PM	4 hr. ebb	Present 1 of 5 — 0.1 c.c.	2.0
S-143	Deal	North of Outfall	8:35 AM	3 hr. flood	Present 1 of 5 — 0.1 c.c.	2.0
S-44	Deal	South of Outfall	3:20 PM	4 hr. ebb	Present 2 of 5 — 0.1 c.c.	4.0
S-144	Deal	South of Outfall	8:20 AM	3 hr. flood	Present 2 of 5 — 0.1 c.c.	4.0
S-45	Deal	Phillip Avenue	3:25 PM	4 hr. ebb	Present 3 of 5 — 0.1 c.c.	0.0
S-145	Deal	Phillip Avenue	8:35 AM	3 hr. flood	Present 2 of 5 — 0.1 c.c.	4.0
S-46	Deal	Deal	3:30 PM	4 hr. ebb	Present 3 of 5 — 1.0 c.c.	0.6
S-146	Deal	Deal	8:40 AM	3 hr. flood	Present 1 of 5 — 1.0 c.c.	0.2
S-47	Allenhurst	Deal	3:20 PM	4 hr. ebb	Present 4 of 5 — 10.0 c.c.	0.0
S-147	Allenhurst	Deal	8:50 AM	3 hr. flood	Present 3 of 5 — 1.0 c.c.	0.0
S-48	Allenhurst	At Outfall	3:28 PM	4 hr. ebb	Present 1 of 5 — 1.0 c.c.	0.2
S-148	Allenhurst	At Outfall	10:00 AM	4 hr. flood	Present 1 of 5 — 1.0 c.c.	0.2
S-49	Lock Harbor	At Outfall	3:20 PM	4 hr. ebb	Present all of 5 — 10.0 c.c.	0.0
S-149	Lock Harbor	At Outfall	10:00 AM	4 hr. flood	Present 1 of 5 — 0.1 c.c.	2.0
S-50	Asbury Park	Eighth Avenue	3:15 PM	4 hr. ebb	Present 1 of 5 — 0.1 c.c.	2.0
S-150	Asbury Park	Eighth Avenue	10:10 AM	4 hr. flood	Present 2 of 5 — 0.1 c.c.	4.0
S-51	Asbury Park	Third Avenue	3:10 PM	4 hr. ebb	Present 4 of 5 — 1.0 c.c.	0.8
S-151	Asbury Park	Third Avenue	10:10 AM	4 hr. flood	Present all of 5 — 1.0 c.c.	1.0
S-52	Asbury Park	Colored Beach	3:00 PM	4 hr. ebb	Present all of 5 — 0.1 c.c.	10.0
S-152	Asbury Park	Colored Beach	10:01 AM	4 hr. flood	Present 3 of 5 — 0.1 c.c.	0.0
S-53	Ocean Grove	North End of Pavilion	3:00 PM	4 hr. ebb	Present all of 5 — 1.0 c.c.	1.0
S-153	Ocean Grove	North End of Pavilion	9:57 AM	3 hr. flood	Present 1 of 5 — 0.1 c.c.	2.0
S-154	Ocean Grove	South End of Pavilion	3:05 PM	4 hr. ebb	Present 1 of 5 — 1.0 c.c.	0.2
S-55	Bridley Beach	North of Newark Avenue	3:46 AM	3 hr. flood	Present all of 5 — 0.1 c.c.	10.0
S-155	Bridley Beach	North of Newark Avenue	9:53 AM	3 hr. flood	Present 3 of 5 — 0.1 c.c.	6.0
S-156	Bridley Beach	South of Newark Avenue	2:55 PM	3 hr. ebb	Present all of 5 — 0.1 c.c.	10.0
S-157	Bridley Beach	200 Feet North of Newark Avenue	9:44 AM	3 hr. flood	Present all of 5 — 0.1 c.c.	10.0
S-57	Bridley Beach	200 Feet South of Newark Avenue	2:45 PM	3 hr. ebb	Present all of 5 — 0.1 c.c.	10.0
S-58	Bridley Beach	Larkline Avenue	6:40 AM	3 hr. flood	Present all of 5 — 1.0 c.c.	1.0
S-158	Bridley Beach	Larkline Avenue	2:40 PM	3 hr. ebb	Present all of 5 — 0.1 c.c.	10.0
S-159	Bridley Beach	Fifth Avenue	9:50 AM	3 hr. flood	Present 1 of 5 — 0.1 c.c.	4.0
S-160	Bridley Beach	Fifth Avenue	9:32 AM	3 hr. flood	Present 2 of 5 — 0.1 c.c.	2.0
S-60	Avon	Second Avenue	2:25 PM	3 hr. ebb	Present all of 5 — 0.1 c.c.	0.6
S-160	Avon	Second Avenue	9:27 AM	3 hr. flood	Present 2 of 5 — 1.0 c.c.	0.4
S-61	Avon	Norwood Avenue	2:22 PM	3 hr. ebb	Present all of 5 — 1.0 c.c.	1.0
S-161	Avon	Norwood Avenue	9:23 AM	3 hr. flood	Present all of 5 — 10.0 c.c.	0.0
S-62	Belmar	At Outfall	2:15 PM	3 hr. ebb	Present all of 5 — 0.1 c.c.	10.0
S-162	Belmar	At Outfall	8:14 AM	3 hr. flood	Present all of 5 — 1.0 c.c.	1.0
		Second Avenue			No Sample Taken	...
		Second Avenue			Present all of 5 — 1.0 c.c.	1.0

BACTERIOLOGICAL DATA  
 SUFF SAMPLES COLLECTED AUGUST 29 AND 30, 1933  
 FROM SOUTH AMBOY TO SEASIDE PARK, N. J.—Continued

Sample No.	MUNICIPALITY	LOCATION	TIME	TIDE	COLI-AEROBES GROUP	INDEX COLI PER C.C.
S-1	Belmar	Fifth Avenue	2:15 PM	3 hr. ebb	Present 1 of 5 — 0.1 c.c.	2.0
S-103	Belmar	Fifth Avenue	9:07 AM	3 hr. flood	Present 3 of 5 — 0.1 c.c.	6.0
S-04	Belmar	300 Feet North of Outfall	2:10 PM	3 hr. ebb	Present all of 5 — 1.0 c.c.	1.0
S-104	Belmar	300 Feet North of Outfall	9:02 AM	3 hr. flood	Present 3 of 5 — 0.1 c.c.	6.0
S-05	Belmar	300 Feet South of Outfall	2:08 PM	3 hr. ebb	Present all of 5 — 1.0 c.c.	1.0
S-105	Belmar	300 Feet South of Outfall	8:58 AM	2 hr. flood	Present 3 of 5 — 0.1 c.c.	6.0
S-06	Belmar	16th Avenue	2:05 PM	3 hr. ebb	Present 1 of 5 — 0.1 c.c.	2.0
S-106	Belmar	16th Avenue	8:50 AM	2 hr. flood	Present 2 of 5 — 0.1 c.c.	4.0
S-07	Spring Lake	Como outfall	2:00 PM	3 hr. ebb	Present 3 of 5 — 1.0 c.c.	6.0
S-107	Spring Lake	Como outfall	8:42 AM	2 hr. flood	Present 4 of 5 — 0.1 c.c.	8.0
S-08	Spring Lake	Lanlow Avenue	1:58 PM	2 hr. ebb	Present 3 of 5 — 1.0 c.c.	6.0
S-108	Spring Lake	Lanlow Avenue	8:38 AM	2 hr. flood	Present 1 of 5 — 0.1 c.c.	2.0
S-09	Spring Lake	Newark Avenue	1:50 PM	2 hr. ebb	Present 1 of 5 — 1.0 c.c.	6.0
S-109	Spring Lake	Newark Avenue	8:30 AM	2 hr. flood	Present 4 of 5 — 0.1 c.c.	8.0
S-70	Spring Lake	Morris Avenue	1:45 PM	2 hr. ebb	Present 2 of 5 — 1.0 c.c.	6.0
S-170	Spring Lake	Morris Avenue	8:30 AM	2 hr. flood	Present 4 of 5 — 0.1 c.c.	8.0
S-71	Spring Lake	South End of Pavilion	1:40 PM	2 hr. ebb	Present 3 of 5 — 1.0 c.c.	6.0
S-171	Spring Lake	South End of Pavilion	8:25 AM	2 hr. flood	Present all of 5 — 1.0 c.c.	1.0
S-72	Spring Lake	Pain Avenue	1:38 PM	2 hr. ebb	Present 3 of 5 — 1.0 c.c.	6.0
S-172	Spring Lake	Pain Avenue	8:22 AM	2 hr. flood	Present 2 of 5 — 1.1 c.c.	4.0
S-73	Sea Girt	Bacon Avenue	1:18 PM	2 hr. ebb	Present 1 of 5 — 1.0 c.c.	6.0
S-173	Sea Girt	Bacon Avenue	8:12 AM	2 hr. flood	Present 1 of 5 — 0.1 c.c.	2.0
S-74	Sea Girt	Stockton Avenue	1:15 PM	2 hr. ebb	Present 2 of 5 — 0.9 c.c.	6.0
S-174	Sea Girt	Stockton Avenue	8:07 AM	2 hr. flood	Present 2 of 5 — 0.1 c.c.	4.0
S-75	Manasquan	At Outfall	1:08 PM	2 hr. ebb	Present 1 of 5 — 0.1 c.c.	2.0
S-175	Manasquan	At Outfall	7:57 AM	1 hr. flood	Present 2 of 5 — 0.1 c.c.	4.0
S-76	Manasquan	Main Street	1:04 PM	2 hr. ebb	Present 1 of 5 — 1.0 c.c.	6.0
S-176	Manasquan	Main Street	7:53 AM	1 hr. flood	Present 1 of 5 — 0.1 c.c.	2.0
S-77	Manasquan	North of Inlet	1:02 PM	2 hr. ebb	Present all of 5 — 0.9 c.c.	6.0
S-177	Manasquan	100 Yards North of Inlet	7:50 AM	1 hr. flood	Present 4 of 5 — 1.0 c.c.	6.8
S-78	Point Pleasant	Water Street	12:30 PM	1 hr. ebb	Present 1 of 5 — 0.1 c.c.	2.0
S-178	Point Pleasant	Water Street	7:41 AM	1 hr. flood	Present 1 of 5 — 1.0 c.c.	6.8
S-79	Point Pleasant	Central Avenue	12:48 PM	1 hr. ebb	Present 1 of 5 — 0.1 c.c.	2.0
S-179	Point Pleasant	Central Avenue	7:38 AM	1 hr. flood	Present all of 5 — 0.9 c.c.	6.0
S-80	Point Pleasant	Alnonte Avenue	12:08 PM	1 hr. ebb	Present 3 of 5 — 0.1 c.c.	6.0
S-180	Point Pleasant	Alnonte Avenue	7:31 AM	1 hr. flood	Present 4 of 5 — 1.0 c.c.	6.8
S-81	Bay Head	Bacon Hotel	12:00 N.	1 hr. ebb	Present 1 of 5 — 1.0 c.c.	6.2
S-181	Bay Head	Bacon Hotel	7:25 AM	1 hr. flood	Present 3 of 5 — 1.0 c.c.	6.6
S-82	Bay Head	Osborne Avenue	11:50 AM	high	Present 1 of 5 — 1.0 c.c.	6.2
S-182	Bay Head	Osborne Avenue	7:22 AM	1 hr. flood	Present 1 of 5 — 1.0 c.c.	6.8
S-83	Bay Head	200 Feet South of Bridge Street	11:55 AM	high	Present 4 of 5 — 0.9 c.c.	6.0
S-183	Bay Head	200 Feet South of Bridge Street	7:20 AM	1 hr. flood	Present 4 of 5 — 1.0 c.c.	6.8
S-84	Manaloking	Williams Place	11:45 AM	high	Present all of 5 — 1.0 c.c.	6.0
S-184	Manaloking	Williams Place	7:15 AM	1 hr. flood	Present all of 5 — 1.0 c.c.	1.0
S-85	Manaloking	Lyman Place	11:30 AM	high	Present 2 of 5 — 1.0 c.c.	6.0
S-185	Manaloking	Lyman Place	7:12 AM	1 hr. flood	Present 4 of 5 — 1.0 c.c.	6.8
S-86	Lavallette	President Avenue	11:32 AM	high	Present 2 of 5 — 1.0 c.c.	6.4
S-186	Lavallette	President Avenue	7:06 AM	1 hr. flood	Present 4 of 5 — 1.0 c.c.	6.8
S-87	Lavallette	At Outfall	11:30 AM	high	Present 2 of 5 — 1.0 c.c.	6.0
S-187	Lavallette	At Outfall	7:05 AM	1 hr. flood	Present 3 of 5 — 1.0 c.c.	6.6
S-88	Seaside Heights	Keany Avenue	11:15 AM	high	Present 4 of 5 — 1.0 c.c.	6.8
S-188	Seaside Heights	Keany Avenue	7:00 AM	low	Present 4 of 5 — 1.0 c.c.	6.6
S-89	Seaside Heights	At Outfall	11:12 AM	high	Present all of 5 — 1.0 c.c.	1.0
S-189	Seaside Heights	At Outfall	6:58 AM	low	Present all of 5 — 1.0 c.c.	1.0
S-90	Seaside Heights	At Old Pavilion	11:02 AM	high	Present 4 of 5 — 1.0 c.c.	6.8
S-190	Seaside Heights	At Old Pavilion	6:55 AM	low	Present 3 of 5 — 1.0 c.c.	6.6
S-91	Seaside Heights	Decatur Avenue	11:00 AM	high	Present 3 of 5 — 1.0 c.c.	6.6
S-191	Seaside Heights	Decatur Avenue	6:47 AM	low	Present 3 of 5 — 0.1 c.c.	6.6
S-92	Seaside Park	Below Cottage Group	10:50 AM	high	Present 3 of 5 — 1.0 c.c.	6.6
S-192	Seaside Park	Below Cottage Group	6:40 AM	low	Present 4 of 5 — 1.0 c.c.	6.8

No. 10—POLLUTION OF THE WATERS OF INSIDE THOROFARE AND THE INVESTIGATION OF THE ATLANTIC CITY SEWERAGE COMPANY'S EXPERIMENTAL DOWN-FLOW SEWAGE RAPID SAND FILTER.

Following the conclusion of certain investigations made by representatives of the Department of the operation of the Atlantic City Sewerage Company's City Island sewage treatment plant and the Brigantine City municipal sewage treatment plant, and the sanitary quality of the waters contiguous thereto, the Department at its meeting held on January 12, 1937, on motion, voted that a copy of the report of the findings be forwarded to the authorities of the City of Atlantic City and Brigantine City, and to the Atlantic City Sewerage Company, with the request that the Atlantic City officials take cognizance of the pollution of its bathing beaches and that both of the municipalities and the company study the findings contained in the report and advise the Department as to the results of their deliberation.

After an exchange of several communications between the Department and the Atlantic City Sewerage Company and Atlantic City, the Department at its meeting held on September 14, 1937, considered a proposal submitted by the Atlantic City Sewerage Company, requesting it:

- (a) To acquiesce in the installation of the experimental down-flow filters; and,
- (b) To co-operate with the company in the investigation of the said filter.

After due consideration the Department, on motion, voted that:

1. The Department approves of the installation of the experimental sewage filter proposed by the said company.
2. The representatives of the Department of Health will co-operate in the investigation of the aforesaid experimental sewage filter, but that this co-operation will be restricted to the number of personnel and funds available.
3. That the Atlantic City Sewerage Company be required to subject its sewage plant effluent to effective chlorination, said system of chlorination to be placed in operation on or before May 15, 1938; and, further, that said chlorination shall be continued during each day of the year.

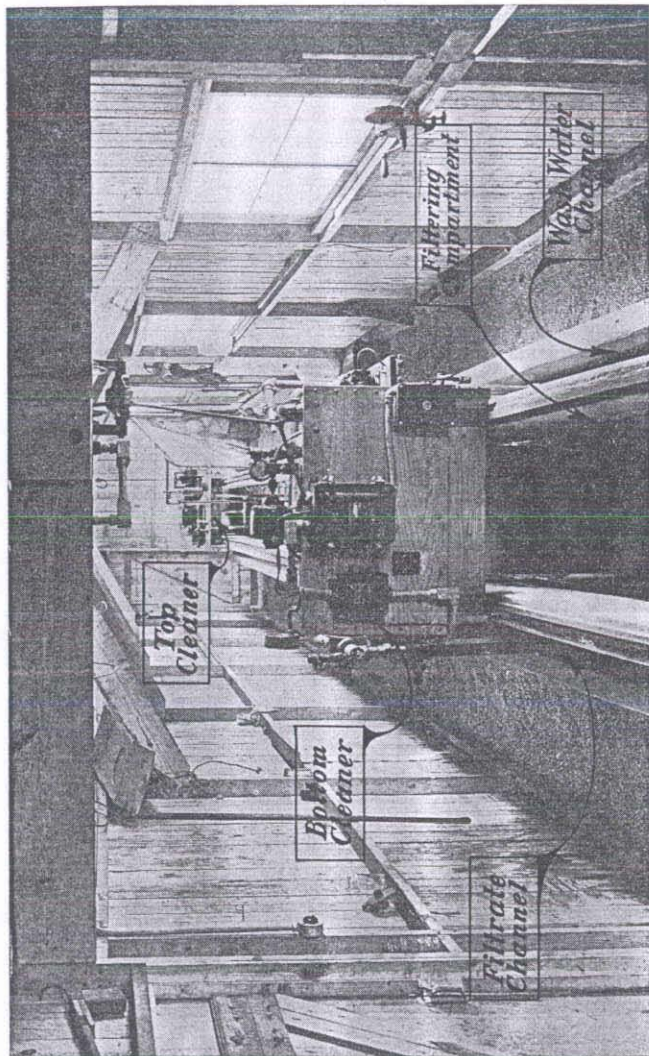
With respect to the last mentioned item the Department caused the service of a notice upon the said company on October 19, 1937, requiring that it must and shall, prior to May 15, 1938, expand and/or intensify its method of treatment, to include efficient sedimentation and effective

chlorination. On April 12, 1938, the Department granted the Atlantic City Sewerage Company a year's extension of time in order that it may further its experiments.

During the course of the ensuing year representatives of the Department collaborated with the Atlantic City Sewerage Company in the investigation of the experimental sewage down-flow rapid sand filter. More specifically these investigations were made on May 15 and 16, April 26 and 27, July 16 and 17, and October 16, 17 and 18, 1938.

Space will not permit a detailed description of this filter. It may be described, briefly, however, as a rectangular channel 52 feet in length, 2 feet in width and 3 feet 8 inches in depth. Spanning this channel, several inches above the floor, is a woven iron screen ( $\frac{1}{4}$  inch mesh) upon which is mounted a fine copper slotted screen with openings of approximately 0.012". This screen in turn is superimposed by a 6" layer of filtering sand (effective size equal to 0.44 mm.; uniformity coefficient equal to 2.0). The effective filtering area is  $69 \pm$  square feet. (See attached photograph.)

In general, the operation of the filter is as follows: The sewage is distributed through port-holes over the entire area of the filtering sand, and then passes downward through the sand, the fine screen and the supporting grit screen. The filtered effluent enters a channel running the full length of, and adjacent to, the filtering compartment, which discharges into the receiving waters. The filtering media is cleaned by means of two devices which travel the length of the filter on rails provided for that purpose. One of the devices is designated as the "top-cleaner" and its function is to free the filtering media of the solids retained on the surface. This cleaner operates automatically at regular time intervals, and is actuated by means of a switch which may be set to operate at any interval desired. The other cleaner, designated as the "bottom-cleaner," frees the screen and filtering media of the solids impregnated throughout the depth of the media and retained on the screen. The operation of this mechanism is actuated by a switch which is controlled automatically by a predetermined head-loss, caused by the clogging of the media. In other words, when the differential in head, that is, the difference between the water levels in the filtering compartment and the filtering channel, reaches the predetermined head, the switch is thrown into contact and thereby actuates the travel of the mechanisms. The wash



ATLANTIC CITY SEWERAGE CO.'S EXPERIMENTAL DOWN-FLOW SEWAGE FILTER

water, including the freed solids, is discharged by each of the mechanisms into a dirty wash channel (See attached photograph.)

The paramount purpose of these investigations was to determine if this filter, in addition to removing the larger solids, would substantially remove the organisms of the coli-aerogenes group. It was hoped that with the high degree of suspended solids removed, the reduction of the organisms of the coli-aerogenes group would prove as effective as by chlorination.

One factor in the consideration of filtration was the very high cost of chlorinating the entire flow of sewage.

After a very careful analyses of the findings of these investigations, the Atlantic City Sewerage Company concluded that the filter would not produce the desired objectives. In consequence thereof the Department on April 11, 1939, ordered the said company to install and place into operation, on or before June 1, 1939, chlorine apparatus for the disinfection of the sewage treated at the City Island plant and to submit, on or before February 1, 1940, satisfactory plans and other engineering data for the installation of permanent means and/or devices for efficient sedimentation and effective chlorination, and that the said works be constructed and placed into operation on or before June 1, 1940.

With further respect to the investigation of the experimental filter it was generally concluded:

1. That the experimental down-flow sewage filter handled successfully a sewage flow up to 200,000 gallons per day, which, upon the basis of 100 gallons per capita, is equivalent to a sewage flow contributed by a population of 2,000 persons.
2. That during the course of these investigations, the sewage was filtered at an average rate ranging from 1.5 gallons per minute per square foot to 2.04 gallons per minute per square foot.
3. That the operation of the filter was not interrupted at any time during the course of the investigation as a result of mechanical failures.
4. That the surface and bottom cleaners operated effectively during the course of the investigations, since at no time has there been any apparent clogging of the media or the screen.
5. That it is believed the time of operation was not of sufficient duration to guarantee uninterrupted service over a prolonged period.
7. That the filter caused a consistent reduction in the suspended solids, on the basis of the average of the daily results of analysis, ranging from 20 parts per million to 61 parts per million.

9. That the filter caused a consistent reduction to a lesser or greater degree in the oxygen consumed and the biochemical oxygen demand.

11. That the reduction of the suspended solids does not reduce correspondingly the bacterial content.

13. That the filter caused consistently a reduction of the chlorine demand of the sewage ranging from 2.5 parts per million to 7.5 parts per million.

The time and labor expended by the personnel of the Bureaus to accomplish this task, resolved into terms of man-days, are as follows:

Bureau of Engineering—technical staff .....	460 man-days
clerical staff .....	16 man-days
Bureau of Chemistry .....	110 man-days

NO. 11—BACTERIOLOGICAL STANDARDS FOR WATERS USED FOR POTABLE AND DOMESTIC PURPOSES, AND, TO BE USED IN PROSECUTION UNDER CHAPTER 253, LAWS OF 1909 (NOW SECTION 58:11 OF THE REVISED STATUTES).

Acting under the advice of the Attorney-General, the State Department of Health, at a meeting held on January 12, 1937, adopted a preamble and resolution which, in part, stated that in all prosecutions the "bacteriological quality for drinking and culinary water supplied by common carriers in interstate commerce adopted by the Public Health Service of the United States of America as of June 20, 1925, be and they are hereby adopted as bacteriological standards for waters used for potable and domestic purposes in the State of New Jersey." In the preamble and resolution reference was made to the B. coli group, as defined by the American Public Health Association in "Standard Methods of Water Analysis."

The text in the eighth edition of "Standard Methods of Water Analysis," produced the following resolution, adopted April 11, 1939:

"WHEREAS, The Department of Health of the State of New Jersey did, at a meeting held on the twelfth day of January, A. D. one thousand nine hundred and thirty-seven, adopt the following resolution:

*'Be It Resolved*, By the Department of Health of the State of New Jersey, at a meeting held on the twelfth day of January, A. D. one thousand nine hundred and thirty-seven, that in all prosecutions under Chapter 253, Laws of 1909, the drinking water standards in respect to the bacteriological quality for drinking and culinary water supplied by common carriers in interstate commerce adopted by the Public Health Service of the United States of America as of June 20, 1925, be and they are hereby adopted as bacteriological standards for waters used for potable and domestic purposes in the State of New Jersey. . . .';

and,

"WHEREAS, The Department of Health of the State of New Jersey has found and determined that the terms B. Coli and/or B. Coli Group are contained in the aforementioned drinking water standards; and,

"WHEREAS, The Department of Health of the State of New Jersey has determined that the term B. Coli and/or B. Coli Group, as it appears in all editions of Standard Methods of Water Analysis prior to the Sixth Edition, is equivalent to the Coli-Aerogenes Group as defined in the Eighth Edition of Standard Methods of Water Analysis; now, therefore

*"Be It Resolved*, By the Department of Health of the State of New Jersey, at a meeting held on the eleventh day of April, A. D. one thousand nine hundred and thirty-nine, that the terms B. Coli and/or B. Coli Group where they appear in the preamble and resolution adopted at a meeting of the Department of Health on January 12, 1937, be and hereafter are considered equivalent to the Coli-Aerogenes Group, as defined in the Eighth Edition of Standard Methods of Water Analysis."

(Reference: Annual report for 1938.)

NO. 12—CERTIFICATION OF WATER FOR USE ON INTERSTATE CARRIERS.

During the year of 1938, the Department received from the Surgeon-General of the United States Public Health Service, a request to intensify and expand its activities in connection with the certification of water used on interstate carriers. The request issued under date of April 18, 1938, and was contained in "State Officers' Circular Letter No. 28."

The procedure, as expanded in the calendar year of 1938, consists of: The inspection of water supply systems and to include the method of delivering the water to the conveyance and the sanitary precautions taken by the carrier company (but not an inspection of the conveyance itself); notification to the Surgeon-General, in case a supply becomes unsafe due to a catastrophe, such as a flood, or when the local health officer may order the water to be boiled, or when an order is issued by the State Department of Health for the sanitary improvement of the supply.

The certifications are of three classes: favorable, provisional and prohibitive. And from the aforesaid circular letter:

"Supplies having cross connections with other supplies of unsafe character or of unknown sanitary quality shall in no instance be recommended for favorable certification, unless such cross connections are protected in a manner approved by the State Department of Health having jurisdiction and are inspected regularly by an agent of such Department. By-passes between raw and treated supplies shall be considered as cross-connections."



The Bureau is endeavoring to comply, since January 1, 1939, with the expanded procedure, except in the method of delivering the water to the conveyance and the sanitary precautions taken by the carrier company in the municipalities of Jersey City and Hoboken. The vast railroad yards, the proximity of these yards to New York City and the location therein of the District Engineer's Office, together with the experience of its personnel, have resulted in the District Engineer of the United States Public Health Service assuming such obligations in Hoboken and Jersey City, as an agent of this Department.

To meet the additional requirements established by the expanded procedure, it is estimated that one hundred and fifty (150) man-working days will be required of the technical staff; the estimate does not include clerical work and analytical work—the latter performed in the Bureau of Chemistry.

Certification of water for use on interstate carriers is done under the calendar year. From January 1 to December 31, 1938, 31 public and five private watering supply sources, serving 128 carrier watering points, located in 48 municipalities, were certified. Certificates were issued to 58 carrier companies, grouped as follows: 11 railroad companies, 43 steamship companies, and 4 airlines. The certificates covered 41 watering points for railroads, 81 for steamship lines, and six for airlines.

#### No. 13—PHYSICAL CONNECTIONS.

April 1, 1939, marked the 10th anniversary of the effective date of Chapter 13 of the Sanitary Code. This chapter of the code is designed to regulate physical connections between public potable water supplies and any other water supplies. The code defines a physical connection as any "cross-connection \* \* \* which permits or may permit any flow of water into an approved public potable water supply from any other water supply unapproved by the Department \* \* \*." Physical connections not existing on or before April 1, 1929, are prohibited. In cases where the connection existed prior to April 1, 1929, it may be continued if certain protective devices are installed and if a permit for its maintenance so protected is obtained from the Department. Application for a permit must be endorsed by the local Board of Health and the interested public water supply purveyor. Permits are renewed annually

upon the recommendation of the local health authority and water department. Periodic tests of the protective devices are required.

No accurate appraisal of the value of Chapter 13 of the Sanitary Code during its first 10 years can be made. It falls within the category of little heralded measures taken to protect the public health. The only time that "physical connections" to a public water supply would assume any prominence or even existence in the mind of the layman would be upon the outbreak of an epidemic traced to the pollution of a water supply through such a connection. It is sufficient to say that the enforcement of this regulation has resulted in the elimination of hundreds of menaces to the quality of the State's public potable water supplies.

Physical connections are becoming of more concern to waterworks men. This is an important development. The sanitary code is an instrument of public health control and its enforcement lies with the local and State health departments. Experience has shown, however, that the waterworks man usually takes an active part in the elimination of physical connections as soon as he is made aware of their importance. The water purveyor can of course control any connections to his water supply system. The waterworks men have been very helpful in their co-operation with the Bureau in reporting physical connections.

The interest of waterworks men in this matter is evidenced by the policy of the American Water Works Association in choosing its annual convention headquarters. That association has made a detailed sanitary survey, including an investigation of water supply cross-connections, a prerequisite of any hotel chosen as headquarters. It requires the elimination of any water supply hazards. The 1939 convention was held in Atlantic City. The Department was requested to make an investigation of the water supply and other sanitary features at eight hotels under consideration. Physical connections to the water supplies were of primary importance in this investigation. Some connections were found and eliminated promptly. Based upon the findings at the eight hotels investigated it was concluded that the local board of health would be justified in making a survey of other hotels in the city. In response to the Department's suggestion the city health officer agreed that such an investigation should be made. The Department's records indicate that the city health department is proceeding accordingly.

The Bureau desires to emphasize that despite the progress already evidenced, there is an ever-present responsibility on local health officials and water purveyors if the menace of physical connections to public potable water supplies is to be minimized. Representative investigations lead to the conclusion that there remains much to be done in the elimination of connections of long standing; that new connections in violation of the sanitary code may be anticipated. It is significant in the Bureau's experience that the owner of an industrial plant or other establishment maintaining a physical connection to a public water supply, no matter how remote the inherent danger, seldom hesitates to the fullest extent when he is made aware of the risk involved.

The Bureau desires to co-operate with all parties interested in the elimination of physical connections to public potable water supplies. It is dependent upon local authority for effective control. The co-operation evidenced during the first 10 years of operation of the regulation is duly appreciated.

The tabulation lists physical connections under permits as of June 30, 1939.

## PHYSICAL CONNECTIONS UNDER PERMITS AS OF JUNE 30, 1939

NAME OF MUNICIPALITY	NAME OF COMPANY	PUBLIC POTABLE WATER SUPPLY	UNAPPROVED WATER SUPPLY	ORIGINAL PERMIT	
				No.	DATE ISSUED
Arlington	E. I. du Pont de Nemours & Co., Inc. (formerly Eastwood Corporation)	Kearny Water Department (North Jersey District Water Supply Commission)	Drilled wells	131	9-4-29
Avenel	Security Steel Equipment Co., Inc. (formerly Steel Equipment Corporation)	Middlesex Water Company	Artesian well	120	5-7-29
Bayonne	American Radiator & Standard Sanitary Corp. (formerly American Radiator Company)	Bayonne Water Department (North Jersey District Water Supply Commission)	Boiler water from reservoir	120	5-7-29
Bayonne	The Hancock & Wilcox Company	Bayonne Water Department (North Jersey District Water Supply Commission)	Soil water system	116	4-2-29
Bayonne	Malden Form Brassiere Co., Inc.—Bald Italt-Ing Company (formerly Schwarzenbach-Haber Company)	Bayonne Water Department (North Jersey District Water Supply Commission)	Water	95	4-2-29
Belleville	Eastwood Crealey Corporation (formerly Eastwood Corporation), originally Eastwood Wires Corp.)	Belleville Water Department (Newark Water Supply)	Passaic River	102	4-2-29
Bloomfield	The Clark Thread Company	Bloomfield Water Department (Newark Water Supply)	Third River	53	4-2-29
Bloomfield	General Electric Company	Bloomfield Water Department (Newark Water Supply)	Open reservoir—factory fire pump cistern	33	2-6-29
Bloomfield	Thomas Oakes & Company, Inc.	Bloomfield Water Department (Newark Water Supply)	Third River	40	4-2-29
Bloomfield	Samuel Townsend Lavin Mower Co. (formerly Glass Brass & Copper Co., Inc.) (originally Glass Brass & Copper Company)	Bloomfield Water Department (Newark Water Supply)	Tony's Brook	23	1-8-29
Bloomfield	Westinghouse Lamp Company	Bloomfield Water Department (Newark Water Supply)	Artesian well	46	2-5-29
Bogota	Continental Paper Company	Hackensack Water Company	Hackensack River	107	4-2-29
Bogota	Federal Paper Board Co., Inc.	Hackensack Water Company	Hackensack River	108	4-2-29
Burlington	M. S. Pipe & Foundry Company (formerly U. S. Cast Iron Pipe & Foundry Company)	Burlington Water Department (Washington Water Department)	Deaware River	67	4-2-29
Burlington	U. S. Cast Iron Pipe & Foundry Company	Burlington Water Department (Washington Water Department)	Deaware River	85	4-2-29
Butler	American Hard Rubber Company	Butler Water Department	Poquonock River	80	4-2-29
Butler	Pequonoc Rubber Company	Butler Water Department	Poquonock River	123	5-7-29
Camden	Campbell Soap Company	Camden Water Department	Delaware River and artesian well	126	5-7-29
Camden	France-American Chemical Works	Hackensack Water Company	Delaware River	105	4-2-29
Carlstadt	Standard Bleachery & Printing Company	Hackensack Water Company	Delaware River	109	4-2-29
Carlton Hill (East Rutherford)	Fraser Wheeler Corporation	Middlesex Water Company (Perth Amboy)	Passaic River and artesian well	110	4-2-29
Claret	Clifton Paper Mills Co., Inc. (formerly Clifton Paper Mills)	Passaic Valley Water Commission	Private wells	39	2-5-29
Claret	Clifton Paper Mills Co., Inc. (formerly Clifton Paper Mills)	Passaic Valley Water Commission	Passaic River	74	4-2-29
Clifton	Titelwater Realty Company (formerly Dundee Textile Co.)	Passaic Valley Water Commission	Dundee Canal	130	5-7-29

## PHYSICAL CONNECTIONS UNDER PERMITS AS OF JUNE 30, 1939—Continued

NAME OF MUNICIPALITY	NAME OF COMPANY	PUBLIC POTABLE WATER SUPPLY	UNAPPROVED WATER SUPPLY	ORIGINAL PERMIT	
				No.	DATE ISSUED
Clifton	Kursha Printing Company	Passaic Valley Water Commission	Wessex Brook	69	4-2-29
Clifton	Givandans-Bellevue, Inc.	Clifton Water Department	Well	94	4-2-29
Clifton	Interland Manufacturing Co.	Jersey City Water Department	Reservoir fed by springs	88	4-2-29
	Henry Doherty Silk Company (formerly Stanlaw Corporation) (originally The Textile Buildings Company)	Passaic Valley Water Commission	Private supply and cistern	103	4-2-29
East Newark	East Newark Paper Corporation (formerly The Clark Thread Co.)	New Jersey Suburban Water Co. (Passaic Valley Newark Water Department)	Reservoir filled from city main	78	4-2-29
East Newark	Stewart Harborsom Company	Suburban Water Company—Passaic Valley Water Commission	Fire protection and hot well	42	2-5-29
East Orange (Amperes)	Cresker Wheeler Electric Manufacturing Company	East Orange Water Department	Well	131	0-4-29
East Orange (Bloom-Field)	General Electric Company	East Orange Water Department	Open reservoir, factory fire pump cistern (process water)	30	2-5-29
East Orange	The A. P. Smith Mfg. Company	East Orange Water Department	Deep well	80	4-2-29
Edgewater	The United Company of America (formerly American Co.)	Hackensack Water Company	Hudson River	104	4-2-29
Edgewater	The U. S. Aluminum Company	Hackensack Water Company	Hudson River	111	4-2-29
Edgewater	Shenker Kellner & Sons, Inc.	Hackensack Water Company	Hudson River	134	10-4-29
Edgewater	Bellman Brook Bleachery Co.	Hackensack Water Company	Overpeck Creek and Wolf Creek	165	4-2-29
Edgewater	Samuel Hill & Sons, Inc.	Hackensack Water Company	Driven well	40	2-5-29
Edgewater	Acadlin Co. (originally Vorey Organ Co.)	Plainfield-Union Water Company	Driven well	83	4-2-29
Edgewater	Kinkadecker Ice Company	Plainfield-Union Water Company	Driven well	125	5-7-29
Edgewater	Armstrong Cork Company	Gloucester City Water Department	De-la-ware River	41	4-1-30
Edgewater	H. & J.—Lang Manufacturing Co. (formerly The Thinde & Dutch Paper Co.)	Gloucester City Water Department	De-la-ware River	69	4-2-29
Edgewater	Harper Terminal, Inc. (formerly Harper Bros., Inc.) (originally Wm. Campbell Wallpaper Co.)	Gloucester City Water Department	De-la-ware River	1	1-5-29
Edgewater	Casaco Corporation	Hackensack Water Company	Reservoir filled from brook	108	4-2-29
Harrison	Hoffart Roller Bearing Company	Uniontown Water Department (New Jersey Suburban Water Company—Passaic Valley Water Commission)	Artesian well	108	4-18-37
Harrison	R.C.A. Radiotron Company, Inc. (formerly General Electric Co., Incandescent Lamp Division)	Uniontown Water Department (New Jersey Suburban Water Company—Passaic Valley Water Commission)	Deep wells	96	4-2-29
Harrison	Stewart Harborsom Company	Harrison Water Department (New Jersey Suburban Water Company—Passaic Valley Water Commission)	Plant fire reservoir	18	1-5-29
Harrison	Hightstown Rug Company	Harrison Water Department (New Jersey Suburban Water Company—Passaic Valley Water Commission)	Fire protection and hot well	43	2-5-29
Hightstown		Hightstown Water Department	Rocky Creek	118	12-2-30

Hoboken	Reddishon Steel Co.—Hoboken Yard (formerly Reddishon Steel Co., Ltd.) (formerly United Shipbuilding Corp., Ltd.) (originally United Drydocks, Inc.—Fletcher Plant)	Hoboken Water Department (Jersey City Water Department)	Hudson River	93	4-2-29
Hoboken	Hoboken Bleachery	Hoboken Water Department	Hobokus Creek	6	1-8-29
Jersey City	Lackawanna Laundry (formerly Consolidated Laundries Corp.)	Jersey City Water Department	Hudson River water	4	1-8-29
Jersey City	P. Lorillard Company	Jersey City Water Department	Chatern	30	1-8-29
Jersey City	The Riggs Sack Company	Jersey City Water Department	Runs water and make-up water from city main	35	2-5-29
Jersey City	United States Rubber Company (formerly Eureka Fire Hose Mfg. Company)	Jersey City Water Department	Chatern	17	1-8-29
Jersey City	Wilson & Bennett Mfg. Company (formerly Public Sack Thread Co.)	Jersey City Water Department	Chatern	64	4-2-29
Jersey City	Public Service Electric & Gas Co. (West End Gas Works)	Jersey City Water Department	Reservoir	81	1-8-29
Kearny	Congoleum-Nairn, Inc.	Jersey City Water Department	Hackensack River	92	1-8-29
Kearny	The Lison Thread Co., Inc. (formerly Barbour Pins Company)	District Water Supply Commission	Plant system from Passaic River	130	0-6-31
Kearny	Koppers Company (formerly Japanes Gas & Coke Co.) (originally Seaboard By-Product Coke Co.)	District Water Supply Commission	Passaic River and three wells	50	4-2-29
Kearny	Swift and Company	District Water Supply Commission	Plant service water, Hackensack River	20	1-8-29
Kearny	United Cork Companies	District Water Supply Commission	Well water	121	5-7-29
Kearny	Western Electric Company (formerly Ford Motor Co.)	District Water Supply Commission	Passaic River	136	10-1-29
Keport	Armstrong Cork Company (formerly Whittall The Simons Company)	District Water Supply Commission	Passaic River	107	0-16-30
Linden	Volpette, Inc. (formerly Superior Products Corp.)	District Water Supply Commission	Passaic River	101	4-2-29
Little Falls	Little Falls Laundry	Keport Water Department	Gravily tank filled with deep well water	147	0-2-30
Little Falls	Monmouth Memorial Hospital Association	Keport Water Department	Private well	4	1-8-29
Long Branch	American Smelting & Refining Company	Keport Water Department	Elevated gravity tank (city water)	136	12-3-29
Maunser	Barber Asphalt Corporation (formerly The Michelin Tire Co.)	New Jersey Water Service Company (Passaic Valley Water Commission)	Passaic River	76	4-2-29
Milwau	Michelín Tire Co., Inc.	New Jersey Water Service Company (Passaic Valley Water Commission)	Passaic River	20	1-8-29
Milville	Armstrong Cork Company (formerly Whittall The Simons Company)	New Jersey Water Service Company (Passaic Valley Water Commission)	Deep well	165	10-8-35
Montclair	T. A. Adams	Perth Amboy Water Department	Shore Island Sound and plant reservoir	60	4-2-29
		Perth Amboy Water Department	Woodbridge Creek	169	10-19-37
		Milwau Water Department	Lawrence Brook	47	4-2-29
		The Millville Water Company	Maurice River	118	5-7-29
		Milwau Water Department	Maurice River	72	4-2-29
		Monksville Water Department (North Jersey District Water Supply Commission)	Private artesian wells	146	9-11-30
				143	0-3-30

## PHYSICAL CONNECTIONS UNDER PERMITS AS OF JUNE 30, 1939—Continued

NAME OF MUNICIPALITY	NAME OF COMPANY	PUBLIC POTABLE WATER SUPPLY	UNAPPROVED WATER SUPPLY	ORIGINAL PERMIT	
				No.	DATE ISSUED
Montclair	Board of National Missions of the Presby-terian Church in U. S. A. (formerly Jarvis Commonwealth Fund) (originally Estate of Colloid Corporation)	Montclair Water Department (North Jersey District Water Supply Commission)	Artesian well	137	4-1-30
Newark	Mechanics Refrigerating Co.	Newark Water Department	Artesian well	100	9-11-34
Newark	White Laboratories, Inc. (formerly Health Associated Dyeing & Printing Company, Inc. (formerly Sussex Print Works)	Newark Water Department	Well and chemically treated city well	101	2-20-35
Newark	Hoffmann-La Roche, Inc.	Newark Water Department	Well	102	2-20-35
Newton	Orange Dye Company, Inc.	Newton Water Department	Suction reservoir supplied by rain	117	5-7-26
Orange	Orange Dye Company, Inc.	Nutley Water Department	Private well	171	5-9-30
Orange	The Ashton Harlan Company	Orange Water Department	Private well	155	3-7-33
Passaic	Andrew McLean Company	Passaic Valley Water Commission	Deep rock wells, T. A. Gibson plant	132	7-2-20
Passaic	Campbell Morrell & Co., Inc.	Passaic Valley Water Commission	Cistern, city water and well water	59	4-2-20
Passaic	The Manhattan Rubber Mfg. Div. of Reebing Rubber Mfg. Company	Passaic Valley Water Commission	Canal water	15	1-8-20
Passaic	Reebing Rubber Mfg. Company	Passaic Valley Water Commission	Wells	11	4-2-20
Passaic	Manhattan Print Works	Passaic Valley Water Commission	Dundee Canal	77	1-8-20
Passaic	The Okonite Company (formerly The Dundee Water Power and Land Company)	Passaic Valley Water Commission	Dundee Canal	163	4-9-35
Passaic	Reebing Rubber Mfg. Company	Passaic Valley Water Commission	Wesol Brook	81	4-2-20
Passaic	Reebing Rubber Mfg. Company	Passaic Valley Water Commission	Concrete reservoir	10	1-8-20
Passaic	U. S. Rubber Products, Inc. (formerly United States Rubber Co.) (originally N. Y. Belt- ing & Packing Company)	Passaic Valley Water Commission	Dundee Canal	10	1-8-20
Paterson	Associated Lumber Company, Inc. (Harbour Trust Lumber Company, Inc.)	Passaic Valley Water Commission	Passaic River	151	6-2-31
Paterson	Paterson Paper Company	Passaic Valley Water Commission	Upper race, Passaic River	1	1-5-20
Paterson	Doherty & Winchworth Company	Passaic Valley Water Commission	Artesian well	67	4-2-20
Paterson	Dolphin Juice Milk	Passaic Valley Water Commission	Open reservoir from Passaic River	51	4-2-20
Paterson	Wright Aeronautical Corporation	Passaic Valley Water Commission	Open reservoir and well	98	4-2-20
Paterson	Andrew Reedy Corporation	Passaic Valley Water Commission	City water to two underground cisterns	84	4-2-20
Paterson	Eastwood Realty Company (formerly Estate of Benjamin Eastwood)	Passaic Valley Water Commission	Cistern—roof drains and well water	58	4-2-20
Paterson	Hall Mills (Vander S. Hall)	Passaic Valley Water Commission	Artesian well and rain water	3	1-8-20
Paterson	The Madison Ave. Realty Co.	Passaic Valley Water Commission	Reservoir	62	4-2-20
Paterson	The Manhattan Shirt Company	Passaic Valley Water Commission	Cistern	10	1-8-20
Paterson	Morrison Machine Company	Passaic Valley Water Commission	Passaic River	10	1-8-20
Paterson		Passaic Valley Water Commission	Open reservoir	97	4-2-20

Paterson	Phoenix & Harmony & Industry Mills (Bertha Grobart)	Passaic Valley Water Commission	Passaic River	104	6-11-35
Paterson	Public Service Electric & Gas Company	Passaic Valley Water Commission	Deep wells	150	6-6-33
Paterson	United Price Dye Works (Waldmann Div. 200)	Passaic Valley Water Commission	Passaic River	7	1-8-20
Paterson	Marie Walder	Passaic Valley Water Commission	Deep wells	8	1-8-20
Paterson	Chatsworth Mfg. Company, Consolidated	Perth Amboy Water Department	City water cistern	113	4-2-20
Paterson	Perth Amboy	Perth Amboy Water Department	Well and salt water	114	4-2-20
Perth Amboy	International Shingle & Refining Company	Perth Amboy Water Department	Wells	123	5-7-20
Phillipsburg	(formerly Rearton Copper Works)	Perth Amboy Water Department	Wells	70	4-2-20
Phillipsburg	A. J. Julliard & Co., Inc.—Standard Silk	Prophet Water Company	Wells and cisterns	48	4-2-20
Plainfield	International Hat and Millinery (formerly International Hat and Motor Company)	Plainfield-Union Water Company	Private sprinkler system	44	2-5-20
Rahway	Merkel & Company, Inc.	Rahway Water Department	Wells	21	1-8-20
Raritan	Raritan & Jersey Mfg. Company	Somerville Water Company	Raritan River	65	4-2-20
Ridgewood	Loew Paper Corporation (Warren Chen MH) (formerly Warren Mfg. Company)	Hickensack Water Company	Deep wells	53	4-2-20
Ridgewood	Blugel Paper Corporation (Warren Chen MH) (formerly Warren Mfg. Company)	Hickensack Water Company	Ammonoencog River	130	4-2-20
Ridgewood	The Walsby Dye & Paint Works, Inc.	Hickensack Water Company	Wells	157	9-12-33
Rutherford	Hecton, Dickinson & Company	Itseel Paper Corporation supply	Miscellaneous River	100	4-15-37
Salem	Gayner Glass Works	Itseel Paper Corporation supply	Rockaway River	158	2-6-34
South Bound Brook	The Rutherford Company	Plainfield-Union Water Company	Rockaway River	54	4-2-20
South River	Siney Blumenthal & Co., Inc., South River Division (formerly South River Spinning Company)	Bound Brook Water Company	Deep well	144	9-11-30
Trenton	The Acme Rubber Mfg. Company	South River Water Department	Shore River	170	5-8-20
Trenton	American Steel & Wire Company	Trenton Water Department	Pond	8	4-2-20
Trenton	Crescent Insulated Wire & Cable Company	Trenton Water Department	Pond	24	1-8-20
Trenton	Pugeton Wooded Mills, Inc.	Trenton Water Department	Assunpink Creek and Delaware and Raritan Canal	154	6-7-20
Trenton	Public Service Electric & Gas Company	Trenton Water Department	Assunpink Creek	70	4-2-20
Trenton	Public Service Electric & Gas Company	Trenton Water Department	Assunpink Creek	154	7-7-31
Trenton	Public Senting Company (formerly N. J. Seat- ing Co.) (originally N. J. School Furniture Co.)	Trenton Water Department	Delaware River and Sunhtran Creek	140	1-6-31
Trenton	John A. Reebing's Sons Company	Trenton Water Department	Cistern	152	0-2-31
Trenton	John A. Reebing's Sons Company	Trenton Water Department	Delaware and Raritan Canal	27	1-8-20
Trenton	John Stokes Rubber Company	Trenton Water Department	Delaware and Raritan Canal	28	1-8-20
Union City	Schwabenhausen Inc. (Company)	Hickensack Water Company	Assunpink Creek	49	1-8-20
West Orange	Thomas A. Edison, Inc.	Commonwealth Water Company	city water cistern	139	5-6-30
West Orange	Montclair Golf Club	Commonwealth Water Company	Assunpink wells	100	4-2-20
Whitman	Northam Silk Hosiery Co., Inc.	Whitman Water Department	Well	162	6-8-30
Whitman		Whitman Water Department	Rockaway River	100	0-2-31
Whitman		Whitman Water Department	Rockaway River	82	4-2-20

No. 14—WATER SUPPLIES NOT NOW RECOGNIZED AS PUBLIC POTABLE  
WATER SUPPLIES PURSUANT TO THE RESOLUTION  
ADOPTED ON JANUARY 10, 1933.

The Department of Health of the State of New Jersey at a meeting held on January 10, 1933, adopted a preamble and resolution in which, based upon an opinion from the Attorney-General, it was resolved that "in order for sources of water supplies to be considered as public potable water supplies, they must represent sources of supply from which water is distributed or sold to consumers for potable purposes in eight or more dwellings and/or properties, and where water from sources of supplies is distributed or sold to less than said number of dwellings and/or properties such supplies will hereafter be considered as private sources of water supplies and which supplies come within the jurisdiction of local boards of health having control over the territory wherein such supplies are located." The following tabulation shows the supplies removed from the public potable water supply list from July 1, 1938, to June 30, 1939:

Location	Owner	Source of Supply
Helmetta (Jamesburg Section)	Property Owners Cooperative Association	1 driven well, 224' deep
Montville Twp.	Plausha Park Land Co.	1 driven well, 200' deep
Newfield	Charles C. Ober	1 driven well, 26' deep

No. 15—WATER SUPPLIES ABANDONED FROM JULY 1, 1938, TO  
JUNE 30, 1939.

Location	Owner	Source of Supply
Dover Twp., Normandy Beach Section	J. Milton Slim (Coast and Inland Development Co.)	1 driven well, 1038' deep
Middletown Twp.	Water Witch Club	4 driven wells, 140-225' deep

No. 16—PRIVATE SUPPLIES.

Seventy-eight samples of water from private sources of supply have been examined in the laboratory and payment to the amount of \$735.00 has been made therefor through the Bureau of Engineering, which forwards and interprets the results obtained in the examination of such samples.

A charge of \$15 is made by the Department for a complete chemical and bacteriological examination of a sample of water and a charge of \$5 for a bacteriological examination.

No. 17—ESTABLISHMENT OF FACTORIES ON WATERSHEDS.

During the year, under the provisions of Chapter 280, Laws of 1921 (known now as Section 58:10-17 to 58:10-21), the following applications were approved for the construction of industrial plants upon watersheds in the State:

- No. 158—Orange (Abbott-Hogan, Inc.)—plant for cleaning clothes.  
 No. 159—Union Twp. (Clemens Manufacturing Co.)—plant for the manufacture of church pews, tables, chairs, school furniture and other articles of wood.  
 No. 160—Orange (Talens School Products Manufacturing Co.)—plant for the manufacture of water colors and wax crayons.  
 No. 161—Orange (Hand Craft Corp.)—plant for the manufacture of rugs.  
 No. 162—Ewing Twp. (Luscombe Airplane Corp.)—plant for the manufacture of metal airplanes.

No. 18—SCHOOL SUPPLIES.

Six hundred and ninety-three samples of water have been examined in the laboratory of the Bureau of Chemistry from rural school water supplies in the State during the year and copies of the results of these examinations have been sent to the local school boards, as well as the State Board of Education, through this Bureau, with comments where necessary as to the purity of the supplies. This work has been supplemented by field investigations which have been made upon the request of interested school officials.

## No. 19—PUBLIC POTABLE WATER SUPPLIES IN NEW JERSEY.

"How much water do the people of New Jersey drink in a year?" That question was submitted to the Department through a popular radio program. It was easily answered by a rough estimate and in the spirit in which it was submitted. Most questions reaching the Department concerning water supply are not so easily answered. Prospective home owners, vacationists at our recreation centers, tourists, industrial promoters, magazine editors, the press, other government agencies, all are represented among the petitioners for information about the State's public potable water supplies. The volume of such requests is increasing rapidly. The apparent widespread interest indicates that the public is becoming more concerned with the quality of its water supply. The Department aims to reply to all reasonable requests for such data. To be able to do so requires the maintenance of an up-to-date record for ready reference or repeated searching of voluminous files.

The ever-increasing need for a detailed record in a simplified form led the Bureau to the establishment of a public potable water supply inventory. Adding impetus to the movement was the enactment in 1938 of the supplement to the water and sewage treatment plant licensing law. The supplement brought under the licensing act all "water supply systems," whereas the original act was limited to treatment and purification plants. Thus the Department was obliged to become interested in the water supply systems from the sources of the water to the ultimate distribution, even in instances where there was maintained only a distribution or transmission system, the water being purchased from another purveyor. The inventory was expanded to include all water supply systems.

To secure uniformity in the inventory a questionnaire embodying suggestions of every member of the technical staff of the Bureau was drawn. The questionnaire was comprised of four forms, known as A, B, C and D, each having a specific purpose. Form "A" was a General Information Sheet, applying to all water supply systems and including information such as water consumption, seasonal influences, the ownership of the distribution system in each municipality served, the extent to which services are metered, storage facilities, inter-connections with other water supplies (public and private), a list of the municipalities

served, the number of service connections and estimated population served in each, and the method of financing the service. Form "B" applied only to a well supply and included details on the source, the treatment and purification processes, and units employed and the laboratory control exercised. Forms "C" and "D" were similar to Form "B" and applied only to surface and spring supplies respectively. Despite every effort toward condensation and simplicity the questionnaire was truly a formidable document.

The data was collected and recorded on the forms by the engineering staff in conjunction with routine field assignments in so far as such a canvass was practical. The field survey was directed especially toward the smaller supplies where there was no technical supervision.

Augmenting the field survey the questionnaires were mailed to the licensed operators or other recognized authorities. A cover letter explained the purpose of the inventory and was written as a personal appeal for co-operation. The Department's authority for requesting such information was not cited; nor was there any suggestion of such authority. Ninety-eight percent of the questionnaires were completed and returned within ninety days. The Bureau takes great pleasure in expressing its gratitude to the operators and superintendents, without whose co-operation the inventory could not have been made.

The tabulation "Public Potable Water Supplies in New Jersey" and the statistics listed below are based exclusively upon the data obtained through the questionnaire. They include factors generally of most interest to the public. They represent only a small part of the data included in the inventory.

It should be emphasized that within the metropolitan area from Elizabeth to Paterson there are inter-connections between the State's largest water supplies such as make any separation between service areas little more than a guess. The source of supply for some areas undoubtedly varies from day to day. This situation has influenced the Population Data recorded below. Some petitions to the Department have sought to single out municipalities and populations served with waters from different sources. Such data are impossible to obtain in some instances. Some of the largest supplies are obtained from both surface and ground sources and the waters are mixed in the distribution system or even at the treatment plants. The distinction between population served by pub-

licly and privately owned systems will also bear comment. Note that the word "systems," not "supplies" is used in this case. The distinction is made between the source of supply and the distribution system delivering the water for consumption. Thus the population of the City of Elizabeth is included in the 2.76 million people served by publicly owned systems. Reference to the tabulation shows that the distribution system in Elizabeth is owned by the city; that the water is obtained from two privately owned and one publicly owned supply. Thus it is possible to determine that Elizabeth is served by a publicly owned system but any attempt to determine how much of the population receives water from each of the sources of supply is utterly hopeless.

An interesting illustration of the complications confronted in assembling the inventory is the City of Clifton. No information had been obtained from this municipality at the time the tabulation was compiled but all that remained to be obtained from that source was confirmation of a few details. Other sources supplied enough information to give a comprehensive picture of the situation. Clifton owns a share in the Wanaque system of the North Jersey District Water Supply Commission and through that ownership is served in part directly by the Passaic Valley Water Commission. The city also owns and operates a system through which it distributes water purchased at wholesale from the Passaic Valley Water Commission, the Town of Montclair, and the City of Jersey City. In addition to areas served by systems owned and operated by the city and the Passaic Valley Water Commission there are sections of Clifton which are served directly by the towns of Montclair and Nutley.

The inventory is the most complete record of simultaneous data on public potable water supplies ever assembled by the Department. It is believed to be as accurate and as complete as it is practical to compile. It should be possible to make the inventory a valuable reference for many years to come. Most of the data are of a semi-permanent nature at least. Other factors will change. The value of the inventory will be dependent largely upon the simplicity and efficiency of the method devised to keep the record current. With this in mind a simplified filing system was established. A visible index card file will house the complete record. There will be a card for each source of supply and each water supply system in the state. The card will be of adequate size to provide for all

details including extra space for natural changes. Thus it will be possible by glancing at a single card of standard letter size to obtain a comprehensive picture of any water supply. The simplicity of the original record should prove to be the basis of a simple method of maintaining a current inventory.

## PUBLIC POTABLE WATER SUPPLIES IN NEW JERSEY

1939 INVENTORY AS OF JUNE 30, 1939

Water Supply Systems:			
Which include a source of supply .....			283
Which do not include a source of supply* .....			53
Total systems .....			336
Water Supply Systems:			
Publicly owned .....			184
Privately owned .....			152
Total .....			336
Water Supply Systems Which Include a Source of Supply:			
Publicly owned .....			142
Privately owned .....			141
Total .....			283
Established Sources of Supply:			
	<i>Treated and/or Purified*</i>	<i>Not Treated or Purified*</i>	<i>Total</i>
Well supplies .....	155	153	308
Spring supplies .....	16	11	27
Infiltration galleries .....	3	0	3
Surface supplies .....	61	0	61
Total .....	235	164	399
Treatment and/or Purification Plants Employing:			
Prolonged storage .....			24
Algae control .....			46
Aeration .....			60
Coagulation .....			35
Slow sand filters .....			7
Rapid sand filters .....			28

\*Water is obtained from another purveyor.

\*By one or more processes indicated below.

Pressure filters .....	30
Iron removal .....	30
Softening .....	1
pH Control for corrosiveness .....	34
Activated carbon .....	14
Ammoniation .....	35
Chlorination .....	162
<b>Population Data:</b>	
	<i>Million</i>
Served by publicly owned systems .....	2.76
Served by privately owned systems .....	1.16
Total .....	3.92
Served with water treated and/or purified* .....	3.55
Served with water not treated or purified* .....	.37
Total .....	3.92
Served with ground water exclusively .....	1.11
Served with surface water exclusively .....	2.15
Served with mixed water .....	.66
Total .....	3.92
<b>Municipalities:</b>	
Served in whole or in part .....	456
Not served .....	114
Total .....	570
<b>Consumption Data (1938):</b>	
	<i>M.G.D.</i>
From publicly owned systems .....	300
From privately owned systems .....	95
Total .....	395
From surface supplies .....	272
From ground supplies .....	123
Total .....	395
Treated and/or purified* .....	353
Not treated or purified* .....	42
Total .....	395
Chlorinated .....	330
Not chlorinated .....	65
Total .....	395

\*By one or more processes listed.





Table with columns: MUNICIPALITY-COUNTY OWNER OF SUPPLY MUNICIPALITIES SERVED, SERVICE (CONNECTIONS, POPULATION, CONSUMPTION M.G.D.), LOCAL NAME OF SUPPLY, SOURCE OF SUPPLY, USE (Regular, Seasonal, Occasional, Emergency), LOCAL LABORATORY CONTROL, DATE SUPPLY ESTABLISHED, and TREATMENT OR PURIFICATION (Prolonged Storage, Aeration, Taste-Odor Control, Prechlorination, Preliminary Sedimentation, Coagulation, Sedimentation, Slow Sand Filters, Rapid Sand Filters, Pressure Filters, Post Chlorination, Ammonification, pH Control, Algae Control, Iron Removal).

\* See tabulation of supplies having marked seasonal variation in consumption and population served.









Table with columns: MUNICIPALITY-COUNTY OWNER OF SUPPLY MUNICIPALITIES SERVED, SERVICE (CONNECTIONS, POPULATION, CONSUMPTION M.G.D.), LOCAL NAME OF SUPPLY, SOURCE OF SUPPLY, USE (Regular, Seasonal, Occasional, Emergency), LOCAL LABORATORY CONTROL, DATE SUPPLY ESTABLISHED, and TREATMENT OR PURIFICATION (Prolonged Storage, Aeration, Taste-Odor Control, etc.).

\* See tabulation of supplies having marked seasonal variation in consumption and population served.











Table with columns: SERVICE (CONNECTIONS, POPULATION, CONSUMPTION M.G.D.), LOCAL NAME OF SUPPLY, SOURCE OF SUPPLY, USE (Regular, Seasonal, Occasional, Emergency), LOCAL LABORATORY CONTROL, DATE SUPPLY ESTABLISHED, TREATMENT OR PURIFICATION (Aeration, Taste-Odor Control, Precipitation, Preliminary Sedimentation, Coagulation, Settlement, Slow Sand Filters, Rapid Sand Filters, Pressure Filters, Post-Chlorination, Ammonification, pH Control, Algae Control, Iron Removal).

\* See tabulation of supplies having marked seasonal variation in consumption and population served.

No. 20—PUBLIC POTABLE WATER SUPPLIES IN NEW JERSEY—Continued

MUNICIPALITY—COUNTY OWNER OF SUPPLY MUNICIPALITIES SERVED	SERVICE		CONSUMPTION M.G.D.	LOCAL NAME OF SUPPLY	SOURCE OF SUPPLY	USE				LOCAL LABORATORY CONTROL	DATE SUPPLY ESTABLISHED	TREATMENT OR PURIFICATION											
	CONNECTIONS	POPULATION				Regular	Seasonal	Occasional	Emergency			Prolonged Storage	Aeration	Taste-Odor Control	Prechlorination	Preliminary Sedimentation	Coagulation	Sedimentation	Slow Sand Filters	Rapid Sand Filters	Pressure Filters	Post Chlorination	Ammoniation
White Township (Warren) See Belvidere (Buckhorn Springs Water Co.)																							
White Horse Supplies See Hamilton Township (Mercer)																							
Wildwood City (Cape May) Municipality			*	Rio Grande Station	28 wells, 47-523' deep, 6-16" dia.	x				None	1910		x										
Wildwood North Wildwood	2,969 1,762	*5,000 *2,000		Pine and New Jersey Aves.	2 wells, 364-700' deep, 8-10" dia.		x			None	1896-1927		x										
Wildwood Crest West Wildwood (wholesale) Middle Township	766 148	* 650 * 500		6th and New Jersey Ave.	3 wells, 125-350' deep, 6" dia.				x	None	1902					None							
Wildwood Crest Borough (Cape May) See Wildwood																							
Williamstown See Monroe Township																							
Willingboro Township (Burlington)		No public water supply																					
Winslow Township (Camden)		No public water supply																					
Woodbine Borough (Cape May) Woodbine			.070	Woodbine Water Co.	4 wells, 168' deep, 8" dia.	x				None				x	x								x
Woodbridge Township (Middlesex) Middlesex Water Co.			5.84	Park Avenue Wells	17 wells, 300' deep, 8-12" dia.	x				None	1912												
Carteret Clark Township (part) Metuchen	1,945 10 1,638	13,389 50 5,748		South Plainfield Wells	12 wells, 250' deep, 12" dia.				x	None	1888												
Rahway (part) Raritan Township (part) South Plainfield (part) Woodbridge Township (part)	4 873 452 5,048	20 4,725 3,347 28,846		Robinson's Branch	Robinson's Branch Rahway River	x				Bacteriological and chemical—Daily	1907	x		x	x		x	x	x				x
Woodbridge Township (Middlesex) Municipality Woodbridge Township (Keasbey Section)				Municipal	Buys water from Perth Amboy	x																	
Woodbury City (Gloucester) Municipality Woodbury Woodbury Heights (part) Woodbury Heights Water Co. (wholesale)			.618	Municipal	2 wells, 315-317' deep, 16" dia.	x				None	1934-'36												
Woodbury Heights Borough (Gloucester) Woodbury Heights Water Co. Woodbury Heights (part)				Woodbury Heights Water Co.	Buy water from City of Woodbury	x																	
Woodcliff Lake Borough (Bergen) See Park Ridge (Municipal)																							
Woodland Township (Burlington) Woodlawn Borough (Camden) See Collingswood (Municipal)																							
Wood-Ridge Borough (Bergen) See New Milford (Hackensack Water Co.)																							
Woodstown Borough (Salem) Municipality Woodstown			.098	Municipal	6 wells, 160' deep 1 well, 706' deep, 8" dia.	x x				None None	1892 1928					None None							
Woolwich Township (Gloucester) Wrightstown Borough (Burlington) Hanover Water Co. Wrightstown				Hanover Water Co.	2 wells, 312' deep, 6-8" dia.	x				None	1918					None							
Wyckoff Township (Bergen) Hooker I. Coggeshall Wyckoff Township (part)			.002	Coggeshall Supply	1 well, 225' deep, 6" dia.	x				None	1926												
Wyckoff Township (Bergen) Also see Hawthorne (Municipal) Also see Ridgewood (Municipal)																							

\* See tabulation of supplies having marked seasonal variation in consumption and population served.

## PUBLIC POTABLE WATER SUPPLIES HAVING MARKED SEASONAL VARIATION IN CONSUMPTION AND POPULATION SERVED

MUNICIPALITY—COUNTY OWNER MUNICIPALITIES SERVED	POPULATION SERVED		CONSUMPTION	
	Summer	Winter	Summer M.G.D.	Winter M.G.D.
Allenhurst Borough (Monmouth)				
Municipality .....			.453	.053
Allenhurst .....	3,500	700	.....	.....
Ocean Township (part) .....		50	.....	.....
Asbury Park City (Monmouth)				
Municipality .....			2.5	1.0
Asbury Park (part) .....	61,000	12,500	.....	.....
Neptune Township (part) .....			.....	.....
Atlantic City (Atlantic)				
Municipality .....			14.7	10.4
Atlantic City .....	250,000	65,748	.....	.....
Atlantic Highlands (Monmouth)				
Municipality .....			.400	.150
Atlantic Highlands .....		1,800	.....	.....
Avalon Borough (Cape May)				
Municipality .....			.375	.090
Avalon .....	4,500	400	.....	.....
Avon-by-the-Sea Borough (Monmouth)				
Municipality .....				
Avon-by-the-Sea .....			No information received	
Barnegat City Borough (Ocean)				
Municipality .....			.012	.004
Barnegat City .....	350	200	.....	.....
Bay Head Borough (Ocean)				
Ocean County Water Co. ....			.751	.139
Bay Head .....	9,000	450	.....	.....
Mantoloking .....	2,500	50	.....	.....
Brick Township (part) .....		700	.....	.....
Dover Township (part) .....	500		.....	.....
Belmar Borough (Monmouth)				
Municipality .....			1.0	.400
Belmar .....	30,000	3,500	.....	.....
South Belmar .....	5,000	900	.....	.....
Wall Township (part) .....	1,000	600	.....	.....
Brielle Borough (Monmouth)				
Municipality .....			.105	.050
Brielle .....		700	.....	.....
Brigantine City (Atlantic)				
Municipality .....			.280	.100
Brigantine .....		525	.....	.....
Byram Township (Sussex)				
Briar Hts. and Della Hts. Property Owners Assn. ....			.002	0
Byram Township (Cranberry Lake) .....	90	0	.....	.....
Byram Township (Sussex)				
Frenches Grove Water Co. ....			.002	0
Byram Township (Cranberry Lake) .....	160	0	.....	.....
Byram Township (Sussex)				
Strawberry Point Property Owners Assn. ....			.002	0
Byram Township (Cranberry Lake) .....	63	0	.....	.....
Cape May City (Cape May)				
Municipality .....			.700	1.9
Cape May City .....	20,000	2,637	.....	.....
Lower Township (part) .....			.....	.....
South Cape May .....		25	.....	.....
West Cape May .....	1,200	1,048	.....	.....

## PUBLIC POTABLE WATER SUPPLIES HAVING MARKED SEASONAL VARIATION IN CONSUMPTION AND POPULATION SERVED—Continued

MUNICIPALITY—COUNTY OWNER MUNICIPALITIES SERVED	POPULATION SERVED		CONSUMPTION	
	Summer	Winter	Summer M.G.D.	Winter M.G.D.
Cape May Point Borough (Cape May)				
Municipality			.081	.039
Cape May Point	3,000	250		
Lower Township (part)	15	13		
Downe Township (Cumberland)				
Estate of Herbert Garrison			.005	.0002
Downe Township (Fortescue)	100	25		
Downe Township (Cumberland)				
Leslie Haines			.010	.001
Downe Township (Fortescue)	300	30		
Downe Township (Cumberland)				
J. C. Remington			.010	.001
Downe Township (Fortescue)	250	25		
Harvey Cedars Borough (Ocean)				
Municipality			.010	.005
Harvey Cedars				
Long Beach Township (part)				
Highlands Borough (Monmouth)				
Municipality			.600	.300
Highlands	15,000	2,500		
Hopatcong Borough (Sussex)				
Morris & Sussex Water Service, Inc.			.005	0
Hopatcong (Hopatcong Park Est.)	200	0		
Island Heights Borough				
Municipality				
Island Heights	3,500	300	.270	.023
Jefferson Township (Morris)				
Cozy Lake Estates			.007	0
Jefferson Township (Cozy Lake)				
Jefferson Township (Morris)				
Prospect Point Water Co.			.009	0
Jefferson Township (Prospect Point—Lake Hopatcong)	320	0		
Keansburg Borough (Monmouth)				
Municipality			1.25	.500
Keansburg	30,000	2,500		
West Keansburg Water Co. (wholesale)				
Lakewood Township (Ocean)				
Lakewood Water Company			.250	.625
Lakewood Township (part)	7,865	35,000		
Lavallette Borough (Ocean)				
Municipality			.250	.050
Lavallette	3,000	550		
Dover Township (West Point Island)	50			
Lincoln Park Borough (Morris)				
Mountain Heights Water Co.				
Lincoln Park (part)	50	0		
Long Beach Township (Ocean)				
Municipality			.020	.002
Long Beach Township (below Beach Haven)				
Long Beach Township (Ocean)				
Long Beach Water Co.			.180	.110
Long Beach Township (part)	3,000	400		

## PUBLIC POTABLE WATER SUPPLIES HAVING MARKED SEASONAL VARIATION IN CONSUMPTION AND POPULATION SERVED—Continued

MUNICIPALITY—COUNTY OWNER MUNICIPALITIES SERVED	POPULATION SERVED		CONSUMPTION	
	Summer	Winter	Summer M.G.D.	Winter M.G.D.
Long Branch City (Monmouth)				
Monmouth Cons. Water Co.			9.0	4.0
Asbury Park (part)				
Bradley Beach	9,000	5,500		
Deal	30,000	3,400		
Eatontown	3,000	900		
Fairhaven (part)	2,200	2,200		
Interlaken	3,000	2,800		
Little Silver	750	850		
Long Branch	1,700	1,500		
Middletown Township (part)	49,000	20,000		
Monmouth Beach	20,000	12,000		
Neptune City	2,500	400		
Neptune Township (including Ocean Grove)	3,000	2,500		
Ocean Township	63,000	12,000		
Oceanport	4,500	3,500		
Red Bank (part)	3,000	2,200		
Rumson	100	100		
Sea Bright	4,000	2,500		
Shrewsbury Township	1,200	1,100		
Shrewsbury Borough	850	800		
West Long Branch	2,100	2,600		
Longport Borough (Atlantic)				
Municipality				
Longport	2,500	350	.127	.068
Manasquan Borough (Monmouth)				
Municipality			.400	.225
Manasquan	10,000	2,920		
Margate City (Atlantic)				
Municipality				
Margate City		3,300		.221
Matawan Borough (Monmouth)				
Municipality				
Matawan Township (part)		3,000		
Matawan Township (Monmouth)				
Cliffwood Beach Water Co.	2,000	400	.081	.023
Matawan Township (Cliffwood Beach section)				
Madison Township (Cliffwood Beach section)				
Medford Township (Burlington)				
Estate of Thomas Murray			.004	0
Medford Township (Taunton Lakes)	100	0		
Middletown Township (Monmouth)				
Ideal Beach Water Co.			.225	.025
Middletown Township (Ideal Beach)	5,000	1,500		
Mt. Arlington Borough (Morris)				
Helen T. Cronin			.002	0
Mt. Arlington (part)	40	0		
Mt. Arlington Borough (Morris)				
Morris & Sussex Water Service, Inc.			.005	0
Mt. Arlington (Lake Rogerene)	350	0		
Mt. Olive Township (Morris)				
Budd Lake Manor Corp.				
Mt. Olive Township (Budd Lake)	70	0		
Mt. Olive Township (Morris)				
Estate of Aaron S. Hulse			.001	.0003
Mt. Olive Township (part)	40	10		
Mt. Olive Township (Morris)				
Pinecrest Improvement Assn.			.015	0
Mt. Olive Township (Budd Lake)	300	0		

PUBLIC POTABLE WATER SUPPLIES HAVING MARKED SEASONAL VARIATION IN  
CONSUMPTION AND POPULATION SERVED—Continued

MUNICIPALITY—COUNTY OWNER MUNICIPALITIES SERVED	POPULATION SERVED		CONSUMPTION	
	Summer	Winter	Summer M.G.D.	Winter M.G.D.
Mt. Olive Township (Morris)	.....	.....	.010	0
Arthur Reid .....	.....	.....	.....	.....
Mt. Olive Township (Budd Lake)	80	0	.....	.....
Mt. Olive Township (Morris)	.....	.....	.018	0
Stonwald Park Assn., Inc. ....	.....	.....	.....	.....
Mt. Olive Township (Budd Lake)	90	0	.....	.....
Mt. Olive Township (Morris)	.....	.....	.014	.008
West Jersey Water Service, Inc. ....	.....	.....	.....	.....
Mt. Olive Township (Country Club Est., Budd Lake)	400	.....	.....	.....
Oakland Borough (Bergen)	.....	.....	.025	.014
Municipality .....	.....	.....	.....	.....
Oakland .....	2,000	700	.....	.....
Ocean City (Cape May)	.....	.....	1.57	.373
Ocean City Water Service Co. ....	.....	.....	.....	.....
Ocean City .....	85,000	5,500	.....	.....
Ocean Gate Borough (Ocean)	.....	.....	.066	.033
Municipality .....	.....	.....	.....	.....
Ocean Gate .....	1,880	200	.....	.....
Berkeley Township (part) .....	60	.....	.....	.....
Passaic Township (Morris)	.....	.....	.002	.....
Small Farms Association .....	.....	.....	.....	.....
Passaic Township (Homestead Park Township)	.....	.....	.....	.....
Pemberton Township (Burlington)	.....	.....	.090	.064
Brown's Mills Land Co., Inc., Water Department	.....	.....	.....	.....
Pemberton Township (Brown's Mills)	450	.....	.....	.....
Pitman Borough (Gloucester)	.....	.....	.125	.050
N. J. Conf. Camp Meeting Assn. ....	.....	.....	.....	.....
Pitman (part) .....	3,500	.....	.....	.....
Pleasantville City (Atlantic)	.....	.....	.528	.427
Atlantic Co. Water Co. of N. J. ....	.....	.....	.....	.....
Absecon .....	2,300	2,200	.....	.....
Egg Harbor Township (part) .....	600	500	.....	.....
Northfield .....	2,850	2,750	.....	.....
Linwood .....	1,600	1,500	.....	.....
Pleasantville .....	12,000	11,650	.....	.....
Somers Point .....	2,150	1,800	.....	.....
Point Pleasant Borough (Ocean)	.....	.....	.250	.090
Municipality .....	.....	.....	.....	.....
Point Pleasant .....	.....	2,500	.....	.....
Point Pleasant Beach Borough (Ocean)	.....	.....	1.5	.500
Municipality .....	.....	.....	.....	.....
Point Pleasant Beach .....	10,000	2,000	.....	.....
Princeton Borough (Mercer)	.....	.....	.780	.377
Princeton Water Co. ....	.....	.....	.....	.....
Princeton .....	9,000	12,000	.....	.....
Princeton Township (part) .....	.....	.....	.....	.....
Raritan Township (Monmouth)	.....	.....	.....	.....
West Keansburg Water Co. ....	.....	.....	.....	.....
Raritan Township .....	.....	300	.....	.....
Ringwood Borough (Passaic)	.....	.....	.092	.095
Ringwood Company .....	.....	.....	.....	.....
Ringwood (Erskine Lakes) .....	3,250	300	.....	.....
Sea Girt Borough (Monmouth)	.....	.....	.275	.078
Municipality .....	.....	.....	.....	.....
Sea Girt .....	4,000	700	.....	.....
Sea Isle City (Cape May)	.....	.....	.450	.170
Municipality .....	.....	.....	.....	.....
Sea Isle City .....	10,000	800	.....	.....

PUBLIC POTABLE WATER SUPPLIES HAVING MARKED SEASONAL VARIATION IN  
CONSUMPTION AND POPULATION SERVED—Continued

MUNICIPALITY—COUNTY OWNER MUNICIPALITIES SERVED	POPULATION SERVED		CONSUMPTION	
	Summer	Winter	Summer M.G.D.	Winter M.G.D.
Seaside Heights Borough (Ocean)	.....	.....	.400	.100
Municipality .....	.....	.....	.....	.....
Seaside Heights .....	6,500	600	.....	.....
Seaside Park (Ocean)	.....	.....	.392	.190
Municipality .....	.....	.....	.....	.....
Seaside Park .....	8,000	700	.....	.....
Ship Bottom-Beach Arlington Borough (Ocean)	.....	.....	.130	.040
Municipality .....	.....	.....	.....	.....
Ship Bottom-Beach Arlington .....	3,500	300	.....	.....
Sparta Township (Sussex)	.....	.....	.290	.090
Lake Mohawk-Sparta Water Co. ....	.....	.....	.....	.....
Sparta Township (Lake Mohawk) .....	4,000	380	.....	.....
Byram Township (Lake Mohawk) .....	425	25	.....	.....
Spring Lake Borough (Monmouth)	.....	.....	.900	.250
Municipality .....	.....	.....	.....	.....
Spring Lake .....	20,000	2,400	.....	.....
Spring Lake Heights Borough (Monmouth)	.....	.....	.....	.....
Municipality .....	.....	.....	.....	.....
Spring Lake Heights .....	2,400	1,300	.....	.....
Stanhope Borough (Sussex)	.....	.....	.120	.080
Municipality .....	.....	.....	.....	.....
Stanhope .....	1,800	1,100	.....	.....
Stone Harbor Borough (Cape May)	.....	.....	.450	.045
Municipality .....	.....	.....	.....	.....
Stone Harbor .....	.....	400	.....	.....
Surf City Borough (Ocean)	.....	.....	.044	.028
Municipality .....	.....	.....	.....	.....
Surf City .....	.....	.....	.....	.....
Union Beach Borough (Monmouth)	.....	.....	.157	.108
Municipality .....	.....	.....	.....	.....
Union Beach .....	.....	1,883	.....	.....
Upper Township (Cape May)	.....	.....	.031	.012
Corson's Inlet Water Co. ....	.....	.....	.....	.....
Upper Township (Strathmere) .....	.....	550	.....	.....
Ventnor City (Atlantic)	.....	.....	1.7	.850
Municipality .....	.....	.....	.....	.....
Ventnor .....	.....	7,500	.....	.....
Vernon Township (Sussex)	.....	.....	.025	0
Highland Lakes Imp. Co. ....	.....	.....	.....	.....
Vernon Township (Highland Lakes) .....	1,800	0	.....	.....
Vernon Township (Sussex)	.....	.....	.082	0
Seckler & Sheppard Co. ....	.....	.....	.....	.....
Vernon Township (Lake Walkhill) .....	1,500	9	.....	.....
Washington Township (Morris)	.....	.....	.006	.001
Lula A. Birdsall .....	.....	.....	.....	.....
Washington Township .....	.....	54	.....	.....
Mansfield Township .....	.....	6	.....	.....
West Milford Township (Passaic)	.....	.....	.015	.003
Ringwood Company .....	.....	.....	.....	.....
West Milford Township (Awoosting) .....	600	10	.....	.....
West Milford Township (Passaic)	.....	.....	.045	0
Pinecliff Realty Co. ....	.....	.....	.....	.....
Pinecliff Lake section .....	800	0	.....	.....
West Wildwood (Cape May)	.....	.....	.....	.....
Municipal .....	.....	.....	.....	.....
West Wildwood .....	3,600	.....	.....	.....
Wildwood City (Cape May)	.....	.....	4.2	.500
Municipality .....	.....	.....	.....	.....
Wildwood .....	100,000	5,000	.....	.....
North Wildwood .....	15,000	2,000	.....	.....
Wildwood Crest .....	10,000	650	.....	.....
West Wildwood (wholesale) .....	.....	.....	.....	.....
Middle Township .....	2,000	600	.....	.....



NO. 21—ANALYSES OF WATERS FROM PUBLIC POTABLE WATER SUPPLIES IN NEW JERSEY

MUNICIPALITY—COUNTY OWNER OF SUPPLY	Color	Odor	Turbidity	Iron	pH	Total Solids	Appearance on Filtration	Oxygen Consumed	Free Ammonia	Nitrites	Nitrates	Chlorides	Alkalinity	Total Hardness
Albion Borough (Bergen) Municipality	0	0	0	.40	7.9	163	No Char	1.1	0	.032	0	7.0	81.0	166.0
Allenhurst Borough (Monmouth) Municipality	0	0	0	0	7.15	139	No Char	0.2	0	0	.16	0.5	74.5	92.0
Alpena Borough (Monmouth) Municipality	0	0	0	.30	0.12	107	No Char	1.0	.048	.048	0	14.0	9.0	80.0
Alpha Borough (Warren) Municipality	0	0	10	.30	7.62	164	No Char	0.1	.008	.048	0	3.5	101.0	148.0
Anderson Borough (Sussex) Municipality	0	1y	0	0	7.4	203	No Char	0.4	0	.048	.002	2.5	142.0	185.0
Asbury Park City (Monmouth) Municipality	10	0	10	.60	7.13	61	No Char	0.2	.040	.048	.002	0.4	28.0	44.0
Atlantic City (Atlantic) Hotel Breakers	0	0	0	.40	5.10	61	Slt Char	2.5	.016	.018	0	11.0	0	14.0
Hotel Brighton	0	0	0	.20	7.79	185	No Char	1.3	.048	.008	.022	12.0	26.0	34.0
Hotel Bradford	0	0	0	0	7.69	133	Slt Char	0	0	.024	.001	10.0	0	10.0
Hotel Brookton	0	0	0	0	7.92	246	No Char	3.0	0	0	2.00	10.0	30.0	34.0
Marlborough-Blenheim	16	0	10	.30	7.0	43	No Char	0.9	.144	.016	.001	34.0	87.0	30.0
Hotel Traymore	0	0	0	.30	7.0	131	No Char	0.9	.152	.032	.001	11.0	64.0	20.0
Hotel Venida	0	0	0	.30	7.52	151	No Char	1.3	.168	.024	0	20.0	65.0	34.0
Atlantic Highlands Borough (Monmouth) Municipality	30	H <sub>2</sub> S	18.0	5.2	7.05	116	No Char	.40	.016	0	0	6.0	56.0	70.0
Arcata Borough (Cape May) Municipality	0	0	0	0	7.3	108	No Char	0.7	.240	.048	0	36.0	89.0	44.0
Avon-by-the-Sea (Monmouth) Municipality	0	0	0	.14	7.47	132	No Char	0.9	.128	.032	.003	0	78.0	102.0
Bay Head Borough (Ocean) Ocean County Water Co. Bay Head Supply	0	0	0	.20	7.72	168	No Char	0.7	.160	.032	.120	0.5	63.0	78.0
Bay Head Supply	0	0	0	.70	6.58	76	Slt Char	3.4	.160	.004	0	11.0	31.0	30.0
Bay Head Supply	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Normandy Beach Supply	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Barnegat City Borough (Ocean) Municipality	0	0	0	.40	7.48	129	No Char	0.9	.008	0	.002	1.0	94.0	66.0
Beach Haven Borough (Ocean) Municipality	0	0	0	.10	6.82	61	No Char	0.3	0	.002	.001	0	21.0	20.0
Bedminster Township (Somerset) Fifersville Water Co.	10	0	10.6	.18	7.05	74	No Char	1.0	.002	.004	0	1.00	16.5	40.0
Bellevue Borough (Camden) Orchard Terrace Water Co.	25	0	16.5	.00	6.7	138	No Char	0.6	.000	.048	0	.08	87.0	90.0
Belmar Borough (Monmouth) Municipality	0	0	0	.60	7.60	98	No Char	0.5	.100	.032	.003	0.4	73.0	86.0
Belvidere Town (Warren) Buckhorn Springs Water Co.	0	0	0	0	6.85	65	No Char	0.4	.008	.032	0	.08	17.0	24.0
Beula Borough (Camden) Municipality	0	0	2.5	.12	6.5	117	Slt Char	1.2	.008	.016	.003	1.20	32.0	43.0
Bernardville Borough (Somerset) Bernards Water Co.	0	0	0	0	7.70	103	No Char	1.5	0	.048	0	7.0	25.0	50.0
Beverly City (Burlington) DeLaware River Water Co.	0	0	0	.40	6.2	121	No Char	0.6	.240	.018	0	7.0	26.0	74.0
Blair Academy Water Co. Blair Academy Water Co.	0	0	0	.12	8.08	290	No Char	0.5	.056	.018	.008	4.0	137.0	156.0
Bloombury Borough (Hunterdon) Municipality	0	0	0	0	6.65	118	No Char	1.0	.032	.004	.001	1.00	23.0	68.0
Bogaert Borough (Bergen) Bogaert Water Co.	10	0	0	.30	7.5	295	No Char	0.3	0	.001	5.0	8.0	111.0	170.0
Boonton Town (Morris) Municipality	0	1e	0	.30	7.35	49	No Char	2.5	.048	.120	.002	.00	17.0	32.0
Bordentown City (Burlington) Municipality	0	0	0	.10	5.1	78	No Char	0.1	.008	.025	2.50	9.5	0	20.0
Bound Brook Borough (Somerset) Bound Brook Water Co.	0	1y	0	.70	7.0	121	No Char	1.6	0	.048	.014	4.5	41.0	64.0

No. 21—ANALYSES OF WATERS FROM PUBLIC POTABLE WATER SUPPLIES IN NEW JERSEY—Continued

MUNICIPALITY—COUNTY OWNER OF SUPPLY	Color	Odor	Turbidity	Iron	pH	Total Solids	Appearance on filtration	Oxygen Consumed	Free Ammonia	Aluminum	Nitrites	Nitrates	Chlorides	Alkalinity	Total Hardness
Branchville Borough (Sussex) Municipality	100	0	28	2.0	7.25	81	No Char	5.0	.464	.108	.085	.12	7.5	22.0	86.0
Bridgeton City (Cumberland) Municipality	0	1m	0	.70	8.0	53	No Char	0	.008	.048	.001	1.20	7.0	(acidity) 6.0	28.0
Ch. of Well No. 2	0	0	0	0	5.7	46	No Char	0.3	.032	.048	.002	2.0	6.0	0	35.6
Summit Lake	0	0	2.5	.20	6.0	78	No Char	1.3	.072	.082	.001	1.0	9.0	4.0	24.0
Owens-Illinois Glass Co.	0	oily	0	.50	5.0	72	No Char	0	0	.052	.002	5.00	11.5	0	24.0
Bechtels Borough (Monmouth) Municipality	0	0	0	.70	7.01	38	No Char	1.1	.008	.008	0	0	8.0	37.0	6.0
Brigantine City (Atlantic) Municipality	30	0	13.0	.60	7.33	125	Slt Char	1.0	.004	.032	0	.04	6.0	20.0	14.0
Brookhaven Borough (Camden) Municipality	0	0	0	1.60	6.29	108	Char	0.4	.048	.048	.000	.08	7.0	78.0	102.0
Burlington City (Burlington) Municipality	10	Char	10	2.0	7.0	114	Char	0.6	.168	.048	.001	.80	6.0	14.0	44.0
Butler Borough (Morris) Municipality	20	0	3.5	.60	6.98	57	Char	3.4	.008	.344	.001	0	1.0	11.0	80.0
Byram Township (Sussex) Municipality	70	0	50	3.0	6.25	140	No Char	0.8	0	.048	0	.04	4.0	70.0	100.0
Chatham Township (Morris) Municipality	20	1c	22.5	.70	6.62	170	Slt Char	...	0	.068	.011	.04	5.0	104.0	142.0
Stewartsville Property Owner's Asso- ciation	0	0	0	.14	7.7	158	No Char	0.8	0	.064	0	0	17.0	71.0	100.0
Calloway Borough (Huntendon) Calloway Water Co.	0	0	0	.20	6.35	115	No Char	1.0	.024	.008	0	5.0	5.0	21.0	50.0
Camden City (Camden) Municipality	0	0	0	.12	6.88	112	No Char	0.1	0	.008	0	4.5	11.0	16.0	52.0
Cape May City (Cape May) Municipality	0	0	0	1.20	7.5	226	Slt Char	0.1	.160	.144	.005	0	55.0	82.5	94.0
Cape May Point Borough (Cape May) Municipality	0	0	0	.60	8.01	1836	Slt Char	3.6	1.040	.008	.003	0	..	304.0	138.0
Chatham Borough (Morris) Municipality	0	0	0	.10	8.0	106	No Char	1.0	0	.032	0	2.50	6.0	84.0	122.0
Chatham Township (Morris) Chatham Colony Association	0	0	0	0	7.62	245	No Char	.2	0	.032	0	.60	7.0	54.0	92.0
Chester Borough (Morris) Spring Water Co.	0	0	0	.30	6.73	76	No Char	0.5	0	.032	0	3.5	3.0	32.0	62.0
Chester Township (Burlington) Municipality	0	Chl	0	.10	6.6	84	No Char	0.1	0	.004	0	.12	3.0	45.5	84.0
Chestertown Township (Burlington) Gussawicks Water Co.	0	3 Chl	0	.40	7.0	78	No Char	0.3	.016	.032	0	7.0	5.5	5.0	38.0
Clayton Borough (Gloucester) Municipality	0	0	0	0	6.5	125	No Char	0.1	0	.064	0	7.0	13.0	10.0	36.0
Clendenon Borough (Camden) Municipality	0	0	0	.10	7.36	305	Slt Char	0.5	.048	.032	0	.04	1.0	85.0	78.0
Clinton Town (Huntendon) Beaver Brook Water Co.	25	1c	26.5	0	7.28	75	Slt Char	1.0	.064	.064	.018	2.80	2.0	16.0	32.0
Collingswood Borough (Camden) Municipality	0	0	0	.20	7.45	100	No Char	0.1	.032	.064	0	.12	2.0	51.0	80.0
Cranbury Township (Middlesex) Cranbury Water Co.	0	0	0	.30	6.85	48	No Char	0.2	.008	.032	.001	1.00	1.0	9.0	26.0
Devon Township (Morris) Municipality	0	0	0	.30	7.21	109	No Char	0.1	0	.008	.022	.04	3.0	88.0	110.0
Dover Township (Morris) Dover Water Co.	0	0	0	0	7.88	150	No Char	.45	0	0	.003	1.60	8.0	121.0	118.0
Well Supply	0	0	0	.30	6.88	204	No Char	.35	0	.048	.002	1.0	4.0	86.0	100.0
Dover Township (Ocean) Louis River Water Co.	0	0	0	.70	7.9	90	No Char	1.0	.016	.048	.002	.32	6.5	43.0	62.0
Downe Township (Cumberland) Est. of Herbert Garrison	0	0	0	0	7.88	182	No Char	.45	.035	.048	0	0	8.0	93.0	92.0
South Forbese Well Owners Water Co. J. C. Remington	0	0	0	.10	7.9	170	No Char	0.4	.032	.048	0	0	4.0	91.0	100.0
	0	0	0	.10	7.89	170	No Char	0.5	.048	.048	0	0	4.5	90.0	102.0

No. 21—ANALYSES OF WATERS FROM PUBLIC POTABLE WATER SUPPLIES IN NEW JERSEY—Continued

MUNICIPALITY—COUNTY OWNER OF SUPPLY	Color	Odor	Turbidity	Iron	pH	Total Solids	Appearance on Ignition	Oxygen Consumed	Free Ammonia	Albuminoid Ammonia	Nitrites	Nitrates	Chlorides	Alkalinity	Total Hardness
East Greenwich Township (Gloucester) Municipality	0	0	0	.20	7.8	287	No Char	0.7	.290	.032	.004	.04	45.0	178.0	42.0
East Orange City (Essex) Municipality	0	0	0	.10	7.65	181	No Char	1.0	0	.032	.002	1.40	8.0	95.5	126.0
Eastampton Township (Burlington) H. B. Smith Machine Co.	.55	2m	22.5	2.80	7.00	100	Slt Char	0.4	.048	0	.001	.12	5.0	54.0	70.0
Egg Harbor City (Atlantic) Municipality	0	0	0	0	6.25	83	No Char	0.7	0	.048	.001	0	4.0	16.0	16.0
Elizabeth City (Union) Elizabethtown Water Co. Haritan-Millsone	0	2e	0	0	7.12	130	Char	2.1	.032	.096	.001	.60	11.0	37.0	80.0
Elmer Borough (Salem) Elmer Water Co.	0	0	0	.50	8.6	54	No Char	.15	0	.008	.001	2.5	4.5	3.5	14.0
Essex Fells Borough (Essex) Municipality	0	0	0	0	7.30	220	No Char	0.3	.032	.072	.001	1.00	7.0	74.0	132.0
No. 2 Pumping Station	0	0	0	0	6.72	81	No Char	0.7	.016	.048	.001	.04	5.0	31.0	52.0
No. 4 Pumping Station	0	0	0	0	7.49	215	No Char	0.5	0	.032	.001	4.5	21.0	70.0	135.0
Bresham Township (Burlington) Marlton Water Co.	0	0	0	.30	7.6	178	Slt Char	0.6	.008	.032	0	.04	1.0	118.0	130.0
Evings Township (Mercer) Crestmont Park Water Supply	0	2v	2.0	0	6.9	130	No Char	0.4	0	.004	.002	2.00	0.0	5.0	58.0
Fair Lawn Borough (Bergen) Municipality	0	1m	0	0	6.9	328	No Char	.25	0	.032	.001	17.0	14.0	55.0	172.0
Ferningdale Borough (Monmouth) Municipality	0	0	0	1.40	7.2	126	No Char	0.3	.032	.032	.002	0	2.0	108.0	114.0
Flemington Borough (Hunterdon) Flemington Water Co.	0	1s	0	.70	7.36	150	No Char	0.9	0	.048	0	0.6	4.0	65.0	98.0
Florence Township (Burlington) Municipality	0	0	0	0	6.12	62	No Char	0.2	0	.004	.001	3.50	6.0	3.0	24.0
John A. Roebling's Sons Co.	0	0	0	0	7.31	147	No Char	0.2	.008	.032	0	.08	0.1	66.0	100.0
Fitchburg Park Borough (Morris) Municipality	0	0	0	.10	7.15	157	No Char	0.5	.010	.032	.000	.24	8.0	98.0	118.0
Franklin Borough (Sussex) Franklin Water Co.	5	0	0	.06	...	201	ltry Char	...	.082	.128	0	.12	5.0	92.0	165.0
Franklin Lakes Borough (Bergen) Tri-Corner Realty Co.	0	0	0	.20	8.18	106	No Char	0.7	0	.032	0	2.5	3.0	50.0	90.0
Freehold Borough (Monmouth) Municipality	53	0	21	1.80	7.0	247	Char	0.5	.008	.048	0	.04	8.0	98.0	158.0
Frenchtown Borough (Hunterdon) Frenchtown Water Co.	0	Chl	0	0	7.15	190	No Char	0.8	0	.010	0	.00	6.0	104.0	128.
Garfield City (Bergen) Municipality	0	0	0	.40	8.0	222	No Char	0.2	0	.040	0	5.0	8.0	70.0	184.0
Gloucester Borough (Gloucester) Municipality	0	0	0	.40	7.88	133	No Char	0.2	.088	.088	0	.04	6.0	89.0	70.0
Glen Gardner Borough (Hunterdon) Glen Gardner Water Co.	43	0	20	1.40	7.2	57	No Char	0.6	.064	.072	.002	.20	4.0	16.0	28.0
Gloucester City (Camden) Municipality	30	0	31	1.80	7.75	106	No Char	0.1	.120	.040	0	.04	5.0	58.0	60.0
Greenwich Township (Camden) Greenwood Water Co.	0	0	0	.20	7.8	120	No Char	0.4	.240	.072	.036	0	1.0	83.0	50.0
Greenwood Real Estate Co.	0	0	0	.20	7.3	107	No Char	0.4	.088	.044	0	0	13.9	65.0	70.0
Greenwich Township (Gloucester) Municipality	0	0	0	0	6.95	275	No Char	3.7	.400	.092	4.500	14.0	25.0	49.0	144.0
E. J. du Pont de Nemours & Co.	0	0	0	0	5.48	145	No Char	0.2	0	.040	0	7.0	27.5	29.0	48.0
Greenwich Township (Warren) Stewarville Water Co.	0	Char	0	0	7.2	178	No Char	0.4	0	.004	0	1.20	8.0	91.0	134.0
Hackettstown Town (Warren) Municipality	15	5cut	4.5	.15	5.8	51	Slt Char	1.7	0	.058	0	.48	3.0	16.0	28.0
Haddonfield Borough (Camden) Municipality	35	0	33	1.2	7.25	150	No Char	0	.160	.040	.001	0	1.0	70.0	80.0

No. 31—ANALYSES OF WATERS FROM PUBLIC POTABLE WATER SUPPLIES IN NEW JERSEY—Continued

MUNICIPALITY—COUNTY OWNER OF SUPPLY	Color	Odor	Turbidity	Iron	pH	Total Solids	Appearance on Ignition	Oxygen Consumed	Free Ammonia	Albuminoid Ammonia	Nitrites	Nitrates	Chlorides	Alkalinity	Total Hardness
<b>Haddon Heights Borough (Camden)</b>															
New Jersey Water Co.	0	0	0	0	7.45	193	No Char	0.1	.016	.072	.001	.08	2.5	77.0	92.0
Main Station	0	0	0	0	7.65	194	Slt Char	0.1	.128	.062	.001	.04	4.0	21.0	194.0
Ashland Station	0	0	0	0	6.4	123	No Char	0.1	.099	.090	0	5.0	14.0	23.0	94.0
Stockton Station	0	0	0	0											
<b>Haledon Borough (Passaic)</b>															
Main Station	0	0	0	.20	7.1	125	Slt Char	1.7	.008	.072	.005	.26	6.5	23.0	72.0
Municipality	0	0	0	.16	7.5	326	No Char	0.3	0	.048	.001	3.0	11.5	204.0	144.
<b>Hamburg Borough (Sussex)</b>															
Municipality	0	0	0	1.20	7.49	77	No Char	0.5	.022	0.32	.004	0	2.5	21.0	28.0
<b>Hamilton Township (Atlantic)</b>															
Municipality	25	0	13	0											
<b>Hamilton Township (Mercer)</b>															
Hamilton Struers Water Co.	0	0	0	.10	4.95	42	No Char	0.2	0	.010	.001	2.50	6.0	0	16.0
Pearl E. Crumner	0	0	0	.80	5.82	60	No Char	0.3	.032	0	.008	6.00	5.0	0	20.0
Andrew Group	0	0	0	.90	5.5	65	No Char	0.1	.016	.018	.003	5.00	8.0	2.0	10.0
E. T. McCallister	10	0	0	.70	6.1	20	No Char	0.8	.022	.032	.001	.48	6.0	3.0	10.5
Fac. of W. V. McCallister	10	0	0	2.0	6.35	57	No Char	.20	.032	.072	.000	1.0	2.0	1.0	4.0
<b>Hamorton Town (Atlantic)</b>															
Municipality	0	0	0	.90	6.15	34	No Char	0.1	.032	.048	.001	.04	3.0	6.0	12.0
<b>Hampton Borough (Huntdon)</b>															
Water Co.	0	0	0	1.20	6.78	58	No Char	1.5	.032	.064	.002	.60	8.0	2.0	36.0
Frank Riddle	0	0	0	.12	5.62	224	No Char	0.9	.016	.048	0	7.0	12.0	32.0	94.0
<b>Hartford Township (Gloucester)</b>															
South Jersey Water Supply Co.	0	0	0	.12	7.80	498	No Char	2.9	.320	.032	.003	0	131.0	202.0	32.0
Municipality	53	0	18.0	1.40	6.78	78	No Char	0.2	.048	0	0	.08	5.0	10.0	18.0
<b>Hawthorne Borough (Passaic)</b>															
Municipality	0	0	0	.20	6.82	152	No Char	0	.016	.032	0	3.5	0.5	64.0	114.0
<b>Helmsdale Borough (Middlesex)</b>															
George W. Helme Co.	0	Arom.	0	.40	6.75	81	No Char	1.9	.064	.064	.004	1.90	10.0	18.0	46.0
<b>High Bridge Borough (Huntdon)</b>															
Municipality	0	0	0	.90	6.20	78	Slt Char	1.0	.048	.064	0	.80	2.5	20.0	32.0
<b>Highlands Borough (Monmouth)</b>															
Municipality	0	0	0	.10	6.55	218	No Char	6.1	0	.048	0	0	48.0	47.0	106.0
<b>Hightstown Borough (Mercer)</b>															
Municipality	0	1v	0	.20	8.42	49	Slt Char	.2	.000	.016	0	.040	2.0	32.5	88.0
<b>Holland Township (Huntdon)</b>															
Reigel Paper Corp.	10	0	5	.20	7.3	117	No Char	1.8	0	.048	.005	.36	5.0	84.0	72.0
<b>Hopatcong Borough (Sussex)</b>															
Morris & Sussex Water Service Inc.	0	1v	0	.30	7.5	143	No Char	0.3	0	.032	0	.08	4.0	78.0	88.0
<b>Horseshoe Borough (Mercer)</b>															
Municipality	0	0	0	0	7.0	182	No Char	0.0	0	0	.003	.36	7.0	90.0	138.0
<b>Irevington Town (Essex)</b>															
Municipality	0	0	0	.10	6.7	408	Slt Char	1.3	.008	.048	.003	7.0	25.0	108.0	320.0
<b>Island Heights Borough (Ocean)</b>															
Municipality	0	Slt	0	1.00	7.15	102	No Char	0.9	.048	0	.001	.04	6.0	54.0	6.0
<b>Jamesburg Borough (Middlesex)</b>															
Jamesburg Water Co.	0	0	0	.70	5.3	28	No Char	1.3	0	.008	.001	.60	3.0	2.0	6.0
<b>Jefferson Township (Morris)</b>															
Cog Lake Estate	0	Im	0	.14	7.08	82	No Char	0.4	0	.048	.001	.08	1.5	50.0	74.0
Prospect Point Water Co.	0	0	0	.12	7.5	60	No Char	0.3	0	.040	0	.04	2.0	22.0	50.0
<b>Jersey City (Hudson)</b>															
Municipality	10	0	0	.14	7.1	67	Slt Char	2.5	.032	.064	.001	.32	3.0	13.0	96.0
<b>Jersey Homesteads Borough (Monmouth)</b>															
Municipality	0	2v	13	.90	7.51	70	No Char	0.1	.008	.016	.001	0	1.0	53.0	60.0
<b>Kearns Borough (Monmouth)</b>															
Municipality	0	0	0	.01	6.1	46	No Char	0	.016	.024	.002	.02	2.0	14.0	28.0
<b>Keight Borough (Monmouth)</b>															
Municipality	0	0	0	5.95	25	No Char	0.3	0	.032	.002	.002	.08	1.5	7.0	18.0
<b>Lakewood Borough (Ocean)</b>															
Municipality	0	0	0	5.86	22	Slt Char	0.4	0	.016	0	0	0	4.0	2.0	12.0
<b>Lakewood Township (Ocean)</b>															
Municipality	15	0	11.5	.70	7.05	78	No Char	2.2	.048	.064	.001	.04	2.5	43.0	48.0



No. 91—ANALYSES OF WATERS FROM PUBLIC POTABLE WATER SUPPLIES IN NEW JERSEY—Continued

MUNICIPALITY—COUNTY OWNER OF SUPPLY	Color	Odor	Turbidity	Iron	pH	Total Solids	Appearance on Ignition	Oxygen Consumed	Free Ammonia	Nitrites	Nitrates	Chlorides	Alkalinity	Total Hardness
Milford Boro (Hunterdon) Municipality	0	0	0	.40	7.18	307	No Char	0.9	0	.016	.001	.60	8.0	108.0
Riegel Paper Corp.	0	0	0	.14	7.45	134	No Char	0.6	.056	.032	.001	.00	6.0	61.0
Milville City (Cumberland) Municipality	0	0	0	.60	5.90	37	No Char	0.5	.008	0	.003	0	5.0	6.0
Milville Water Co.	12.5	0	14.0	.80	4.5	60	Slt Char	17.7	.032	.144	.002	.00	5.0	16.0
Mine Hill Township (Morris) Bassett Park Association	0	0	0	0	7.0	81	No Char	0.3	.010	.040	.004	3.5	22.0	30.0
Monroe Township (Gloucester) Municipality	35	0	10	1.1	5.48	41	No Char	1.3	.236	.072	.001	2.50	4.0	6.0
Moretown Township (Burlington) Municipality	0	0	0	.10	7.15	135	Slt Char	0.1	.010	.064	.001	.60	3.5	52.0
Meristown Town (Morris) Municipality	0	0	0	.50	6.81	33	No Char	2.3	.004	.004	.003	.08	2.5	11.0
Mount Arlington Borough (Morris) Helen T. Conlin	5	0	33	.70	9.08	141	No Char	0.4	0	.064	.003	.10	3.0	47.0
Mount Holly Township (Burlington) Mount Holly Water Co.	0	0	0	.10	7.3	102	No Char	0.4	.010	.032	0	.08	3.0	78.0
Mount Olive Township (Morris) Municipality	0	0	0	0	7.2	39	No Char	0.5	0	.032	0	.12	1.5	0.5
U. H. Nicholas	0	0	0	.28	6.20	74	No Char	0.4	0	.032	0	0	2.5	12.0
Budd Lake Manor Corp.	0	2	0	.20	5.95	74	No Char	3.3	0	.034	.002	1.90	4.0	15.0
Est. of Aaron S. Hulse	0	0	0	.30	6.8	95	No Char	0.2	0	.024	.001	.04	1.0	51.0
Fincrest Improvement Association	0	0	0	1.60	7.0	30	No Char	0.3	0	.056	.010	1.20	3.0	24.0
Franklin Park Association	63	0	36.5	1.40	6.12	80	No Char	0.4	.072	.056	.004	2.50	6.0	35.0
Swatwold Park Association	0	0	0	.10	6.22	52	No Char	0.4	0	.040	.004	.00	2.00	74.0
West Jersey Water Service Municipality	0	0	0	.10	6.35	52	No Char	.20	0	.032	0	.00	3.0	10.0
Mountain Lakes Borough (Morris) Municipality	0	0	0	.14	7.99	87	No Char	0.1	0	.088	.002	1.00	2.5	37.0
National Park Borough (Gloucester) Municipality	0	0	0	1.20	5.94	301	No Char	0.6	.066	.048	.034	4.5	22.0	6.0
Nickerson Borough (Morris) Municipality	0	0	6.5	.70	7.7	110	No Char	0	0	.016	0	0.4	3.0	66.0
New Brunswick City (Middlesex) Municipality	25	0	9.0	.70	7.5	88	No Char	4.25	.380	.072	.004	.002	6.0	13.0
New Milford Borough (Bergen) Huckensack Water Co.	0	1	0	.14	6.03	100	No Char	1.2	0	.064	0	.40	4.0	27.0
Newark City (Essex) Municipality	0	0	0	.10	7.58	77	No Char	2.1	.016	.120	.0015	.08	4.0	14.0
Newfield Borough (Gloucester) Municipality	0	0	0	0	5.9	68	No Char	0.2	0	0	0	.60	6.0	0.5
Newton Town (Sussex) Municipality	10	1	13	.10	7.95	68	Slt Char	3.05	.010	.176	0	0	2.0	21.0
Oakland Borough (Bergen) Municipality	0	0	0	.40	6.95	307	Slt Char	0	0	.048	.002	.60	1.5	40.0
Ocean City (Cape May) Ocean City Water Service Co.	0	0	0	.10	7.78	171	No Char	0.5	.020	.072	.004	.08	8.0	66.0
Ocean Gate Borough (Ocean) Municipality	0	0	5.5	.70	6.85	109	No Char	0.2	.040	.048	.002	.12	4.0	65.0
Ogdensburg Borough (Sussex) Municipality	0	2	0	.30	7.4	74	No Char	1.6	0	.048	0	.08	1.0	10.0
Orange City (Essex) Municipality	0	0	0	0	7.45	127	No Char	1.1	0	.032	.001	.00	4.0	52.0
Oxford Township (Warren) Anna Wood Steel Co.	0	0	0	.20	6.92	80	No Char	1.3	.022	.056	.002	.60	3.0	20.0
Palmyra Borough (Burlington) Liverton-Palmyra Water Co.	0	0	0	.14	6.0	181	No Char	0.5	0	.008	.004	5.5	28.0	14.0
Park Ridge Borough (Bergen) Municipality	0	0	0	0	7.55	175	No Char	.20	0	.032	0	1.0	10.0	100.0
Parshanny-Troy Hills Township (Morris) Municipality	0	0	0	.20	7.32	151	No Char	0.4	0	.072	.001	.82	7.0	88.0
Brooklawn Farms Water Co.	0	0	0	0	6.99	123	No Char	0.7	.010	.008	.001	3.5	4.0	85.0

No. 91—ANALYSES OF WATERS FROM PUBLIC POTABLE WATER SUPPLIES IN NEW JERSEY—Continued

MUNICIPALITY—COUNTY OWNER OF SUPPLY	Color	Odor	Turbidity	Iron	pH	Total Solids	Appearance on Ignition	Oxygen Consumed	Free Ammonia	Alumina	Nitrates	Chlorides	Alkalinity	Total Hardness
Passaic Township (Morris) Small Farms Association	0	0	0	.10	6.8	223	No Char	1.0	.032	.008	0	1.00	47.0	70.0
Paterson City (Passaic)	0	0	3.5	...	6.6	93	11% Char	2.4	.084	.072	.001	.40	13.0	20.0
Passaic Valley Water Commission	0	0	0	.20	7.3	54	No Char	1.8	.016	.035	.001	.16	...	...
Passaic River Supply	10	Sit only	0	...	...	...	...	...	...	...	...	...	...	...
Wanaque Supply	0	0	0	1.40	5.95	108	Sit Char	0.5	.006	.048	.011	1.40	3.0	38.0
Peapack Borough (Gloucester) Municipality	0	0	0	.14	7.35	74	Sit Char	2.5	.006	.006	0	.32	2.0	24.0
Peapack-Clintone Borough (Somerset) Municipality	0	0	16.5	...	...	...	...	...	...	...	...	...	...	...
Pemberton Borough (Burlington) Municipality	560	1c	6.5	5.0	4.8	93	Char	16.7	.024	.836	.001	.08	6.0	22.0
Surface Supply	0	0	0	.30	7.92	134	Sit Char	0.4	.064	.004	0	3.0	133.0	146.0
Wall Supply	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Pemberton Township (Durlington)	0	0	0	0	7.81	120	No Char	0.4	.280	.048	0	0	3.0	94.0
Brown Mills Land Co. Inc.	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Pennington Borough (Mercer) Municipality	10	0	8.0	.70	6.82	126	Sit Char	0.8	.016	.032	0	.60	6.0	84.0
Pennsboro Borough (Salem)	0	0	8.0	.40	7.82	86	No Char	0.6	0	.048	.001	.16	4.0	65.0
Pennsboro Water Supply Co.	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Perrin Amby City (Middlesex)	23	Chem.	2.0	1.60	6.4	78	Char	1.7	.024	.016	.001	.08	0.0	20.0
Municipality	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Phillipsburg Town (Warren)	0	0	0	.10	7.6	177	No Char	1.0	0	.088	.003	.60	4.0	108.0
Poplars Water Co.	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Plainfield City (Union)	0	0	0	4.80	7.62	200	No Char	0.2	.024	0	5.0	11.0	141.0	222.0
Plainfield Union Water Co.	0	0	2.5	.04	7.9	420	No Char	0.5	.024	.016	.002	0.00	11.0	66.0
Rutherford Station	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Clinton Ave. Station	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Pleasantville City (Atlantic)	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Atlantic Coast Water Co. of N. J.	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Pleasantville No. 1	0	0	0	5.45	...	108	No Char	0.3	.032	.040	0	.20	0	16.0
Somers Point No. 2	0	0	0	.14	...	101	No Char	0.1	.016	.016	0	.04	32.0	2.0
Pleasantville No. 2	0	0	0	.40	6.68	200	No Char	0	.016	.024	0	.48	14.0	18.0
Pleasantville No. 3	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Plumstead Township (Ocean)	0	0	0	...	...	...	...	...	...	...	...	...	...	...
New Kaynt Water Co.	0	0	0	.7	7.10	112	No Char	.3	.048	.016	.002	0	4.0	77.0
Pohatcong Township (Hunterdon)	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Blugel Paper Corp.	0	0	0	.66	6.90	209	Sit Char	0.3	0	.032	.001	.40	4.0	83.0
Princeton	0	0	0	.29	6.85	91	No Char	0.6	0	.032	.003	1.20	4.0	122.0
Rickardville	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Point Pleasant Borough (Ocean)	0	0	0	.16	7.78	84	No Char	0.8	.008	.016	.001	.12	0	88.0
Municipality	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Point Pleasant Beach Borough (Ocean)	25	0	5	1.00	7.28	60	No Char	1.0	.006	.008	.003	0	10.0	28.0
Municipality	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Princeton Borough (Mercer)	0	0	0	0	7.09	267	No Char	0.4	0	.040	0	.00	9.0	146.0
Princeton Water Co.	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Rahway City (Union)	0	0	0	.50	7.25	182	No Char	2.1	.066	.064	.023	.09	8.5	44.5
Municipality	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Ramsey Borough (Bergen)	0	0	0	Trace	7.0	205	No Char	0.2	.000	.024	.0003	1.0	7.0	66.0
Municipality	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Raritan Township (Middlesex)	0	0	2.0	...	...	...	...	...	...	...	...	...	...	...
New Brunswick Water Co.	0	0	0	0	7.5	260	Sit Char	...	.010	.032	.200	.12	10.0	150.0
Red Bank Borough (Monmouth)	0	0	0	0	6.48	175	No Char	0.3	.016	.032	0	0	...	...
Municipality	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Ridgecroft Village (Bergen)	0	0	0	7.42	...	136	No Char	.23	0	.032	0	3.5	6.0	63.0
Municipality	0	0	0	...	...	...	...	...	...	...	...	...	...	...
Worthington	0	0	0	7.09	...	181	No Char	.30	0	.032	0	0.5	0.0	100.0
East Glen Ave.	30	0	29.5	4.8	...	174	Sit Char	.20	.032	.064	0	3.5	7.0	124.0
East Ridgewood Ave.	0	0	0	7.2	...	134	No Char	.35	.032	.016	0	5.0	6.0	118.0
Grove St.	0	0	0	1.14	7.62	122	No Char	.16	0	.048	0	8.0	7.0	116.0

No. 21—ANALYSES OF WATERS FROM PUBLIC POTABLE WATER SUPPLIES IN NEW JERSEY—Continued

MUNICIPALITY—COUNTY OWNER OF SUPPLY	Color	Odor	Turbidity	Iron	pH	Total Solids	Appearance on Ignition	Oxygen Consumed	Free Ammonia	Alumina	Nitrates	Chlorides	Alkalinity	Total Hardness
Ringwood Borough (Passaic)														
Ringwood Co. Well No. 3	0	0	0	.14	6.95	117	Slt Char	0.4	.016	.048	0	5.0	54.0	58.0
Well No. 4	0	0	0	.10	5.88	106	No Char	0.3	.016	.066	0	3.0	46.0	60.0
Rockaway Borough (Morris)														
Municipality	0	0	0	.10	7.08	77	Char	0.3	.032	.024	.010	4.0	38.0	50.0
Rocky Hill Borough (Somerset)														
Municipality	10	0	18.0	.40	7.28	187	No Char	0.2	0	0	.002	5.0	72.0	88.0
Salem City (Salem)														
Municipality														
Quinton Wells Lansed Lake No. 1	0	0	0	.20	7.2	190	Slt Char	1.8	.032	.040	0	7.0	42.0	52.0
Lansed Lake No. 2	0	0	41.0	2.00	6.59	686	No Char	1.1	.016	.022	.10	170.5	78.0	380.0
Lansed Lake No. 3	0	0	0	.50	6.90	178	No Char	0.8	.048	.032	.04	6.5	119.0	160.0
Lansed Lake No. 4	0	0	0	0	6.80	178	No Char	0.8	.048	.032	.04	6.5	119.0	160.0
Sen Girl Borough (Monmouth)														
Municipality	20	0	0	2.60	7.10	80	No Char	0.8	0	.016	.002	0	0	12.0
Sea Isle City (Cape May)														
Municipality	0	Kero- sene	0	.14	8.2	188	No Char	1.4	.064	.040	.001	0	14.0	92.5
Seaside Heights Borough (Ocean)														
Municipality	45	0	0	.90	6.85	85	No Char	1.3	.064	.048	0	3.0	22.0	16.0
Seaside Park Borough (Ocean)														
Municipality	0	0	0	.14	8.35	166	No Char	0.9	.066	.032	0	2.0	112.	8.0
Ship Bottom-Beach Arlington (Ocean)														
Municipality	30	0	15.5	4.40	6.8	88	No Char	0	.064	.048	.002	0	3.0	15.0
Somerville Borough (Somerset)														
Municipality	0	Slt Chl	0	0	6.25	187	Char	0.8	.090	.048	.001	.80	8.0	52.0
South Amboy City (Middlesex)														
Municipality	0	0	0	.90	4.08	46	No Char	0.2	.048	.040	.003	.16	3.0	8.0
South Brunswick Township (Middlesex)														
Municipality	0	0	0	0	7.25	188	No Char	0.4	.016	.064	.008	.20	4.0	73.0
Kingston Water Co.														
Kingston Water Co.	0	0	0	0	7.25	188	No Char	0.4	.016	.064	.008	.20	4.0	73.0

South Orange Village (Essex)														
Municipality	0	0	0	.10	7.5	364	Char	0.6	.008	.032	.001	5.0	27.0	110.
South Hillers Borough (Middlesex)														
Municipality	0	0	0	.16	7.24	71	No Char	0.3	.008	.080	0	.60	4.5	28.5
Southampton Township (Burlington)														
Vincetown Water Co.	0	0	0	.60	7.4	108	No Char	0.8	.048	.064	.002	.20	1.0	90.0
Sparta Township (Sussex)														
Lake Mohawk-Sparta Water Co. E. J. & Laura Dugan	0	0	0	0	7.05	288	No Char	0.2	.016	.072	0	.44	2.0	180.0
Well No. 1	0	0	0	7.5	6.20	290	No Char	0.8	.048	.072	0	.60	7.0	171.0
Well No. 2	0	0	0	12	7.7	169	Slt Char	1.2	.064	.072	.003	.52	2.0	131.0
Well No. 3	0	0	0	0	7.6	218	No Char	0.4	.008	.032	.10	2.0	173.0	
Well No. 4	0	0	0	.10	7.25	128	No Char	0.4	.008	.032	0	2.0	81.0	
Well No. 5	0	0	0	0	7.25	128	No Char	0.4	.008	.032	0	2.0	81.0	
Spring Lake Borough (Monmouth)														
Municipality	0	0	0	.40	7.70	97	No Char	1.0	.032	.032	.008	.08	0.5	74.0
Stanhope Borough (Sussex)														
Municipality	70	0	50	4.0	6.2	100	Slt Char	0.7	.016	.032	.003	.08	5.0	26.0
Stockton Borough (Hunterdon)														
Municipality	0	0	0	.10	6.02	89	No Char	0.7	0	.016	.001	.60	4.0	27.0
Stone Harbor Borough (Gloucester)														
Municipality	0	0	0	0	8.35	186	No Char	0.7	.184	.040	.003	.04	14.0	98.0
Summit City (Union)														
Commonwealth War Co. Canoe Brook Station	0	0	0	.16	6.7	108	Slt Char	1.3	.064	.048	0	.40	0.0	62.0
Balswell Station	0	0	0	0	6.08	110	Slt Char	0.7	.016	.064	.001	.38	3.0	50.0
Short Hills Station	0	0	2.5	7.4	7.4	...	.....	.....	.....	.....	.....	.....	.....	.....
Surf City Borough (Ocean)														
Municipality	0	1m	0	1.80	6.29	63	No Char	0.6	.048	.032	.001	.04	4.0	20.0
Sussex Borough (Sussex)														
Municipality	0	0	0	.70	6.7	44	Slt Char	3.3	.032	.056	0	4.0	2.0	12.0
Sweetsherborn Borough (Gloucester)														
Municipality	45	0	28.5	1.70	7.4	192	Slt Char	0.1	.144	.032	0	.04	31.0	92.0
Trenton City (Mercer)														
Municipality	0	0	0	.20	7.25	58	Slt Char	0.6	.048	.048	.003	.16	2.0	19.0
Tuckerton Borough (Ocean)														
Tuckerton Water Works	0	1m	0	.16	6.02	69	No Char	0.6	.008	.024	.002	.04	5.0	14.0



No. 51—ANALYSES OF WATERS FROM PUBLIC POTABLE WATER SUPPLIES IN NEW JERSEY—Continued

MUNICIPALITY—COUNTY OWNER OF SUPPLY	Color	Odor	Turbidity	Iron	pH	Total Solids	Appearance on Ignition	Oxygen Consumed	Free Ammonia	Aluminum Ammon <sup>4</sup>	Nitrates	Nitrates	Chlorides	Alkalinity	Total Hardness
Union Township (Ocean)	0	0	0	.20	6.03	25	No Char	0.1	.024	.056	.002	.06	6.0	Neutral	8.0
Barnegat Water Co.	0	0	0	.14	6.72	34	No Char	0.1	.048	.032	.001	0	1.5	18.0	28.0
Dunes Beach Borough (Monmouth) Municipality	0	0	0	.14	7.95	153	No Char	0.7	.160	.048	.002	.04	15.5	77.0	28.0
Upper Township (Cape May)	0	0	0	0	5.58	115	No Char	0.2	.082	.072	0	7.0	9.0	8.0	46.0
Corsons Inlet Water Co.	0	0	0	0	7.0	117	No Char	0.9	.072	.002	.011	.040	0.0	51.5	34.0
Upper Penns Neck Township (Salem) E. L. du Pont de Nemours & Co.	0	0	0	0	7.3	83	No Char	1.8	0	.072	0	0	2.0	40.0	56.0
Venmor City (Atlantic) Municipality	0	0	15.5	.30	7.3	83	No Char	1.8	0	.072	0	0	2.0	40.0	56.0
Vernon Township (Sussex) Highland Lakes Improvement Co.	0	0	0	.30	7.18	119	Silt Char	1.0	0	.004	0	0	0.5	52.0	94.0
Secklar & Sheppard Co. Surface Supply	85	0	25	.30	7.91	90	Silt Char	0.4	0	.008	.001	.008	1.0	38.0	44.0
Well Supply	0	0	0	0	4.7	137	No Char	1.0	.016	.016	.002	3.00	22.0	Neutral	40.0
Vineyard Borough (Cumberland) Kinble Glass Co.	0	0	0	.02	5.7	53	No Char	0.5	.120	.048	.003	5.00	13.0	0	22.0
Municipality	0	0	0	0	8.0	105	No Char	0.8	0	.082	0	2.5	7.0	83.0	140.0
Waldeck Borough (Bergen) Municipality	0	0	0	0	7.85	284	No Char	0.2	0	.068	0	8.0	9.0	80.0	168.0
Washington Borough (Bergen) Municipality	0	0	0	.10	7.98	447	Silt Char	0.2	.352	.088	.022	4.5	23.0	67.0	208.0
St. Joseph's Station	0	0	0	0	7.98	320	No Char	0.2	0	.064	0	9.0	13.0	135.0	224.0
Maces St. Station	0	0	0	0	6.15	57	No Char	0.5	0	0.016	0	.04	3.0	10.0	25.0
Wadsworth and Currie Ave. Station	0	0	0	0	6.86	58	No Char	1.5	0	0	0	.08	4.0	23.0	40.0
Wanaque Borough (Passaic) Hudson River Improvement Co.	0	0	0	.20	7.55	48	Silt Char	2.2	0	.004	0	.30	3.0	13.0	24.0
North Jersey District Water Supply Comm.	10	1v	0	0	6.12	69	Silt Char	1.4	.032	.004	.018	.16	2.0	21.0	24.0
Washington Borough (Warren) Washington Water Co.	0	0	0	0	7.1	124	No Char	0.2	0	0	0	.08	3.0	82.5	92.0
Washington Township (Gloucester) J. T. Wilson	0	0	0	0	6.1	73	Silt Char	0	0	.030	0	0.04	2.0	35.0	42.0
Washington Township (Morris) Long Valley Water Co.	0	0	0	.10	6.11	56	Silt Char	.10	0	.024	.001	.05	0	11.0	12.0
E. H. Swackhammer	0	0	0	0	5.82	60	No Char	0	0	.048	.001	.00	2.0	19.0	24.0
W. A. Fisher	0	0	0	0	6.6	42	No Char	0.2	0	.048	0	0	1.0	12.0	42.0
Judd A. Hubbard	0	0	0	0	7.95	175	No Char	0.6	.210	.064	0	0	0.0	128.0	28.0
Wenonah Borough (Gloucester) Municipality	0	0	0	.10	6.8	129	No Char	0.9	.144	.082	.006	.08	2.0	86.0	72.0
West Bedford Township (Gloucester) Colonial Manor Water Co.	0	0	0	.10	6.4	55	No Char	0.4	0	.004	0	0	2.0	17.0	33.0
West Milford Township (Passaic) Ringwood Co. (Awooting)	0	0	0	.10	7.3	30	Silt Char	2.2	0	.006	0	.24	4.0	2.0	16.0
Pinecliff Lake Realty Co.	0	0	0	0	6.4	138	Silt Char	0.2	.024	.024	.028	9.0	6.0	16.0	62.0
West Winler Township (Mercer) Hiram A. Cook Bart.	0	0	0	1.20	7.18	124	No Char	0.2	.004	.004	.032	.002	3.6	70.3	82.0
Princeton Junction Water Co.	0	0	0	1.5	7.18	143	No Char	.2	0	.032	.002	.085	1.9	63.0	64.0
Julius C. Wildermuth	30	1	25	0	6.25	117	No Char	0.7	.108	.022	.020	.02	2.0	61.0	66.0
Westville Borough (Gloucester) Municipality	0	0	14	.90	7.54	54	Silt Char	2.8	.016	.064	.003	.04	2.0	28.0	46.0
Wharton Borough (Morris) Municipality	0	0	1e	.40	7.83	141	Silt Char	0.8	.120	.040	.001	.04	25.0	46.0	74.0
Wildwood City (Cape May) Municipality	0	0	0	4.0	5.99	53	No Char	0.1	.096	.064	0	.01	10.0	0	28.0
Woodbine Borough (Cape May) Woodbine Water Co.	0	0	0	.10	6.98	249	No Char	0.8	0	.082	0	2.00	13.0	97.0	134.0
Woodbridge Township (Middlesex) Middlesex Water Co.	0	0	0	.10	7.65	219	No Char	0.8	.264	.048	0	.04	22.0	154.0	16.0
Woodbury City (Gloucester) Municipality	0	0	1m	.10	7.55	483	Silt Char	2.5	.224	.072	.001	.04	146.0	198.0	10.0
Woodstown Borough (Salem) Municipality	0	0	0	.50	7.15	118	No Char	0.3	.096	.006	.001	.20	3.0	86.0	110.0
Wrightstown Borough (Burlington) Hanover Water Co.	0	0	0	.10	7.57	198	No Char	0.4	.008	.008	.001	5.0	9.0	60.0	80.0
Wyckoff Township (Bergen) Hooker I. Coggeshall	0	0	0	.10	7.57	198	No Char	0.4	.008	.008	.001	5.0	9.0	60.0	80.0

STATUS OF SEWAGE DISPOSAL AS OF JUNE, 1939

MUNICIPALITY AND COUNTY	SYSTEM OWNED BY	MUNICIPALITY OR LOCALITY SERVED	Permanent Population (1930)	Sewer Connections (1939)	DATE ERECTED	
					Original Plant	Existing Plant
Absecon (C.) (Atlantic)			2,138			
Allenhurst (B.) (Atlantic)	Borough	Allenhurst	1,004			
Alpena (Twp.) (Warren)			684			
Alpena (Twp.) (Warren)			1,479	523	1008	1930
Allenhurst (B.) (Monmouth)			700			
Alpena (B.) (Sussex)			1,875			
Alpha (B.) (Warren)			2,374			
Alpine (B.) (Bergen)			475			
Anderson (B.) (Sussex)			470			
Anderson (Twp.) (Sussex)			1,091		1006	1934
Anderson (Twp.) (Sussex)			90,106		1091	1928
Atlantic City (C.) (Atlantic)	City	Chelsea Heights Section	1,241		1021	1928
Atlantic City (C.) (Atlantic)	City	Atlantic City	2,000		1029	1930
Atlantic City (C.) (Atlantic)	City	Atlantic City	8,904		1014	1930
Atlantic City (C.) (Atlantic)	City	Atlantic Highlands	1,220		1009	1936
Atlantic City (C.) (Atlantic)	City	Audubon	1,144		1009	1936
Audubon (B.) (Camden)	Borough	Avon	2,262	487	1939	
Avon-by-the-Sea (B.) (Monmouth)	Borough	Harrington	700		1017	
Barnegat City (B.) (Ocean)	Borough	Bay Head	88,870	657	1937	
Bass River (Twp.) (Burlington)	Borough	Beach Haven	715		1013	1931
Bay Head (B.) (Ocean)	Borough	Beach Haven	894			
Bayonne (C.) (Hudson)	Borough		26,974			
Beach Haven (B.) (Ocean)	Borough		1,128			
Bedminster (Twp.) (Somerset)						
Belleville (Twp.) (Sussex)						
Belmar (B.) (Camden)						

Belmar (B.) (Monmouth)	Borough	Belmar	9,461	3,019	1911	
Belvidere (Town) (Warren)		South Belmar	482			
Bendix (B.) (Bergen)			2,713			
Bergenfield (B.) (Bergen)	Borough	Bergenfield	20			
Berkeley (Twp.) (Ocean)		Harmonfield	8,819		1925	1938
Berlin (B.) (Camden)		Dumont	9,861			
Berlin (Twp.) (Camden)			1,885			
Berkeley (Twp.) (Somerset)			1,537			
Berkeley (Twp.) (Somerset)			2,293			
Bethlehem (Twp.) (Hudson)		Bernardsville	3,738	409	1933	1934
Beverly (C.) (Burlington)	City	Beverly	2,894		1913	1935
Blairstown (Twp.) (Warren)	City		1,416			
Bloomfield (Town) (Sussex)	Borough		38,077			
Bloomfield (Twp.) (Sussex)	Borough		2,870			
Bogota (B.) (Bergen)	Borough	Lugota	7,341		1915	1930
Bonneton (Twp.) (Morris)	Borough		623			
Bordentown (C.) (Morris)		Riverton	6,800		1911	1930
Bordentown (Twp.) (Hudson)	City	Riverton	4,818	937	1911	1930
Bordentown (Twp.) (Somerset)	Borough	Round Brook	7,272	1,400	1936	1938
Bound Brook (B.) (Monmouth)	Borough	Round Brook	1,094		1911	1935
Bradley Beach (B.) (Monmouth)	Borough	Bradley Beach (part)	2,993		1911	1935
Branchville (B.) (Sussex)	Borough	Bradley Beach (part)	1,605			
Brick (Twp.) (Ocean)	City	Irvington	1,172			
Bridgeport (C.) (Cumberland)			16,069	2,084	1911	1929
Bridgeport (C.) (Sussex)	City	Irvington	684	20		
Brielle (B.) (Monmouth)	City	Brigantine City	337	215	1927	1937
Brigantine City (C.) (Atlantic)	Borough	Brooktown	1,768		1939	
Brooktown (B.) (Camden)	City	Burlington	4,547		1939	
Burlington (C.) (Atlantic)	City	Burlington	2,887		1902	1932
Burlington (Twp.) (Burlington)	Borough	Burlington	3,392			
Butler (B.) (Morris)	Borough	Butler	2,543			
Bryam (Twp.) (Sussex)	Borough	Butler	5,144		1924	1932
Caldwell (B.) (Sussex)	Borough	{Caldwell	1,482		1915	1932
Caldwell (Twp.) (Sussex)		{North Caldwell	2,911			
Calton (B.) (Hudson)		{West Caldwell	9,089			
Camden (C.) (Camden)	City	{Northwest Section	894		1918	1929
Cape May (C.) (Cape May)	City	{Northeast Section	118,790		1929	
Cape May Point (B.) (Cape May)	Borough	Cape May Point	2,637		1930	

Note: Industrial, State or county institution treatment plants not included in the above tabulation.  
 \* Seasonal increase from 2 to 20 times in population.



## STATUS OF SEWAGE DISPOSAL AS OF JUNE, 1939.—Continued

MUNICIPALITY AND COUNTY	SYSTEM OWNED BY	MUNICIPALITY OR LOCALITY SERVED	Permanent Population (1930)	Sewer Connections (1939)	DATE SELECTED	
					Original Plant	Existing Plant
Carlsbad (B.) (Bergen)	Borough	Carlsbad	5,425	1,183	.....	.....
Cedar Grove (Twp.) (Essex)	Chatham-Madison	Chatham	34,539	.....	.....	.....
Chatham (B.) (Morris)	.....	Madison	5,909	3,008	1811	1930
Chatham (Twp.) (Morris)	.....	.....	7,481	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	1,116	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	298	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	1,455	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	5,117	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	2,239	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	2,239	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	1,474	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	2,851	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	2,006	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	10,307	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	46	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	932	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	1,866	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	2,502	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	15,725	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	2,268	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	1,278	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	11,126	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	1,824	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	4,828	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	2,513	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	2,340	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	5,734	.....	.....	.....
Chatham (Twp.) (Morris)	.....	.....	.....	89	1929	.....
Chatham (Twp.) (Morris)	.....	.....	.....	27	1923	.....

Delaware (Twp.) (Huntington)	Township	Dover	1,704	.....	.....	.....
Delmar (Twp.) (Huntington)	Borough	.....	5,704	.....	.....	.....
Demarest (B.) (Bergen)	Borough	.....	1,013	.....	.....	.....
Dennis (Twp.) (Cape May)	Borough	.....	1,615	.....	.....	.....
Denville (Twp.) (Morris)	Borough	.....	2,162	.....	.....	.....
Denville (Twp.) (Morris)	Borough	.....	4,607	.....	.....	.....
Dover (Town) (Morris)	Borough	.....	8,970	.....	.....	.....
Dover (Twp.) (Ocean)	Borough	.....	1,574	.....	.....	.....
Dover (Twp.) (Ocean)	Borough	.....	5,861	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	5,148	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	2,210	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	2,711	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	2,945	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	364	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	2,686	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	68,020	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	17,903	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	56,733	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	442,337	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	8,109	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	13,620	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	18,472	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	24,827	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	21,022	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	1,219	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	406	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	1,304	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	27,809	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	368	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	707	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	1,115	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	1,823	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	6,942	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	1,948	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	2,306	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	5,000	.....	.....	.....
Dumont (B.) (Bergen)	Borough	.....	9,067	.....	.....	.....

Elizabeth  
(Joint Meeting of Union and Essex Counties)

Elizabeth (B.) (Union)	City	.....	114,589	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	8,002	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	17,903	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	56,733	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	442,337	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	8,109	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	13,620	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	18,472	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	24,827	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	21,022	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	1,219	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	406	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	1,304	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	27,809	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	368	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	707	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	1,115	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	1,823	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	6,942	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	1,948	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	2,306	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	5,000	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	9,067	.....	.....	.....

† Estimated connected population.

Elizabeth (B.) (Union)	City	.....	114,589	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	8,002	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	17,903	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	56,733	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	442,337	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	8,109	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	13,620	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	18,472	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	24,827	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	21,022	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	1,219	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	406	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	1,304	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	27,809	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	368	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	707	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	1,115	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	1,823	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	6,942	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	1,948	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	2,306	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	5,000	.....	.....	.....
Elizabeth (B.) (Union)	City	.....	9,067	.....	.....	.....



MUNICIPALITY AND COUNTY	SYSTEM OWNED BY	MUNICIPALITY OR LOCALITY SERVED	Permanent Population (1920)	Sewer Connections (1928)	DATE ERRECTED	
					Original Plant	Existing Plant
Fauwood (B.) (Union)	Borough	Far Hills	1,081	80	1922	1922
Farmington (B.) (Morris)	Borough		560			
Farmington (B.) (Monmouth)	Borough		529			1927
Fieldsboro (B.) (Burlington)	Borough	Kingston	2,729	631	1906	1927
Flemington (B.) (Huntdon)	Borough	Evance Township (part)	7,824		1910	1921
Florence (Twp.) (Burlington)		Roebelling Section of Township (part)	1,269			
Florence (Twp.) (Burlington)			8,769			
Floham Park (B.) (Morris)	John A. Roebings Sons		1,074		1924	
Folsom (B.) (Atlantic)	Borough	Franklin	4,176			
Fort Lee (B.) (Bergen)	N. J. Zinc Co.		3,563			
Frankford (Twp.) (Sussex)			6,674			
Franklin (B.) (Sussex)			803			
Franklin (B.) (Sussex)			834			
Franklin (Twp.) (Huntdon)			1,720		1922	1920
Franklin (Twp.) (Somerset)			686			
Franklin (Twp.) (Warren)			1,186			
Franklin (Twp.) (Warren)			1,186			
Franklin (Twp.) (Warren)			20,730			
Franklin (Twp.) (Warren)			3,344			
Freehold (Twp.) (Monmouth)	Borough	Freehold	6,824	1,064	1922	
Freshford (Twp.) (Atlantic)			608			
Frelinghuysen (Twp.) (Warren)			1,064			
Freshford (Twp.) (Atlantic)			1,064			
Gallopway (Twp.) (Atlantic)	City		1,064			
Garden City (B.) (Warren)	Borough		522		1920	1920
Garwood (B.) (Union)	Borough		1,064			
Glen Gardner (B.) (Sussex)	Borough	Glassboro	4,624			
Glen Gardner (B.) (Huntdon)	Borough		524			

Glen Ridge (B.) (Sussex)	Township	Hackensack Section of Township (part)	7,925		1922	
Glen Ridge (B.) (Sussex)	Township		4,860	150	1925	1925
Gloucester (B.) (Bergen)			13,420		1900	
Gloucester (B.) (Bergen)			544			
Gloucester (B.) (Bergen)			970			
Green Brook (Twp.) (Somerset)			2,301			
Green Brook (Twp.) (Somerset)			6,151			
Greenwich (Twp.) (Cumberland)	City	Hackensack	24,658			
Greenwich (Twp.) (Worcester)			9,058			
Guttenberg (Town) (Hudson)			9,198			
Hackensack (C.) (Bergen)						
Hackensack (Twp.) (Warren)	Township	Bitteewood Section of Township				
Haddon (Twp.) (Camden)	Township	West Collingwood	258		1925	1925
Haddon (Twp.) (Camden)	Township		258		1925	1925
Haddon (Twp.) (Camden)	Township	Westmont	403		1925	1925
Haddonfield (B.) (Camden)	Borough	Haddonfield	403		1925	1925
Haddonfield (B.) (Camden)	Borough	Haddonfield, Haddon Township (part)	8,927		1903	1925
Haddonfield (B.) (Camden)	Borough	Haddon Heights	9,935		1921	
Haddonfield (B.) (Camden)	Borough		1,067		1911	1929
Halesport (Twp.) (Burlington)						
Hamburg (B.) (Sussex)						
Hamilton (Twp.) (Atlantic)	Township					
Hamilton (Twp.) (Mercer)	Town	Hammoncton	7,466	1,048	1914	
Hammoncton (Town) (Atlantic)	Town					
Hampton (B.) (Huntdon)			581			
Hampton (Twp.) (Sussex)			581			
Hanover (Twp.) (Morris)			2,516			
Hanover (Twp.) (Morris)			6,890			
Hanover (Twp.) (Morris)			10,081			
Hanover (Twp.) (Morris)			1,296			
Hanover (Twp.) (Morris)			331			
Hanover (Twp.) (Morris)			1,316			
Hanover (Twp.) (Morris)			1,251			
Hanover (Twp.) (Morris)			15,904			
Hanover (Twp.) (Morris)			1,827			
Hanover (Twp.) (Morris)			5,658			
Hanover (Twp.) (Morris)			1,042			
Hanover (Twp.) (Morris)			11,868			
Hanover (Twp.) (Morris)			1,801			
Hanover (Twp.) (Morris)			8,600			
Hanover (Twp.) (Morris)			1,877			



STATUS OF SEWAGE DISPOSAL AS OF JUNE, 1939—Continued

MUNICIPALITY AND COUNTY	SYSTEM OWNED BY	MUNICIPALITY OR LOCALITY SERVED	Permanent Population (1930)	Sewer Connections (1939)	DATE ERECTED	
					Original Plant	Extng. Plant
Highstown (H., Mercer)	Borough	Highstown	9,012		1913	Under Const.
Hillsborough (Twp., Somerset)			2,288			
Hillsdale (H., Bergen)			2,089			
Hillside (Twp., Union)			17,100			
Hoboken (H., Camden)			50,201			
Hoboken (H., Bergen)			825			
Hohokus (Twp., Bergen)			3,050			
Holland (Twp., Hunterdon)			1,191			
Holland (Twp., Monmouth)			634			
Honauont (Twp., Sussex)			1,553			
Hopewell (Twp., Warren)			3,907			
Hopewell (H., Mercer)			1,704			
Hopewell (Twp., Cumberland)			944			
Howell (Twp., Monmouth)			7,733			
Independence (Twp., Warren)			453	364		1936
Interlaken (H., Monmouth)			2,048			
Island Pond (H., Essex)			1,284			
Island Heights (H., Ocean)			93			
Jackson (Twp., Ocean)			453			
Jackson (Twp., Green)			2,048			
Jacksonburg (H., Middlesex)			1,284			
Jefferson (Twp., Hudson)			316,715			

MUNICIPALITY AND COUNTY	SYSTEM OWNED BY	MUNICIPALITY OR LOCALITY SERVED	Permanent Population (1930)	Sewer Connections (1939)	DATE ERECTED	
					Original Plant	Extng. Plant
Jersey Homesteads (H., Monmouth)	U. S. Government	Jersey Homesteads	2,100	290	1936	1930
Keansburg (H., Monmouth)	Town	Kentz	40,710	2,250	1936	1930
Kennerly (Twp., Hudson)	Borough	Keypoint	2,243		1912	1938
Keyport (H., Monmouth)	Borough	Keypoint	4,910		1912	1938
Kingwood (Twp., Hunterdon)			1,428			
Kinnelon (H., Morris)			1,049			
Knox (Twp., Warren)			602			
Lafayette (Twp., Sussex)	Borough	Lakehurst	735			
Lakewood (Twp., Ocean)	Lakewood Water Co.		7,809		1900	1938
Lakewood (Twp., Cumberland)			14,047			
Lambert (Twp., Monmouth)			1,223			
Laurel Springs (H., Camden)	Borough	Lavallotte	1,879	381	1929	
Lavallette (H., Ocean)			1,770			
Lawrence (Twp., Mercer)			6,293			
Lawrence (Twp., Monmouth)			1,200			
Lebanon (H., Hunterdon)	Borough	South Side	5,350	1,728		
Lebanon (Twp., Hunterdon)	Borough	North Side	1,419			
Leonia (H., Bergen)			21,291			
Liberty (Twp., Warren)			2,623			
Lincoln Park (H., Morris)			1,614			
Linden (H., Union)			5,147			
Lindenwood (H., Camden)			5,191			
Little Egg Harbor (Twp., Ocean)			4,156			
Little Falls (Twp., Passaic)			1,100			
Little Ferry (H., Bergen)	Township		3,470			
Little Silver (H., Monmouth)			11,540			
Livingston (Twp., Essex)			1,600			
Lodi (H., Bergen)			353			
Lodi (Twp., Gloucester)			18,309			
Long Beach (Twp., Ocean)			455			
Long Branch (H., Monmouth)			228			
Long Branch (C., Monmouth)			450			
Longport (H., Atlantic)			233			
Longport (H., Atlantic)			20			
Longport (Twp., Warren)			1,444			
Lower Merion Neck (Twp., Salem)			1,063			
Lower Merion Neck (Twp., Salem)			2,033			
Lumberton (Twp., Burlington)			17,892			
Lynchhurst (Twp., Bergen)						





STATUS OF SEWAGE DISPOSAL AS OF JUNE, 1938—Continued

MUNICIPALITY AND COUNTY	SYSTEM OWNED BY	MUNICIPALITY OR LOCALITY SERVED	Permanent Population (1930)	Sewer Connectors (1939)	DATE SUBMITTED	
					Original Plant	Existing Plant
Malden (B.) (Morris)	Borough		7,481			
Malden (Twp.) (Middlesex)			2,500			
Magnolia (B.) (Camden)			1,622			
Mantoloking (Twp.) (Monmouth)	Borough		1,464	1,475	1935	1931
Mantoloking (B.) (Monmouth)			1,100		1936	
Manchester (Twp.) (Ocean)			1,584			
Mansfield (Twp.) (Burlington)			1,706			
Maplewood (Twp.) (Essex)			1,537			
Maplewood (B.) (Essex)			2,077			
Maplewood (Twp.) (Essex)			5,447	312	1936	1936
Maplewood (Twp.) (Essex)	Township		21,321		1937	1937
Maplewood (Twp.) (Essex)	City		2,913			
Marblehead (B.) (Essex)			1,992			
Marblehead (Twp.) (Essex)	Borough		2,264	750	1924	
Marblehead (Twp.) (Essex)			2,319			
Marblehead (Twp.) (Essex)	Borough		3,308		1917	1932
Marlboro (Twp.) (Monmouth)			9,091		1905	1911
Marlboro (B.) (Monmouth)			1,978		1930	
Marlboro (Twp.) (Monmouth)	Borough		1,663			
Marlboro (B.) (Morris)			8,592	3,114	1909	1937
Marlboro (Twp.) (Morris)	Joint Sewer Comm.		3,548			
Merchantville (B.) (Camden)	Borough		9,403	904	1926	1936
Merchantville (B.) (Camden)	Township		5,564	652		1938
Merchantville (B.) (Camden)	Borough		54,252			
Merchantville (B.) (Camden)			5,148			
Merchantville (B.) (Camden)			1,481	12,400		1938
Merchantville (B.) (Camden)			9,061			
Middlesex (B.) (Middlesex)	Plainfield Joint Meeting		9,309			
Middlesex (B.) (Middlesex)			5,638			

Milford (B.) (Hunterdon)	Township		983			
Milford (Twp.) (Hunterdon)			8,402			
Milbords (B.) (Somerset)			187			
Milbords (Twp.) (Somerset)			1,428			
Milbords (B.) (Middlesex)			2,904			
Milbords (Twp.) (Middlesex)			1,422			
Mine Hill (Twp.) (Cumberland)	City		457		1900	1924
Minerva (B.) (Morris)			4,064			
Minerva (Twp.) (Morris)			2,584			
Minerva (B.) (Morris)			42,017			
Minerva (Twp.) (Morris)	Township		2,215			
Minerva (B.) (Morris)			2,648			
Minerva (Twp.) (Morris)			7,247	1,821	1904	1929
Minerva (B.) (Morris)			5,455			
Minerva (Twp.) (Morris)			15,107	2,615	1926	1931
Minerva (B.) (Morris)			2,132		1910	
Minerva (Twp.) (Morris)			985			
Minerva (B.) (Morris)			2,810	623		
Minerva (Twp.) (Morris)			6,873		1929	
Minerva (B.) (Morris)			1,629			
Minerva (Twp.) (Morris)			1,425			
Minerva (B.) (Morris)			1,928			
Minerva (Twp.) (Morris)			10,925	1,405	1913	1920
Minerva (B.) (Morris)			10,635		1910	1930
Minerva (Twp.) (Morris)			2,407	501	1927	
Minerva (B.) (Morris)			442,357			
Minerva (Twp.) (Morris)			34,855		1937	
Minerva (B.) (Morris)			698			
Minerva (Twp.) (Morris)			2,958	510	1937	
Minerva (B.) (Morris)			1,918	308	1937	
Minerva (Twp.) (Morris)			1,869			
Minerva (B.) (Morris)			8,401	1,208	1906	1931
Minerva (Twp.) (Morris)			8,293	383	1917	1927
Minerva (B.) (Morris)			40,714			
Minerva (Twp.) (Morris)			3,622	632	1927	1927

MUNICIPALITY AND COUNTY	SYSTEM OWNED BY	MUNICIPALITY OR LOCALITY SERVED	Permanent Population (1930)	Sewer Connectors (1939)	DATE SUBMITTED	
					Original Plant	Existing Plant
Milford (B.) (Hunterdon)			983			
Milford (Twp.) (Hunterdon)			8,402			
Milbords (B.) (Somerset)			187			
Milbords (Twp.) (Somerset)			1,428			
Milbords (B.) (Middlesex)			2,904			
Milbords (Twp.) (Middlesex)			1,422			
Mine Hill (Twp.) (Cumberland)	City		457		1900	1924
Minerva (B.) (Morris)			4,064			
Minerva (Twp.) (Morris)			2,584			
Minerva (B.) (Morris)			42,017			
Minerva (Twp.) (Morris)	Township		2,215			
Minerva (B.) (Morris)			2,648			
Minerva (Twp.) (Morris)			7,247	1,821	1904	1929
Minerva (B.) (Morris)			5,455			
Minerva (Twp.) (Morris)			15,107	2,615	1926	1931
Minerva (B.) (Morris)			2,132		1910	
Minerva (Twp.) (Morris)			985			
Minerva (B.) (Morris)			2,810	623		
Minerva (Twp.) (Morris)			6,873		1929	
Minerva (B.) (Morris)			1,629			
Minerva (Twp.) (Morris)			1,425			
Minerva (B.) (Morris)			1,928			
Minerva (Twp.) (Morris)			10,925	1,405	1913	1920
Minerva (B.) (Morris)			10,635		1910	1930
Minerva (Twp.) (Morris)			2,407	501	1927	
Minerva (B.) (Morris)			442,357			
Minerva (Twp.) (Morris)			34,855		1937	
Minerva (B.) (Morris)			698			
Minerva (Twp.) (Morris)			2,958	510	1937	
Minerva (B.) (Morris)			1,918	308	1937	
Minerva (Twp.) (Morris)			1,869			
Minerva (B.) (Morris)			8,401	1,208	1906	1931
Minerva (Twp.) (Morris)			8,293	383	1917	1927
Minerva (B.) (Morris)			40,714			
Minerva (Twp.) (Morris)			3,622	632	1927	1927



STATUS OF SEWAGE DISPOSAL AS OF JUNE, 1939.—Continued

MUNICIPALITY AND COUNTY	SYSTEM OWNED BY	MUNICIPALITY OR LOCALITY SERVED	Permanent Population (1930)	Sewer Connections (1939)	DATE EXERCISED	
					Original Plant	Existing Plant
North Caldwell (B.) (Essex)	Borough	North Caldwell	1,492	.....	.....	.....
North Cape May (B.) (Cape May)	.....	.....	5	.....	.....	.....
Northfield (C.) (Atlantic)	.....	.....	2,094	.....	.....	.....
North Haledon (H.) (Bergen)	.....	.....	2,515	.....	.....	.....
North Plainfield (B.) (Essex)	.....	.....	675	.....	.....	.....
North Plainfield (B.) (Somerset)	.....	.....	9,700	.....	.....	.....
Northvale (H.) (Bergen)	.....	.....	1,144	.....	.....	.....
North Willow (C.) (Cape May)	.....	North Willow	1,358	.....	.....	1929
Norwood (B.) (Bergen)	.....	.....	20,572	.....	.....	.....
Norwood (B.) (Essex)	.....	.....	735	.....	.....	.....
Oakland (H.) (Bergen)	.....	.....	2,893	.....	.....	1915
Oaklyn (B.) (Camden)	.....	Oaklyn Township (Ocean County)	2,845	.....	.....	1907
Ocean (Twp.) (Monmouth)	.....	.....	545	.....	.....	.....
Ocean (Twp.) (Ocean)	.....	.....	387	.....	.....	.....
Ocean City (C.) (Cape May)	.....	Ocean City	45,225	4,084	.....	1912
Ocean Gate (B.) (Ocean)	.....	.....	1,874	.....	.....	.....
Oceanport (H.) (Monmouth)	.....	.....	1,138	.....	.....	.....
Olney (B.) (Essex)	.....	.....	1,431	.....	.....	.....
Old Tappan (H.) (Bergen)	.....	.....	600	.....	.....	.....
Oradell (H.) (Bergen)	.....	Oradell	85,300	.....	.....	1905
Orange (C.) (Essex)	.....	.....	10,754	.....	.....	1929
Orange (C.) (Essex)	.....	.....	1,723	.....	.....	.....
Oxford (Twp.) (Warren)	.....	.....	80	.....	.....	.....
Palmyra (Twp.) (Warren)	.....	.....	80	.....	.....	.....
Pallanes Park (B.) (Bergen)	Borough	Pallanes Park	7,065	903	.....	1917
Palmyra (B.) (Burlington)	Borough	Palmyra	4,068	1,208	.....	1922
Parsons (B.) (Bergen)	.....	.....	2,228	.....	.....	.....
Park Ridge (B.) (Bergen)	.....	.....	2,220	.....	.....	.....
Parshippany-Fry Hills (Twp.) (Morris)	.....	.....	6,631	.....	.....	.....
Passaic (C.) (Passaic)	.....	.....	92,050	.....	.....	.....
Passaic (C.) (Passaic)	.....	.....	2,149	.....	.....	.....
Paterson (C.) (Passaic)	.....	.....	39,127	1,408	.....	1922
Paulsboro (B.) (Gloucester)	Borough	Paulsboro	1,273	.....	.....	Under Const.
Peapack-Gloucester (B.) (Somerset)	.....	.....	1,273	.....	.....	.....
Pemberton (Twp.) (Burlington)	Borough	Pemberton	1,258	200	.....	1895
Pennington (H.) (Mercer)	.....	.....	1,355	.....	.....	.....
Penna Grove (H.) (Salmon)	.....	.....	3,845	.....	.....	.....
Pennamuck (Twp.) (Morris)	.....	Pennamuck	16,915	.....	.....	.....
Perth Amboy (C.) (Middlesex)	City	Perth Amboy	45,516	.....	.....	1935
Phillipsburg (Town) (Warren)	Town	Phillipsburg	10,255	.....	.....	.....
Pilesgrove (Twp.) (Salmon)	.....	Lanatsong Township (part)	1,815	.....	.....	1920
Pine Beach (B.) (Ocean)	.....	.....	1,312	.....	.....	.....
Pine Hill (B.) (Camden)	.....	.....	40	.....	.....	.....
Pine Valley (Twp.) (Camden)	.....	.....	5,805	.....	.....	.....
Pittman (B.) (Gloucester)	Borough	West side of Pittman East side of Pittman	5,411	1,711	.....	1917
Pittman (B.) (Gloucester)	Borough	.....	2,091	388	.....	1918
Pilesgrove (Twp.) (Salmon)	.....	.....	54,422	.....	.....	.....
Plainfield (B.) (Middlesex)	City	Plainfield	11,560	1,314	.....	1921
Plainville (B.) (Middlesex)	.....	Plainville	1,215	.....	.....	.....
Plainville (B.) (Middlesex)	.....	.....	1,074	.....	.....	.....
Point Pleasant (Twp.) (Warren)	Borough	Point Pleasant Beach	2,058	1,372	.....	1908
Point Pleasant Beach (B.) (Ocean)	Borough	.....	3,194	.....	.....	.....
Pompton Lakes (H.) (Passaic)	Borough	Princeton Borough	3,738	.....	.....	1928
Port Republic (C.) (Atlantic)	Borough	Princeton Township	6,902	.....	.....	1905
Princeton (B.) (Mercer)	.....	.....	2,758	.....	.....	.....
Prospect Park (B.) (Passaic)	.....	.....	5,900	.....	.....	.....
Quinton (Twp.) (Salmon)	.....	.....	1,166	.....	.....	.....
Railway (C.) (Union)	.....	Railway	16,011	.....	.....	.....



STATUS OF SEWAGE DISPOSAL AS OF JUNE, 1889—Continued

MUNICIPALITY AND COUNTY	SYSTEM OWNED BY	MUNICIPALITY OR LOCALITY SERVED	Permanent Population (1930)		Sewer Connections (1939)	DATE PROJECTED	
			Original Plant	Existing Plant			
Ramsey (B.) (Berger)	Town	Town of Hartian	2,258	1,529	.....	.....	
Randolph (Twp.) (Morris)	Township	Chera Barton Section	2,405	403	1938	.....	
Raritan (Town) (Somerset)	Township	Piscataway Town Section	4,131	626	.....	.....	
Raritan (Twp.) (Middlesex)	Borough	Lead Bank	10,025	5,500	1902	1930	
Raritan (Twp.) (Middlesex)	Borough	East Side	1,698	.....	1922	1931	
Rearrington (Twp.) (Monmouth)	Borough	West Side	11,723	.....	1922	.....	
Rearrington (B.) (Morris)	Township	River Edge	4,477	1,781	1917	1950	
Ridgeland (B.) (Berger)	Township	Riverside	10,764	.....	1908	.....	
Ridgeland Park (Village) (Berger)	Township	Rockaway Township	12,488	.....	.....	.....	
Ridgeland Park (Village) (Berger)	Township	Roselle	1,052	.....	.....	.....	
River Edge (B.) (Morris)	Borough	Roselle Park	7,901	.....	.....	.....	
Riverside (Twp.) (Burlington)	Borough		2,210	.....	.....	.....	
Riverdale (Twp.) (Berger)	Borough		2,873	.....	.....	.....	
Riverdale (Twp.) (Berger)	Borough		1,768	.....	.....	.....	
Rockwell Park (Twp.) (Berger)	Borough		3,132	.....	.....	.....	
Rockway (Twp.) (Morris)	Borough		3,38	.....	.....	.....	
Rocky Hill (B.) (Somerset)	Borough		512	.....	.....	.....	
Roseland (B.) (Essex)	Borough		1,068	.....	.....	.....	
Roselle (B.) (Union)	Borough		13,021	.....	.....	.....	
Roselle Park (B.) (Union)	Borough		8,909	.....	.....	.....	
Rosbury (Twp.) (Morris)	Borough		3,879	.....	.....	.....	

MUNICIPALITY AND COUNTY		SYSTEM OWNED BY	MUNICIPALITY OR LOCALITY SERVED	Permanent Population (1930)		Sewer Connections (1939)	DATE PROJECTED	
Original Plant	Existing Plant							
Rumson (B.) (Monmouth)	Town	Rumson Sewage Disposal Company	2,073	2,456	.....	1912	.....	
Rummedale (B.) (Camden)	Township	Rutherford Joint Meeting	14,915	.....	.....	.....	.....	
Rutherford (B.) (Berger)	Borough		5,425	.....	.....	.....	.....	
Saddle River (B.) (Berger)	Borough		2,424	1,087	1938	.....	.....	
Saddle River (Twp.) (Berger)	Borough		8,038	807	.....	.....	.....	
Salem (C.) (Salen)	Borough		800	.....	.....	.....	.....	
Sarabeth (B.) (Middlesex)	Borough		800	.....	.....	.....	.....	
Scotch Plains (Twp.) (Union)	Borough		4,180	.....	.....	.....	.....	
Sea Bright (B.) (Monmouth)	Borough		800	.....	.....	.....	.....	
Sea Cliff (B.) (Monmouth)	Borough		800	.....	.....	.....	.....	
Sea Cliff (H.) (Cape May)	Borough		800	.....	.....	.....	.....	
Seaside (B.) (Atlantic)	Borough		800	.....	.....	.....	.....	
Seaside Park (B.) (Ocean)	Borough		800	.....	.....	.....	.....	
Seaside Park (H.) (Ocean)	Borough		800	.....	.....	.....	.....	
Secaucus (Town) (Hudson)	Borough		800	.....	.....	.....	.....	
Secaucus (Town) (Hudson)	Borough		800	.....	.....	.....	.....	
Shelton (B.) (Camden)	Borough		800	.....	.....	.....	.....	
Ship Bottom-Beach Arlington (B.) (Ocean)	Borough		800	.....	.....	.....	.....	
Shrewsbury (B.) (Monmouth)	Borough		401	.....	.....	.....	.....	
Shrewsbury (Twp.) (Monmouth)	Borough		277	.....	.....	.....	.....	
Somerset (B.) (Somerset)	Borough		807	.....	.....	.....	.....	
Somers Point (C.) (Atlantic)	Borough		1,151	.....	.....	.....	.....	
Somersville (B.) (Somerset)	Borough		2,073	.....	.....	.....	.....	
South Amboy (C.) (Middlesex)	City		8,255	1,706	1938	.....	.....	
Southampton (Burlington)	Borough		8,476	.....	.....	.....	.....	
South Plainfield (Monmouth)	Borough		1,037	.....	.....	.....	.....	
South Bound Brook (B.) (Somerset)	Borough		1,886	.....	.....	.....	.....	
South Brunswick (B.) (Middlesex)	Borough		1,708	.....	.....	.....	.....	
South Brunswick (Twp.) (Middlesex)	Borough		2,100	.....	.....	.....	.....	
South Hackensack (Twp.) (Hudson)	Township		1,000	.....	.....	.....	.....	
South Hackensack (Twp.) (Hudson)	Township		1,294	138	1939	.....	.....	
South Orange (Village) (Essex)	Borough		13,680	.....	.....	.....	.....	
South Plainfield (B.) (Middlesex)	Borough		13,827	.....	.....	.....	.....	
South River (B.) (Middlesex)	Borough		10,760	.....	.....	.....	.....	
South Toms River (B.) (Ocean)	Borough		405	.....	.....	.....	.....	
Sperrin (Twp.) (Sussex)	Borough		1,310	.....	.....	.....	.....	
Spring Lake (B.) (Middlesex)	Borough		1,326	.....	.....	.....	.....	
Springfield (Twp.) (Union)	Borough		8,725	.....	.....	.....	.....	
Spring Lake (B.) (Monmouth)	Borough		1,600	.....	.....	.....	.....	
Spring Lake (B.) (Monmouth)	Borough		1,745	.....	.....	.....	.....	













## Report of the Bureau of Food and Drugs

For the Year Ending June 30, 1939

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W. W. SCOFIELD, CHIEF

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This Bureau enforces laws passed by the Legislature to prevent the adulteration, misbranding, and substitution of inferior articles for standard foods and drugs, and also those laws passed to prevent the handling, preparation, storage and transportation of foods and drugs under unclean conditions.

The Food and Drug Act of this State was passed in 1907. This law has been amended by the passage of several acts, such as, the Sanitary Act, the Non-Alcoholic Beverage Act, the act prohibiting the use of sulphites in meats, and the act governing the production, handling and distribution of milk, cream and milk products. In addition to these laws, the Legislature has passed special laws governing the distribution and sale of oleomargarine, ice cream, "filled milk," methyl alcohol, and also laws governing the breaking of eggs, the storage of food in cold storage warehouses, the slaughtering of animals for food, and laws governing the production, sale and distribution of shellfish.

The Federal Food and Drug Act has been strengthened by the passage of a new act which includes regulatory control over cosmetics, over therapeutic devices intended for use in the diagnosis, cure, mitigation or treatment of disease in man or animals, and over the distribution and sale of "new" drugs unless adequately tested. The Federal Act applies to those foods, drugs, cosmetics and devices which are shipped in interstate commerce.

A bill was introduced in the Legislature of 1939, which was intended to make such changes in the laws of this State as to bring the requirements of New Jersey in harmony with the requirements as contained in the Federal Food, Drug and Cosmetic Act, but had not become a law at the close of the fiscal year.

The necessity for uniformity in State and Federal requirements is apparent when it is recognized that many foods, drugs, cosmetics, and devices manufactured or prepared in one State may be sold in and shipped to many states. It seems desirable to have the same requirements apply to the preparation and sale of foods, drugs, cosmetics and devices which are prepared and distributed solely within this State, as apply to these articles when shipped in interstate commerce.

*Dairy Farm and Milk Plant Inspection*—Eight inspectors make field investigations covering dairy farms, receiving stations and pasteurizing plants from which milk and milk products are obtained for distribution in this State.

Since these articles of food are prepared for our consumers in hundreds of milk plants receiving milk from many thousands of dairies, our investigations must of necessity cover only cross sections of the premises involved in the handling of our dairy products.

Our efforts are directed toward the problem of eliminating the unfit wherever the same is found and securing the safety and general fitness of our milk and milk products by educational means.

The following table shows the number of inspections of milk plants and dairy farms made by representatives of this Department during the year:

State	No. of Inspections of Milk Plants	No. of Inspections of Dairies
New Jersey .....	1,608	3,712
Delaware .....	7	21
District of Columbia .....	6	48
Maryland .....	4	464
Michigan .....	1	56
New York .....	125	3,371
Ohio .....	1	64
Pennsylvania .....	73	2,217
Virginia .....	1	19
	<hr/> 1,826	<hr/> 9,972

The following table shows the number of reports of inspections of milk plants and dairy farms received from local boards of health of this State:

State	No. of Inspections of Milk Plants	No. of Inspections of Dairies
Delaware .....	1	55
Maryland .....	2	52
Michigan .....	1	244
New York .....	42	3,965
Indiana .....	2	865
Ohio .....	2	435
Pennsylvania .....	21	2,791
Wisconsin .....	2	457
	<hr/> 73	<hr/> 8,864

*Collection of Milk, Cream and Milk Products*—During the year 5,136 samples of milk and cream collected by agents of this Department were examined chemically. None of these samples contained preservatives and a very small number of samples of milk had been adulterated with water. A small percentage of the samples collected failed to meet the legal standards for total solids or for milk fat.

*Ice Cream Factory Inspection*—In the inspection of ice cream plants, special attention has been given to the sanitation of factories and equipment and to the source of the raw materials used in the preparation of the ice cream. Under the laws of the State, it is necessary for manufacturers of ice cream to procure the milk, cream or ice cream "mix" intended for use in the manufacture of ice cream from plants holding permits from this Department.

During the year 1,166 inspections have been made of places where ice cream, sherbets or ices are manufactured for distribution in New Jersey, and 909 samples have been collected for examination. Of this number 53 samples were found to differ from the legal standard.

*Bakery Inspection*—The enforcement of the regulations governing the preparation and sale of custard filled pastry products, adopted in 1935, has been continued. A large number of bakers have provided mechanical refrigerators in which the custard fillings or the filled pastries are held pending sale. The filling devices are generally dismantled after use and thoroughly cleaned.

In our inspection of bakeries during the year, we have stressed the importance of cleanliness of the floors, sidewalls and ceiling of bakery rooms, of storage rooms, of dressing rooms and of toilet rooms. Special attention has also been given to the cleanliness of mixing machines, benches, racks, tables, utensils and equipment used in the preparation and handling of bakery products; to the cleanliness of clothing of employees and to the installation and proper use of facilities for the cleansing of hands of food handlers. Investigations have also been made of raw materials used in the preparation of bakery products to ascertain whether or not such materials are clean and wholesome and are stored in such a manner as to be protected from contamination by flies, dust and dirt.

In cases where insanitary conditions were found, the Bureau has followed the policy of advising bakers of objectionable conditions both verbally and in written notices. Reinspections are made in such cases within a reasonable period of time. In those cases in which the instructions to operate bakeries in compliance with the provisions of law were ignored, hearings were held, and, in certain cases, prosecutions for the collection of penalties have been instituted. In most cases marked improvement in the condition of bakery premises and the equipment used in the preparation of bakery products has been noted upon reinspection.

During the year 2,573 sanitary inspections of bakeries have been made by agents of this Bureau.

*Eggs*—The sale of infertile eggs which have been in incubators for 18 days and which are regarded as decomposed and unfit for food was found to be practiced again during the year. Our agents condemned 3,360 dozens of shell eggs, and 10,530 pounds of frozen eggs, which were found to be adulterated within the meaning of the law in that they were a filthy, decomposed product.

During the 1939 session of the Legislature, a law was enacted which provides that no person shall knowingly distribute or sell any eggs for human consumption which have been removed from incubators unless such eggs have been broken and denatured before removal from the premises on which the incubators are located. With the support of the poultry and egg industries of New Jersey, it is believed that the enforcement of this law will materially aid this Department in preventing the sale of decomposed and filthy eggs.

The assistance and co-operation of the agents of the Food and Drug Administration of the United States Department of Agriculture in these investigations is gratefully acknowledged.

*Non-Alcoholic Beverage and Bottled Water Plant Inspection*—Samples of water taken from springs or driven wells from which water is bottled for sale to the public as bottled water, or from which water is used in the preparation of non-alcoholic beverages have been collected and examined during the year. In certain cases it was necessary to prohibit the sale or use of the water because of impurities found upon examination.

During the year 467 inspections were made of beverage and water bottling plants and 318 samples were collected for analyses.

*Slaughterhouse and Meat Inspection*—During the year 438 inspections were made of the slaughterhouses in this State to ascertain whether or not these plants were being maintained and operated under sanitary conditions. These inspections show that these plants are operated in substantial compliance with the law.

During the year investigations were made of the practice of taking animals unfit for slaughter for food purposes because of grossly abnormal diseased or maimed conditions into licensed slaughterhouses. Legal action has been instituted for the collection of penalties in these cases.

Meat inspection has also been carried on in connection with the sanitary inspection of meat packing plants and meat markets. There have been collected 994 samples of ground beef, and 34 of these samples were found to contain sulphites in violation of law. Legal prosecutions have been instituted against persons offering such adulterated meat for sale.

*Canning Factory Inspection*—During the year 125 inspections were made of canning factories in this State. Special attention has been given to the sorting of raw materials to prevent the entrance of unfit substance into canned foods.

Because of a shortage of cranberries during the fall of 1938, certain canners were found placing upon the market canned cranberry sauce which had been prepared in part from mouldy and decomposed berries. Shipments of cranberries to canners in New Jersey from another state proved that a material percentage of the berries in certain shipments were decomposed. In order to prevent the sale of decomposed cran-

berry sauce, it became necessary for the canners to destroy the decomposed food.

During the year 18,736 cans of cranberry sauce, holding 17 oz. each; 72 twenty-five pound boxes, and 18 barrels of cranberries were destroyed.

*Penalties*—During the year \$6,417.30 was collected in penalties and costs for violations of the Food and Drug Laws.

*Fees*—The following fees were collected during the year for licenses and permits:

Cold storage licenses .....	29 @ \$10.00 .....	\$290.00
Goat milk permits .....	12 .....	54.41
Ice cream licenses .....	25 @ 100.00 .....	2,500.00
Ice cream licenses .....	9 @ 50.00 .....	450.00
Ice cream licenses .....	12 @ 25.00 .....	300.00
Ice cream licenses .....	32 @ 10.00 .....	320.00
Ice cream licenses .....	594 @ 5.00 .....	2,970.00
Milk plant permits .....	617 @ 25.00 .....	15,425.00
Narcotic drug licenses .....	2 @ 50.00 .....	100.00
Narcotic drug licenses .....	15 @ 5.00 .....	75.00
		\$22,484.41

SAMPLES OF MILK, CREAM, FOODS, DRUGS, COLLECTED FOR ANALYSES

	<i>Above Standard</i>	<i>Below Standard</i>	<i>Total</i>
Milk and cream .....	5,075	61	5,136
Foods .....	2,813	513	3,326
Drugs .....	756	130	886
Miscellaneous .....	45	17	62
	8,689	721	9,410

SANITARY INSPECTIONS MADE OF ESTABLISHMENTS WHERE FOODSTUFFS ARE  
PRODUCED, PREPARED, PACKED, STORED OR OTHERWISE HANDLED

	<i>Inspections</i>
Dairy farms .....	9,972
Milk plants .....	1,826
Ice cream factories .....	1,166
Non-alcoholic beverage and water bottling plants .....	467
Slaughterhouses .....	438
Cold storage warehouses .....	299

Egg breaking establishments .....	25
Restaurants .....	1,297
Bakeries .....	2,573
Meat markets .....	789
Meat packing plants .....	89
Drug stores .....	21
Pickle establishments .....	17
Candy factories .....	26
Canning factories .....	125
	19,130

*Cold Storage*—Title 24:9-12, Revised Statutes (the Cold Storage Act), provides that the State Director of Health shall extend the period of storage beyond 12 months for any particular article of food, providing the food is found to be in proper condition for further storage. A report on each particular lot of food on which extensions of time were granted shall be included in the annual report of the Director of Health. During the last fiscal year from July 1, 1938, to June 30, 1939, extensions of time were granted for the storage of food in cold storage, as follows:

<i>Quantity</i>	<i>Article</i>	<i>Extension Granted</i>
23,605 pounds	fresh meat	3 months
375 boxes	fresh fish	2 months
251 boxes	poultry	1 month
166 boxes	poultry	2 months
873 boxes	poultry	3 months
1,441 boxes	cheese	1 month
15,457 boxes	cheese	2 months
21,583 boxes	cheese	3 months
24,039 cans—30-lb.	egg yolk	1 month
25,423 cans—30-lb.	egg yolk	2 months
582 cans—30-lb.	whole egg	1 month
65,558 cans—30-lb.	whole egg	2 months
39,989 cans—30-lb.	whole egg	3 months
8,154 cans—30-lb.	egg yolk	3 months
395 cans—30-lb.	egg whites	3 months
276 tubs	butter	2 months
2,292 tubs	butter	3 months

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.

SUMMARY OF THE KINDS AND AMOUNTS OF FOODS IN COLD STORAGE WAREHOUSES IN NEW JERSEY ON THE LAST DAY OF EACH MONTH DURING THE YEAR 1935-1936

ARTICLE	July 1935	Aug. 1935	Sept. 1935	Oct. 1935	Nov. 1935	Dec. 1935	Jan. 1936	Feb. 1936	March 1936	April 1936	May 1936	June 1936
Eggs, cases	633,477	507,447	448,426	312,002	147,468	37,260	12,044	9,834	70,775	250,811	400,788	625,107
Eggs, broken, lbs.	10,690,736	11,098,324	10,546,969	9,981,443	9,025,281	7,826,338	6,011,831	5,628,807	5,381,044	5,341,858	6,090,203	7,013,047
Cheese, lbs.	5,792,873	6,070,830	6,894,727	6,418,921	6,032,288	5,775,008	5,037,926	4,400,929	3,701,111	3,388,883	3,492,653	4,062,357
Butter, lbs.	13,445,620	28,983,819	30,901,850	34,806,385	31,285,105	28,590,089	20,907,142	23,800,818	24,330,047	22,748,004	20,870,134	21,000,884
Poultry, lbs.	8,403,685	9,719,248	9,906,313	10,300,423	11,674,229	11,792,057	10,746,674	9,201,280	7,300,032	6,986,642	6,004,100	6,225,439
Fresh meats, lbs.	3,693,011	4,084,313	4,406,365	4,284,852	4,302,893	4,875,756	5,182,742	4,862,839	4,391,922	4,032,005	4,393,607	4,135,473
Fresh fish, lbs.	1,506,783	3,756,620	3,101,420	2,679,805	2,720,060	3,010,913	2,404,737	1,420,270	623,369	700,918	2,098,498	4,280,823
Milk and milk products, lbs.	1,380,874	901,104	1,103,300	1,041,238	929,803	656,373	478,540	307,188	523,729	187,884	240,400	300,051
Edible fats and oils, lbs.	251,692	36,977	28,878	21,711	20,655	37,944	37,844	51,069	37,333	27,310	10,704	22,095
Game, lbs.	1,300	2,622	495	1,260	2,103	5,017	3,482	1,825	1,884	1,104	901	733
Miscellaneous articles, pgs.	438,283	425,268	507,813	971,800	1,050,204	820,158	700,046	721,500	625,071	508,098	657,317	318,408

*Sanitary Shellfish Control*—Frequent inspection and sampling of the shellfish waters of the State, sampling of shellfish, and inspection of dealers occupied the major attention of the shellfish control force. The system of identification of the source of shellfish through the use of approved tags has been universally adopted by the shellfish producers of this State. Shipments received from other states are being constantly checked to see that all such shipments are properly identified so as to comply with the regulations of the Department.

The three field laboratories located in the major shellfish producing areas have exercised constant supervision of the industry so as to insure the production of a clean and safe shellfish supply for the consumers of this State and of the many other states to which the New Jersey product is shipped. In addition, certain research work has been carried on in an effort to secure necessary control data.

In the Raritan Bay section an intensive patrol of the border-line adjacent to condemned waters in New York State was maintained by joint activity with the State Board of Shellfisheries and New York authorities, to prevent illegally removed shellfish from gaining access to markets. Patrol was also made of the condemned areas within this State and a number of violators apprehended and prosecuted.

During the year the old shellfish patrol and laboratory boat, "Inspector," was retired after 26 years of hard service, and was replaced with a larger boat, which was purchased through funds provided by the Federal Government. This boat has been equipped with a complete shellfish control laboratory. The boat is engaged in the investigation and patrol of all of the shellfish producing waters of the State for a period of six months in each year. The provision of this larger and more seaworthy craft has enlarged the scope of the control by boat and permits a thorough coverage of the producing areas.

Investigation of shellfish producing waters in close proximity to areas inhabited by temporary summer population has indicated the necessity of careful and repeated supervision of such areas. With the increase in such population and the lack of adequate disposal of domestic wastes, it became necessary for the Department to condemn further areas for the removal of shellfish. During the year areas in Reed Bay, Back Thorofare, Patcong Creek and Cape May Harbor, were so condemned. A small portion of Manasquan River, which had been condemned, was again reopened.



During the year there were examined on the boat and in the field laboratories 573 samples of oysters, 467 samples of hard clams, 217 samples of soft clams, and 1,748 samples of water, making the total number of samples, 3,005. There were also made during the year 1,772 inspections of establishments from which shellfish are shipped in the shell, 170 inspections of shellfish shucking establishments, and 178 miscellaneous shellfish inspections, totaling 2,120 inspections.

## Report of the Bureau of Bacteriology

For the Fiscal Year Ending June 30, 1939.

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J. V. MULCAHY, CHIEF.

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The past fiscal year has been marked by an unusual expansion in the activities of this Bureau. The increase is especially evident in the examination of specimens in the serodiagnostic tests for evidence of syphilis. The enactment of the Pre-marital Medical Examination law requiring blood tests from applicants for marriage license, effective July 1, 1938, and the passage of an act requiring blood tests from pregnant women effective January 1, 1938, accounts for a large part of the increase in the diagnostic work of this laboratory. Another factor in the increased number of these specimens is due to the syphilis control program in this State. Specimens are submitted from venereal disease clinics, from enrollees in C.C.C. camps, from inmates in a number of State and county institutions, from employees in some of the industrial plants in the State, from food handlers where this examination is required by local ordinance and occasionally from other large groups.

### SYPHILIS

The blood examinations of these various larger groups are made to detect evidence of syphilis so those persons found to be infected may be brought under proper treatment.

It will be seen from Table I that 160,663 specimens were received for examination for evidence of syphilitic infection. Pre-marital blood tests were made on 30,757 blood specimens in this Bureau during the first year of the operation of this law. Of these tests 350 or 1.13 percent were positive.

For the six months of operation of the law requiring blood tests from women during pregnancy 11,593 blood tests were made. Of the individuals tested by the State laboratory 105 were found to be positive or 0.9 percent.

Kahn tests were made on 17,680 specimens of blood submitted for the Wassermann test.

These specimens are exclusive of the specimens examined in other laboratories in the State approved by the State Department of Health to perform standard blood tests for the marriage license law and pre-natal blood tests. Approval has been extended to each of these approved laboratories after inspection and approval issued when the person in charge has agreed to be responsible for the accuracy and reliability of the laboratory findings.

From reports submitted by 71 approved laboratories a total of 19,476 blood tests were made in compliance with the Pre-marital Law. Specimens for pre-natal blood tests examined by 93 approved laboratories totaled 5,156.

The article that follows appeared in the Quarterly Bulletin of the New York City Department of Health in the February, 1939 issue in reference to an arrangement regarding pre-marital blood tests. It will be seen that to issue the New York City forms it is required that the blood test be made in the laboratory of the New Jersey State Department of Health. We sometimes have requests from physicians for certificates on New York City forms on blood tests made in one of the approved laboratories. This can not be done as it is necessary to certify on the New York City certificate that the examination was made in the laboratory of this Department.

"At a recent conference of representatives of the New Jersey State Department of Health and the New York City Department of Health, an effort was made to adjust some of the seeming difficulties in connection with the proper administration of the New Jersey pre-marital examination laws. The following represents the essential points in the agreement reached.

I. The laboratory of the New York City Department of Health will execute the New Jersey pre-marital certificate in cases where it is indicated that the applicant intends to be married in New Jersey. It will return same to the examining physician with the confidential report on the result of the test. (Regular Health Department reports to be used for this purpose.)

II. (a) For New York City residents applying for pre-marital examinations but intending to be married in New Jersey a notation to this effect must be made by the examining physician on the form accompanying the blood specimens, so that the proper New Jersey certificates can be issued.

(b) For residents of New Jersey applying for pre-marital examination and intending to be married in New Jersey, the blood specimen should be forwarded to the laboratory of the State Department of Health, Trenton, New Jersey.

III. If a blood specimen is received by the laboratory of the New York City Department of Health without any indication that the applicant is to be married in New Jersey, the regular New York City certification will have been forwarded to the physician. If it later develops that applicant is to be married in New Jersey, the applicant may bring the certificate directly to the Wassermann laboratory of the New York City Health Department, 125 Worth Street, where a New Jersey certificate will be issued in lieu of the New York City certificate. The applicant must then take the New Jersey certificate to the physician for completion."

#### SPECIMENS EXAMINED

This table shows the total number of both bacteriological and serological tests made during the year.

TABLE I

#### TOTAL NUMBER OF SPECIMENS EXAMINED DURING FISCAL YEAR ENDING JUNE 30, 1939

Diphtheria .....	10,148
Tuberculosis .....	11,335
Typhoid fever .....	4,533
Typhoid bacilli (feces and urine) .....	6,370
Gonorrhoea .....	9,956
Syphilis .....	160,663
Miscellaneous specimens .....	11,352
Total .....	214,357

The examination of over 214,000 diagnostic specimens is an increase of 102,627 specimens above those examined last year, although the year 1937 showed a larger number of specimens examined than during any previous year.

#### COMMUNICABLE DISEASES

There is an increase in all the examinations for evidence of communicable diseases during the past year. The specimens are received from physicians of the State engaged in private practice, from physicians connected with State, county and city institutions and from physicians employed by some of the industrial plants in the State, from other bureaus of the Department and from local health officials. Many of these specimens are sent in from new admittances to State institutions as a routine procedure to prevent introducing cases or carriers of any communicable diseases into these institutions.

## TUBERCULOSIS

Sputum specimens to be examined for the presence of tubercle bacilli continue to increase yearly, mostly due to the submission of specimens from several institutions for the care of tubercular patients. These specimens are sent in periodically from these patients as a check on the treatment of these patients. Many of the sputum specimens are also received from physicians from patients under their care in their private practice.

## TYPHOID FEVER

Agglutination tests for the evidence of typhoid fever were made on 4,533 specimens. Many of these blood specimens were routine specimens from persons who showed no evidence of typhoid fever, but were sent in from various types of food handlers for examination together with feces and urine specimens. Most of these specimens are from men and women who are milk handlers of certified milk, New Jersey Official Grade "A" milk, food handlers in C.C.C. camps, recreational camps, from local boards of health and from food handlers in schools and colleges.

When the epidemiologists of this Department investigate cases of typhoid fever thought to be transmitted through food contamination by a typhoid carrier many specimens of feces and urine may be sent in for examination from a number of persons to detect a possible carrier who may be responsible for the infection. It will be seen from Table I that 6,370 specimens of feces and urine were examined during the year.

## MISCELLANEOUS SPECIMENS

The 11,352 miscellaneous specimens shown in this table comprise a variety of specimens listed under this heading, including examinations for rabies, amoeba, anthrax, paratyphoid fever, dysentery, hemolytic streptococci infection, malaria, meningitis, pneumonia, Rocky Mountain spotted fever, tularemia, undulant fever, Vincent's angina and other examinations shown in Table XI.

## PNEUMONIA

The State Legislature in March, 1939 passed an act authorizing the State Health Department to distribute anti-pneumococcus serum and in accordance with this act an appropriation was made for the free distribution of pneumonia serum to persons ill with pneumococcus pneumonia unable to pay for therapeutic serum, and providing that the sputum of these cases of pneumonia be typed to determine the type of specific serum required in the treatment of these cases. To make this typing promptly available in all sections of the State the approval of laboratories for this examination was carried out as is the approval for other diagnostic examinations affecting the public health.

Laboratories throughout the State were visited by representatives of the State Department of Health. The persons in charge were interviewed and the laboratory facilities and equipment for carrying on this work were observed. It was required that an application form be filled out by the director of the laboratory if he wished to be approved for the laboratory diagnosis of pneumonia. A printed list of approved laboratories was prepared and furnished to the physicians of the State, local health departments and other interested groups.

Technicians from some of the approved laboratories spent some time in the laboratory of this Department to observe the technique of typing specimens of sputum and to acquire facility in this examination, performed typing on specimens of sputum received in this Bureau under the supervision of the technician in charge of this work.

The technician who performs all examinations on specimens of sputum and other fluids for pneumococcus typing was assigned to this laboratory by the U. S. Public Health Service. The State Department of Health is co-operating with the U. S. Public Health Service to make these examinations so that information may be obtained regarding the types of pneumococci prevalent in cases of pneumonia occurring in New Jersey during the year.

This technician not only examined specimens of sputum received in this laboratory for diagnosis, but by arrangement with selected approved laboratories, specimens of sputum were received from these laboratories. For the purpose of collecting specimens from many of these approved laboratories the State was divided into three sections. One section was

in the southern part of the State, one in the central portion and one in the northern section of the State. The persons in charge of these laboratories located in the three sections of the State agreed to save all specimens of sputum received in their laboratories for pneumococci typing after they had made their own examination and reported on the result of their examination.

These specimens were to be kept in the refrigerator until collected by our messenger. This messenger collected these specimens on a regular schedule and brought them back for examination to the State laboratory. These specimens of sputum were then examined by the Neufeld test. Blood agar plates are made direct from the sputum. Mouse inoculations were made when necessary and cultures made from peritoneal fluid and heart blood of animals sick or dying.

The technician assigned to this work examined from 10 to 20 specimens of sputum daily and was kept very busy handling these specimens. A complete record was kept of the types found by either of the above methods and furnished to Dr. Adolph Rumreich of the U. S. Public Health Service who is in charge of the pneumonia survey in the states where these examinations are being made.

The total number of examinations made from August, 1938 through June, 1939 was 1,829 specimens. Of this number pneumococci were found in 1,474. A table showing the types and number of each type found, is shown in a table in the report of the Bureau of Local Health Administration appearing in the 1939 annual report of the New Jersey State Department of Health.

Of the 356 specimens in which no pneumococci were found, hemolytic streptococci were found in 80 specimens, non-hemolytic streptococci found in 10 specimens, staphylococci found in 58 specimens, Friedlanders bacillus found in 13 specimens, unidentified organisms found in five specimens and no significant organisms found in 190 specimens.

It is interesting to note that multiple types of pneumococci were found in each of 45 specimens of sputum and that 102 specimens of sputum that did not show pneumococci on direct typing or on blood agar plates made from sputum were found after inoculation of mice intraperitoneally. Typing was done on the peritoneal fluid of the mouse and blood agar plates made from the heart blood.

During the year besides mouse inoculations for pneumococci, 434 inoculations were made in other animals. Of this number 103 specimens of urine were inoculated for evidence of renal tuberculosis. Seven of these specimens were found to be positive, 89 negative and seven unsatisfactory.

Inoculations of 95 animals were made on 30 specimens of sputum for evidence of tubercle bacilli, four of these were found positive, 23 specimens negative and three unsatisfactory. Injections were made of body fluids for evidence of tubercular infection on 65 specimens. Of these 18 specimens were found positive and 47 did not show any lesions of tuberculosis.

#### ANIMAL INOCULATIONS

Subdural inoculations were made on 186 animals with emulsions made from the brains of animals sent in for examination for rabies. Inoculations are made on these specimens for rabies only when the microscopic examination fails to show Negri bodies and are used as a confirmatory check on all negative microscopic findings if it is known that persons have been bitten, or when the brain is so badly decomposed that a satisfactory microscopic examination can not be made. Of these 186 injections two animals developed rabies.

Inoculations for the virulence of diphtheria bacilli were made on 31 cases where the organism persisted in the throat of convalescent cases of diphtheria for an unusually long time and from well persons who are found carriers of these organisms. Of these 31 specimens for virulence tests, 10 specimens showed the organism tested to be virulent. No evidence of virulency could be found in the 21 other specimens tested.

Other inoculations were made in seven instances for evidence of *B. abortus* infection, one of rabies vaccine for evidence of bacterial infection and for evidence of active virus, a specimen of blood for anthrax and a few other unusual inoculations.

#### ROCKY MOUNTAIN SPOTTED FEVER

Cases of Rocky Mountain spotted fever occurring in this State resulted in a number of blood tests being received from suspected cases for examination. One case of Rocky Mountain spotted fever was in a girl who in the early stages of the disease gave an agglutination in a dilution

of 1-40; partial at 1-80. This case ran a typical course somewhat complicated with a bronchial pneumonia. Type XV pneumococci was found in a specimen of sputum submitted for examination. The bronchial condition cleared up promptly under treatment. The child was very sick during its attacks of spotted fever infection but eventually recovered. A specimen of blood obtained during convalescence gave an agglutination reaction in a dilution of 1-1280.

### RABIES

Rabies has been more prevalent in New Jersey during the year than has for the past 10 years as will be seen in the following table:

TABLE II

YEARLY TOTALS OF ANIMALS EXAMINED FOR RABIES FROM 1930 TO 1939, INCLUSIVE

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939
Positive .....	96	80	177	130	86	72	150	82	138	262
Negative .....	121	114	123	121	93	94	121	138	110	237
Unsatisfactory .....	11	8	27	21	10	12	12	12	17	26
Total .....	228	202	327	272	189	178	283	232	265	525

Almost 100 percent more examinations over last year were made of animals suspected of having rabies. The number found rabid in this laboratory is close to 100 percent more than found to be affected with rabies last year when 138 were found to be rabid. The figures on rabies shown in Table II include only the examinations made by the Bureau of Bacteriology and are exclusive of examinations that are made in several other laboratories located in the northern part of the State. Quarantine regulations put in force by the State Department of Health in many localities in the State where rabies occurred will without doubt reduce the prevalence of this disease.

Table XII shows the species of animals, mostly dogs, that have been received for examination for rabies. In Table XIV is shown the municipalities arranged by counties from which animals were found to be rabid on examination.

### UNDULANT FEVER

Table XII shows the examinations made on specimens of blood from suspected cases of undulant fever.

### CULTURE MEDIA AND MAILING OUTFITS

Table XV shows the number of mailing cases prepared for shipment to various repositories located in drug stores and offices of local boards of health, and in many instances directly to the physicians of the State. These outfits are distributed for the collection and transmission of specimens from suspected cases of communicable diseases and comply with the postal regulations relating to the transmission of diseased material through the mail.

The assembling of 272,664 of these outfits, involving as it does the preparation of sterile swabs, vials and other glassware, has kept those engaged with this phase of the laboratory work very busy.

The demand for culture media is growing larger constantly as the number of water and sewage samples increase, and a larger engineering force is put in the field to collect samples in the operation of these purification plants.

We received and filled orders for media totaling over 3,055 liters, requiring several hundred thousand tubes and bottles. This demand has kept our limited number of sterilizers running at capacity most of the time.

### PERSONNEL

I wish to acknowledge my appreciation of the conscientious and loyal services of the technical staff and other employees of this Bureau whose services have made it possible to handle the large increase in the number of examinations made during the year. To do this has required much overtime on the part of these employees requiring work on every Sunday and holiday and many evenings.

Without the funds allotted to this Bureau from the Social Security Budget providing the employment of technical assistants and laboratory assistants and helpers it would not have been possible to accomplish this volume of work. The one bacteriologist paid from these funds assists in the examination of the bacteriological specimens. The tech-

nicians employed with the aid of these funds assist in the serodiagnostic tests for syphilis. The laboratory assistants help assemble the mailing outfits for the collection of specimens, tube and sterilize culture media and sterilize glassware. These laboratory assistants and laboratory aids, also paid from these funds, wash all used tubes and bottles and all the chemical glassware, water collecting bottles and miscellaneous glassware.

The passage of the Pre-marital Law and the Pre-natal Law and the issuance of certificates for marriage license has greatly increased the clerical work. The clerk-typists and one clerk-stenographer provided from this budget enable the clerical force to keep up with the increased work.

The funds allotted for laboratory supplies augmenting the State appropriations allows for the purchase of materials and supplies for conducting the examination of specimens of blood for evidence of syphilis and other examinations.

It will be seen in the tables that follow the various examinations made during the year and the scope and extent of the work of the laboratory.

TABLE III

SPECIMENS EXAMINED FOR DIPHTHERIA BACILLI, DURING FISCAL YEAR ENDING JUNE 30, 1939, BY MONTHS

Month	Positive	Negative	Unsatisfactory	Total
July	22	487	20	529
August	21	459	19	499
September	15	788	18	821
October	33	793	23	849
November	26	521	7	554
December	58	1,143	23	1,224
January	34	746	22	802
February	32	1,093	40	1,165
March	50	1,144	30	1,224
April	42	644	30	716
May	27	518	18	563
June	33	1,121	48	1,202
Total	393	9,457	298	10,148

During the year twenty-six tests were made for the virulence of the diphtheria bacillus.

TABLE IV

SPECIMENS EXAMINED FOR TUBERCLE BACILLI, DURING FISCAL YEAR ENDING JUNE 30, 1939, BY MONTHS

Month	Positive	Negative	Unsatisfactory	Total
July	127	735	10	872
August	114	703	8	825
September	127	777	7	911
October	120	768	11	899
November	124	729	6	859
December	96	738	4	838
January	131	967	9	1,107
February	133	875	4	1,012
March	175	996	3	1,174
April	101	812	28	941
May	125	918	12	1,055
June	98	738	6	842
Total	1,471	9,756	108	11,335

TABLE V

SPECIMENS EXAMINED FOR TYPHOID FEVER REACTION, DURING FISCAL YEAR ENDING JUNE 30, 1939, BY MONTHS

Month	Positive	Negative	Unsatisfactory	Total
July	10	308	8	326
August	15	517	19	551
September	15	583	22	620
October	14	336	8	358
November	4	277	9	290
December	10	379	11	400
January	5	307	12	324
February	6	321	10	337
March	10	331	19	360
April	4	247	6	257
May	4	260	9	273
June	6	424	7	437
Total	103	4,290	140	4,533

TABLE VI

SPECIMENS OF FECES AND URINE EXAMINED FOR TYPHOID BACILLI, DURING FISCAL YEAR ENDING JUNE 30, 1939, BY MONTHS

Month	Positive	Negative	Unsatisfactory	Total
July .....	15	472	6	493
August .....	15	539	6	560
September .....	27	1,020	18	1,065
October .....	26	607	8	641
November .....	23	265	3	291
December .....	22	478	4	504
January .....	24	464	1	489
February .....	8	488	5	501
March .....	14	643	2	659
April .....	8	336	1	345
May .....	1	301	1	303
June .....	8	509	2	519
Total .....	191	6,122	57	6,370

TABLE VII

SPECIMENS EXAMINED FOR GONOCOCCI (PUS SMEARS), DURING FISCAL YEAR ENDING JUNE 30, 1939, BY MONTHS

Month	Positive	Negative	Unsatisfactory	Total
July .....	132	792	29	953
August .....	164	740	42	946
September .....	134	742	18	894
October .....	114	677	18	809
November .....	128	815	12	955
December .....	90	582	17	689
January .....	122	615	14	751
February .....	99	563	16	678
March .....	102	755	13	870
April .....	93	604	12	709
May .....	118	668	21	807
June .....	116	760	19	895
Total .....	1,412	8,313	231	9,956

TABLE VIII

MISCELLANEOUS SPECIMENS EXAMINED DURING FISCAL YEAR ENDING JUNE 30, 1939, BY MONTHS

Month	Positive	Negative	Unsatisfactory	Total
July .....	131	507	10	648
August .....	159	803	18	980
September .....	205	631	13	849
October .....	220	610	8	838
November .....	227	496	8	731
December .....	280	551	3	834
January .....	410	587	9	1,006
February .....	523	879	10	1,412
March .....	525	894	7	1,426
April .....	416	594	4	1,014
May .....	278	466	7	751
June .....	213	644	6	863
Total .....	3,587	7,662	103	11,352

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, 1939, BY MONTHS

MONTH	4+	3+	2+	+	±	-	Uns.	Total
July	424	53	27	49	78	9,044	307	9,982
August	417	62	22	110	92	11,004	485	12,192
September	491	102	29	107	125	11,082	295	12,231
October	468	91	34	73	84	11,498	232	12,480
November	420	102	45	62	71	10,441	275	11,416
December	336	78	42	49	65	10,528	313	11,261
January	431	78	91	45	115	13,477	464	14,901
February	314	45	48	45	66	12,617	499	13,832
March	611	22	54	57	116	15,714	454	17,023
April	353	29	47	30	71	12,356	308	13,191
May	456	49	49	39	60	14,388	376	15,423
June	545	51	61	43	88	15,466	530	16,721
Total	5,516	750	549	707	1,081	147,352	4,758	160,663

TABLE X

SPECIMENS OF BLOOD AND SPINAL FLUID EXAMINED FOR SYPHILIS (COMPLEMENT FIXATION TEST), WITH CHOLESTERNIZED ANTIGEN, DURING FISCAL YEAR ENDING JUNE 30, 1939, BY MONTHS

MONTH	4+	3+	2+	+	±	-	Uns.	Total
July	607	1	..	206	41	8,820	307	9,982
August	656	..	..	187	98	10,726	485	12,192
September	894	..	..	296	156	10,390	295	12,231
October	825	2	..	157	106	11,157	232	12,480
November	739	3	..	133	110	10,156	275	11,416
December	700	3	6	171	112	9,556	313	11,261
January	831	24	18	167	115	13,088	604	14,901
February	746	13	5	164	76	12,328	499	13,832
March	903	9	10	210	142	15,300	454	17,023
April	592	7	4	168	86	12,928	308	13,191
May	758	8	1	134	101	14,030	396	15,423
June	845	3	5	188	120	15,930	530	16,721
Total	9,136	72	49	2,179	1,264	143,205	4,758	160,663

TABLE XI

MISCELLANEOUS SPECIMENS EXAMINED, POSITIVE, NEGATIVE AND UNSATISFACTORY DURING FISCAL YEAR ENDING JUNE 30, 1939

Specimen for	Positive	Negative	Unsatisfactory
Rabies	262	237	26
Amoeba	3	21	5
Anthrax	..	2	..
Bacterial infection (body fluids, blood, feces, pus, urine, sputum, etc.)	1,222	247	19
B. tuberculosis (body fluids, feces, pus and urine)	44	285	1
B. typhosus (bile, blood, corn, mucous, vomitus and water)	..	20	..
Paratyphoid fever (blood reaction for)	1	1,827	16
B. paratyphosus (bile, feces, blood, mucous, urine, vomitus and water)	30	1,281	1
B. dysenteriae (feces)	2	99	..
Dysentery (blood reaction for)	5	23	1
Hemolytic streptococci (throat cultures)	349	1,103	1
Malarial parasite (blood)	2	29	3
Meningococci	..	15	..
Ophthalmia neonatorum	47	31	3
Pneumonia	1,256	378	14
Rocky Mountain spotted fever (blood reaction for)	6	36	1
Streptococci (milk)	2	2	..
Treponema pallida	1	1	..
Tularemia	7	88	..
Typhus fever (blood reaction for)	12	46	..
Undulant fever	80	1,354	8
Vincent's angina	194	406	2
Special examination of restaurant utensils	2	59	..
Other unusual examinations	60	72	2
Total	3,587	7,662	103
Grand total	..	..	11,352

TABLE XII

SPECIMENS EXAMINED FOR EVIDENCE OF BRUCELLA INFECTION, DURING FISCAL YEAR ENDING JUNE 30, 1939

	Positive	Negative	Unsatisfactory
Undulant fever	..	..	..
Agglutination test of human blood	77	1,348	7
Urine (culture for type of organism)	..	1	1
B. Abortus	..	..	..
Agglutination test of cow's milk	3	5	..
Total	80	1,354	8
Grand total	..	..	1,442



TABLE XIII

RABIES SPECIMENS, SPECIES OF ANIMALS, POSITIVE, NEGATIVE AND UNSATISFACTORY  
EXAMINED DURING FISCAL YEAR ENDING JUNE 30, 1939

Dogs—Positive, 262; negative, 218; unsatisfactory, 25.  
Cats—Negative, 14.  
Calves—Negative, 3.  
Goats—Negative, 1.  
Rats—Unsatisfactory, 1.  
Squirrels—Negative, 1.

TABLE XIV

MUNICIPALITIES, ARRANGED BY COUNTIES, FROM WHICH RABID ANIMALS WERE  
EXAMINED DURING FISCAL YEAR ENDING JUNE 30, 1939

Burlington County—Bordentown, 1; Columbus, 1; Delanco, 1; Mt. Holly, 1; Riverside, 1.  
Camden County—Camden, 1; Gloucester, 1; Merchantville, 1; Woodlynne, 1.  
Essex County—Bloomfield, 2; Caldwell, 1; Cedar Grove, 7; Maplewood, 1; Montclair, 1; Nutley, 1; Orange, 3; Upper Montclair, 1; Verona, 3; West Orange, 1.  
Hunterdon County—Clinton, 2; Frenchtown, 1.  
Mercer County—Dutch Neck, 1; Hopewell, 6; Penns Neck, 1; Princeton, 4; Trenton, 3.  
Middlesex County—Carteret, 7; Highland Park, 2; Jamesburg, 2; Metuchen, 1; New Brunswick, 7; Old Bridge, 1; Perth Amboy, 7; Plainsboro, 2; Sayreville, 1; South Amboy, 2; Stelton, 18; Woodbridge, 3.  
Monmouth County—Asbury Park, 2; Freehold, 1; Matawan, 1; Neptune, 2; Oakhurst, 1; Red Bank, 2.  
Morris County—Boonton, 1; Dover, 19; Madison, 3; Mendham, 3; Morris Plains, 1; Morristown, 7; Netcong, 1; Towaco, 1.  
Ocean County—Toms River, 1.  
Passaic County—Mountainview, 6; Passaic, 3.  
Somerset County—Bernardsville, 3; Bound Brook, 1; Middlebush, 1; Neshanic, 1; North Plainfield, 7; Raritan, 4; Skillman, 2; Somerville, 12; South Bound Brook, 3; Watchung, 1.  
Sussex County—Newton, 3; Sussex, 1; Vernon, 2.  
Union County—Cranford, 9; Fanwood, 1; Linden, 10; Mountainside, 3; New Providence, 1; Plainfield, 1; Rahway, 5; Springfield, 1; Summit, 8; Westfield, 14.  
Warren County—Belvidere, 2; Hackettstown, 5; Hope, 1; Port Colden, 1; Washington, 3.

TABLE XV

MAILING CASES FOR THE COLLECTION AND TRANSMISSION OF SPECIMENS SUPPLIED  
TO PHYSICIANS AND REPOSITORIES THROUGHOUT THE STATE DURING  
FISCAL YEAR ENDING JUNE 30, 1939

Diphtheria—Regular mailing cases .....	14,643	
Serum tubes and swabs .....	772	
Extra swabs .....	2,372	
		17,787
Tuberculosis mailing cases .....	16,987	
Typhoid fever mailing cases .....	3,178	
Malaria mailing cases .....	79	
Gonorrhoea mailing cases .....	14,610	
Feces and urine mailing cases .....	9,928	
Pneumonia mailing cases .....	795	
Treponema pallida mailing cases .....	61	
Ophthalmia neonatorum mailing cases .....	100	
Syphilis mailing cases .....	209,139	
		272,664
Total .....		

TABLE XVI

CULTURE MEDIA PREPARED DURING FISCAL YEAR ENDING JUNE 30, 1939

Endo agar .....	200,000	c. c.
Brilliant green agar .....	90,000	c. c.
Infusion agar .....	1,250	c. c.
Plain agar .....	154,000	c. c.
Double strength broth .....	680,000	c. c.
Single strength broth .....	1,440,000	c. c.
Infusion dextrose broth .....	3,750	c. c.
Infusion broth .....	2,500	c. c.
Sheep serum broth .....	1,250	c. c.
Nutrient broth .....	1,250	c. c.
Brilliant green lactose broth .....	10,000	c. c.
Brilliant green bile .....	350,000	c. c.
Blood serum .....	13,600	c. c.
Dilution water .....	107,500	c. c.
		3,055,100
Total .....		

## Report of the Bureau of Chemistry

For the Year Ending June 30, 1939

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JOHN E. BACON, CHIEF

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The Bureau of Chemistry makes chemical and bacteriological examinations of samples of foods, drugs, water, sewage and trade wastes collected by the department's representatives in the enforcement of the Public Health Laws of New Jersey. The facilities of the laboratory are also extended to local boards of health, State Department of Public Instruction, State Purchasing Commissioner, New Jersey State Police, Fish and Game Commission, Milk Control Board, State Institutions and State Tax Department. Analyses are also made of various samples of foods and supplies purchased under specifications for institutional use, rural school waters submitted by local boards of education, drinking water, lakes and streams from camps maintained by benevolent associations and other miscellaneous samples.

Assistance is given to local boards of health and waterworks laboratories desiring to install chemical control or supplement existing laboratory facilities. Instructions in chemical procedures are given the personnel of such laboratories when requested. The Bureau makes investigations of those establishments producing chemicals which give rise to obnoxious, objectionable fumes and furnishes expert advice to local boards of health to assist in abatement of such nuisances.

There were 22,150 samples of foods, drugs, water, sewage and miscellaneous preparations examined during the past year, a decrease of 230 samples, 1.1 percent. There was, as usual, an increase in the work in the water and sewage laboratory nine percent, but a decrease in the food and drug laboratory of 10 percent accounted for by the inspection force submitting less samples of milk and meat products for examination.

The "completed" test for members of the coli-aerogenes group is now performed on all samples of drinking water and the "confirmed" test upon all other samples, thus standardizing the bacteriological examination in accordance with approved methods. This service was made possible by the added laboratory facilities and personnel provided with Social Security moneys.

While it is expected greater use will be made of laboratory facilities on account of field investigations of roadside stands and eating establishments along highways leading to the New York World's Fair, only a normal increase in the work of the Bureau is anticipated unless the recommendations in the report of the Sub-Committee on Sanitation of the Expanded Committee on Public Health of the State of New Jersey are adopted in part or full and necessary funds provided.

TABLE SHOWING NUMBER AND CHARACTER OF SAMPLES EXAMINED IN FOOD AND DRUG LABORATORY DURING THE FISCAL YEAR ENDING JUNE 30, 1939

	<i>Above Standard</i>	<i>Below Standard</i>	<i>Total</i>
Milk .....	5,068	49	5,117
Bacteriological milk .....	32	...	32
Chocolate milk .....	45	8	53
Cream .....	173	1	174
Ice cream .....	889	52	941
Frozen products .....	15	5	20
Hamburg .....	1,019	31	1,050
Pork sausage .....	181	1	182
Frankfurters .....	13	13	26
Tomato products .....	28	2	30
Eggs .....	6	6	12
Cheese .....	14	1	15
Butter .....	86	1	87
Fruit for arsenic spray .....	231	20	251
Soft drinks .....	138	77	215
Cranberry sauce .....	68	229	297
Olive oil .....	138	43	181
Honey .....	34	1	35
Water .....	11	1	12
Relish .....	18	5	23
Extract .....	40	6	46
Miscellaneous .....	36	10	46
<b>Total food</b> .....	<b>8,283</b>	<b>562</b>	<b>8,845</b>
Argyrol .....	91	27	118
Camphorated oil .....	115	1	116
Citrate of magnesia .....	92	2	94
Cod liver oil .....	63	2	65
Chloroform liniment .....	3	2	5
Hydrogen peroxide .....	62	3	65
Spts. of nitre .....	195	101	296
Tincture of iodine .....	83	...	83
Witch hazel .....	85	2	87
Miscellaneous .....	27	4	31
Urinalysis .....	121	2	123
Blood count .....	10	...	10
<b>Total drugs</b> .....	<b>947</b>	<b>146</b>	<b>1,093</b>
<b>Total food and drugs</b> .....	<b>9,230</b>	<b>708</b>	<b>9,938</b>

## DEPARTMENT OF HEALTH

SAMPLES ANALYZED IN WATER AND SEWAGE LABORATORY FROM JULY 1, 1938, TO JUNE 30, 1939

1938	Total samples	Public water supplies	Fay samples	Camp samples	Miscellaneous samples	County and State Institutions	Dairy samples	Bottled waters	School supplies	Bathing waters	Watershed samples	Stream samples	Sewage samples	Trade waste samples	Sand samples	Experimental samples	Sort samples	
July	1,429	371	10	48	94	17	4	51	3	5	.....	402	437	5	1	7	.....	
August	1,735	522	21	60	166	12	2	54	7	13	.....	402	222	13	1	30	208	
September	809	231	10	6	81	5	2	36	3	.....	.....	246	166	23	.....	.....	.....	
October	1,115	299	4	7	68	13	.....	23	52	.....	.....	132	473	22	8	12	.....	
November	860	269	7	4	29	8	.....	21	119	.....	.....	104	306	3	.....	.....	.....	
December	444	219	1	.....	40	14	1	3	132	.....	3	10	18	2	1	.....	.....	
1939																		
January	885	282	7	.....	62	25	5	.....	152	.....	8	.....	43	1	.....	300	.....	
February	1,110	224	2	.....	25	41	2	.....	137	.....	92	4	183	.....	.....	400	.....	
March	1,219	372	4	.....	213	9	5	18	43	2	25	22	180	10	16	300	.....	
April	620	309	3	.....	50	18	.....	5	15	.....	90	5	2	29	3	100	.....	
May	1,063	381	3	6	133	16	2	36	18	.....	95	61	265	27	2	18	.....	
June	914	378	13	25	85	10	11	13	12	6	52	50	227	16	10	6	.....	
	12,212	3,857	85	156	1,046	188	32	260	693	26	365	1,406	2,524	151	42	1,155	208	

## Report of the Bureau of Maternal and Child Health

For the Calendar Year 1938

JULIUS LEVY, M. D., CONSULTANT

## MATERNAL MORTALITY

New Jersey continues to show the result of its special work in the last few years in reducing maternal mortality. The 1938 rate was the same as the 1937 rate, 3.3, which was the lowest in the history of the State. This is almost half the rate of the years previous to 1932.

Credit for this encouraging result must be given to the organized efforts of the Medical Society of New Jersey, and the active cooperation between the medical profession and this Bureau with the Medical Societies.

The proportion of maternal deaths during the first six months of pregnancy has decreased eight percent from 1937 and 11 percent from 1936.

The chief cause of maternal mortality is puerperal septicemia, followed by puerperal hemorrhage, toxemias and septic abortion.

*Obstetrical Consultatives*—During the year obstetrical consultatives were called in 108 instances by physicians attending women of the low-wage group at home.

*Delivery Nurse Service*—There is also available for the low-wage group, a delivery nurse service. Properly trained, registered, experienced nurses may be called by the doctor to assist him in home deliveries. In communities where there are visiting nurse associations, the staff nurses have been called. The qualifications of other nurses are carefully examined by the supervisor of delivery service. Four institutes were held in different parts of the State for these nurses for specific training in obstetrical techniques.

There were 308 nurses who assisted physicians in 1,340 home deliveries.

## INFANT MORTALITY

The 1938 infant mortality rate for New Jersey is 39 per 1,000 live births. This is the same as the 1937 rate which was the lowest in the United States.

While there has been no decrease in the infant deaths under one day, it should be noted that there has been a considerable decrease in the still-birth rate. This has decreased from 42 in 1920 to 26 in 1938. This 40 percent decrease has occurred mostly since 1932.

The infant death rate under one month has decreased from 38 in 1920 to 24 in 1938, a decrease of 36 percent. This decrease has been gradual.

Of the 21 counties in the State, Cape May, with an infant mortality rate of 21, continues to have the best record, while Ocean, with a rate of 60, has the highest rate. Both of these counties are rural and single-year variations do not have much significance. Of the urban counties, Bergen, with a rate of 30, continues to be low, followed by Essex with a rate of 34 and Passaic with 35.

East Orange, with a rate of 24, continues to have the low rate among the 10 largest cities. Elizabeth, usually among the low rates, had the highest rate, 54.

Of the cities with a population between 25,000 and 50,000, Garfield had the lowest rate, 17. Perth Amboy had the highest rate in this group, 44.

Among the cities with a population between 10,000 and 25,000, Ridgefield Park had the lowest rate, eight. The highest rate in this group occurred in Hackensack, 52.

## BABY KEEP-WELL STATIONS

There were 181 Baby Keep-well Stations conducted by the nurses associated with the Bureau. Half these stations had physicians in attendance. These stations are conducted for mothers of the low-wage group that they may understand the proper development of their babies, the value of medical supervision and receive guidance in care, feeding and management.

## EXTENSION OF HEALTH SUPERVISION

During 1938 there were 197 nurses under the supervision of the Bureau working in 500 communities. This was an increase of three nurses since 1937. As the nurses' salaries are assumed by the community after a period of demonstration, the salaries released can be used for new demonstrations.

During the year, nurses were placed in the following communities for the demonstration period:

Bergen County— East Rutherford Emerson Woodcliff Lakes Rochelle Park Glen Rock	Cumberland County— Landis Twp. (third)	Somerset County— Hillsborough Twp. Montgomery Twp. Rocky Hill
Camden County— Lindenwold Voorhees Twp.	Middlesex County— Monroe Twp. Madison Twp.	Union County— Cranford
	Morris County— Jefferson Twp. Mount Arlington	

There were 31 communities that assumed whole or part of the nurses' salary as follows:

Bergen County— Cresskill Moonachie North Arlington Montvale Carlstadt Lyndhurst	Middlesex County— Woodbridge South Amboy Sayreville Helmetta Jamesburg South River Cranbury	Somerset County— Montgomery Twp.
Camden County— Oaklyn West Berlin Twp.	Sussex County— Fredon Twp. Hamburg Twp. Wantage Twp. Lafayette Twp.	
	Salem County— Oldsman Twp. Lower Alloway Twp. Mannington Twp. Elsinboro Twp. Quinton Twp. Elmer Upper Pittsgrove Alloway Twp.	Warren County— Blairstown Twp. Hardwick Twp. Allamuchy Twp.

## STATISTICAL SUMMARY OF THE NURSES' WORK

Of the 197 nurses supervised by the State Department of Health, 141 were paid entirely by the communities in which they work, 32 were paid partly by the State and partly by their communities, and 24 were paid entirely from State or Social Security funds.

These nurses had under their supervision 10,460 expectant mothers, 28,230 babies, 56,335 children between the ages of one and six, and 137,056 school children.

Visits made in the homes by the nurses .....	420,678
To expectant mothers .....	45,088
To babies .....	158,511
To children between 1 and 6 .....	140,444
To school children .....	76,635
Visits to Baby Keep-well Stations .....	94,913
By babies .....	71,473
By preschool children (1 to 6) .....	23,440
Prenatal advice (expectant mothers) cases supervised .....	10,460
Total pregnancies terminated .....	6,499
Attendants at births—	
Hospital .....	3,836
Doctor at home .....	2,215
Midwife .....	436
Not specified .....	12
Infant care, babies supervised .....	28,239
New cases .....	15,397
Preschool care, children 1 to 6 supervised .....	56,335
New cases .....	16,446
Illnesses and defects detected (not including school child) .....	10,490
Corrected .....	6,156
Cases referred to proper authorities for care or correction .....	10,633
Prenatal cases .....	2,917
Relief cases .....	2,393
Contagious diseases (suspected) .....	3,075
Tuberculosis cases (suspected) .....	614
Venereal disease .....	123
Unsanitary conditions .....	660
Behavior problems .....	851

Little Mother Leagues conducted .....	797
Dental clinics (nurse assisting) .....	1,397
Children under five years of age vaccinated .....	5,421
Children under five years of age immunized .....	7,951
School Children—	
Inspections (annual, general or assisting doctor) .....	921,021
Defects detected .....	129,701
Corrections .....	56,804
Pupils excluded by principal .....	18,912
Children receiving toxoid .....	3,886
Cultures taken .....	578

## NUTRITION CLASSES

Co-operation with the New Jersey Extension Service in Agriculture and Home Economics has continued and lectures have again been presented by members of that staff to nurses in this Bureau. If requested, the county demonstration agents assist the nurses with particular food and budget problems.

## TRAINING OF PERSONNEL

During the year 1938, three classes of one month's duration each were held by the educational advisor in the demonstration department of the Bureau of Maternal and Child Health. The purpose of these classes was to prepare the new nurses for field work under the supervision of the Bureau. Seven of these nurses were paid and sent for preparation by municipalities that were asking for State supervision.

## AFFILIATION OF STUDENT NURSES

Arrangements were made for affiliation of student nurses in training schools with the Bureau of Maternal and Child Health. Student nurses interested in public health work will come into the Bureau's demonstration center for one month's instruction and training in public health nursing.

Lectures have also been given to senior classes of nurses in local hospital training schools for the purpose of creating interest in public health.

## EXHIBITS

Charts and electrified pictures indicating the work of the Bureau were shown at various places throughout the State, as follows:

Health Officers' Conference, Trenton  
 Women's Auxiliary of American Legion, New Brunswick  
 Bureau Conference at Elizabeth  
 Ocean County Health Department  
 Bergen Pines, Bergen County  
 Medical Society of New Jersey, Atlantic City  
 State Organization for Public Health Nursing, Atlantic City  
 Atlantic County Health Week  
 Health Week, Elizabeth  
 Parent-Teachers' Conference, Atlantic City

## MIDWIFERY

During the year 1938 there were 300 licensed, registered midwives in New Jersey. Of these, 266 were supervised by the State Department of Health and 34 were under the local supervision of Jersey City. Since 1933, there has been a decrease of 133 in the number of midwives registered.

Of the 300 registered midwives, 68 did not deliver any cases during the year and 173 delivered less than 12 cases during the year.

Investigations during the year proved that there were no unlicensed midwives practicing.

While the number of births for 1938 showed an increase of 866 over the 1937 total, the number of births delivered by midwives continued to decrease. The midwives delivered 2,117 of the total births or four percent. In 1918, the midwives delivered 30,000 or 42 percent of the total births of the State.

Counties in which midwives delivered the largest number of births were:

	<i>Percentage</i>
Somerset .....	16
Middlesex .....	13
Union .....	6
Bergen .....	5

Midwives delivered more than 10 percent of the births in the following cities:

	<i>Percentage</i>
Carteret .....	29
Perth Amboy .....	21
South River .....	17
Garfield .....	13
Elizabeth .....	13
Hoboken .....	10

During the year the eight county associations continued to hold interesting meetings. There were 68 meetings with an attendance of 843. The lectures at the meetings were given by local physicians and the supervisors gave various demonstrations and reviewed the lectures given by the doctors.

The midwives under the supervision of the Bureau referred 970 pre-natals for health supervision to doctors or clinics. This number was 45 percent of the total cases delivered by them.

There were 38 special investigations, 10 for puerperal deaths, five infant deaths, 15 stillbirths and eight abnormal cases.

Complaints against three midwives were heard by the State Board of Medical Examiners. Two had their licenses revoked and one had her license suspended.

## BIRTHS BY PLACE OF OCCURRENCE

Of the 56,042 births in New Jersey, 78 percent were delivered in hospitals, 18 percent were delivered in the homes by physicians and four percent were delivered by midwives.

County	Total Births	Percent delivered by physicians at home	Percent delivered by midwives	Percent delivered in hospitals
Atlantic	1,690	31	2	67
Bergen	3,354	14	5	81
Burlington	1,244	38	3	59
Camden	3,991	25	3	72
Cape May	283	62	..	38
Cumberland	1,159	39	..	61
Essex	12,042	7	3	90
Gloucester	871	61	(.2)	39
Hudson	9,006	9	4	87
Hunterdon	268	88	(.3)	12
Mercer	3,038	24	2	74
Middlesex	2,979	24	13	63
Monmouth	2,009	19	1	80
Morris	1,431	21	2	77
Ocean	455	33	..	67
Passaic	5,200	11	3	86
Salem	588	50	(.3)	50
Somerset	809	18	16	66
Sussex	505	49	..	51
Union	4,599	12	6	82
Warren	521	56	..	44

## ILLEGITIMATE BIRTHS

There were 1,455 births out of wedlock, an increase of 139 since 1937. Among these births were eight sets of twins. Fifty-three percent of the mothers were under 21 years of age. Births by residence of mother were as follows:

County	Number Illegitimate births	Percent of the total illegitimate births	Percent of Total Births, Illegitimate
Atlantic	93	6.3	5.6
Bergen	59	4.0	1.1
Burlington	51	3.5	3.5
Camden	121	8.3	3.2
Cape May	14	.9	3.7
Cumberland	57	3.9	5.2
Essex	296	20.2	2.5
Gloucester	34	2.3	3.0
Hudson	166	11.3	1.8
Hunterdon	24	1.6	5.1
Mercer	79	5.3	2.8
Middlesex	65	4.1	2.1
Monmouth	60	4.0	2.8
Morris	32	2.2	1.9
Ocean	14	.9	2.7
Passaic	85	6.1	1.6
Salem	38	2.6	5.1
Somerset	17	1.1	1.5
Sussex	14	.9	2.9
Union	92	6.3	2.0
Warren	27	1.8	4.2
Out of State residents	17		

## MATERNITY HOMES

There were 25 maternity homes licensed by the Department during the year, six were new homes and 19 were renewals. Only one home was licensed for more than four patients.

Homes were conducted as follows:

- 4 by graduate nurses
- 12 by practical nurses
- 6 by physicians
- 3 by licensed midwives



The number of cases delivered in these homes for the year was 423. There were five stillbirths, two infant deaths and no maternal deaths.

Regular inspections were made of all maternity homes and any abnormal cases were carefully investigated.

#### AUDIOMETER

A new audiometer purchased in 1938 has been in constant use. The audiometer is rented to boards of education at a nominal fee, with the result that it is operated and maintained at no cost to the State.

During the last three months of 1938, there were 12,564 children tested for hearing defects. There were 1,136 defects found among them. These children were referred to their family physicians. Seating arrangements in the class-room were adjusted with the result that many backward pupils showed improvement in their work.

#### MENTAL HYGIENE AND PARENT-CHILD RELATIONSHIPS

A mental hygiene program which was incorporated into the activities of the Bureau three years ago continues its aim of helping families to better understanding and practices in the rearing of their children and in parent-child relationships.

The importance of the influence of the home and the parent-child relationship upon the formation of character and personality, and the adjustment of the individual to life is increasingly being recognized. Survey and research indicate that the pre-school years are the most important, and that emphasis must be placed on the prevention of faulty handling and poor parent-child relationships, rather than on early detection and cure, if we wish to attempt to reduce the great number of cases of behavior difficulties in children delinquencies and maladjustments in adult life.

The preventive mental hygiene program is carried out by the staff of District Supervisors and nurses. They teach the mothers of the infants, pre-school and school children, whom they visit throughout the State, about child nature and development so that they may understand, anticipate and prevent behavior problems in the important early formative years of childhood. The program is under the direction of an advisor

in mental hygiene and parent-child relationship who is continuing the instruction and training of the staff.

For the purpose of carrying out this program, the general plan is courses of study for the staff, field work, distribution of the bibliographies for reading, actual demonstration by home visits, individual interviews of staff with Advisor in Mental Hygiene, distribution to nurses and to mothers of carefully selected pamphlets for reading. There have also been organized discussion meetings and conferences of nurses and supervisors in their districts and supervisors' conferences with the Advisor in Mental Hygiene.

*Courses of Study for the Nurses*—A foundation course on *The Care, Understanding and Guidance of Children*, integrating the physical, mental and emotional development of the child has been given at the University of Newark and at Camden for nurses who have not already taken this course. During the past year, 35 nurses matriculated at Newark University and 46 nurses at Camden. Supervisors and nurses had taken courses for the previous three years in parent-child relationships under the auspices of the Department.

An advanced course called Mental Hygiene in Parent-child Relationships was given at Newark with the sponsorship of the University of Newark and at Camden under the sponsorship of New York University, for nurses who had completed the basic courses and desired further instruction in this field of work.

It is encouraging to find so great an interest in this new aspect of their work, and so great a realization of its importance on the part of the nurses that of the 210 nurses supervised by this Bureau, only eight have not taken these courses.

The courses of 30 hours each semester, for which those eligible receive college credits, include assigned reading, the preparation of written material, and field trips to nursery schools, children's courts, and staff meetings of mental hygiene clinics.

During the past year a course called *Racial Contributions to American Culture* was taken at New York University by the supervisors and selected nurses of the Department.

An understanding of preventive mental hygiene has been included in the instruction of new nurses in the demonstration district.

*Discussion Meetings and Bibliography*—Nurses who have completed formal college courses have been organized into discussion groups of from five to 10 members according to localities in which they work. They meet once a week to read and discuss books in the field of child development or parent-child relationships. A competent discussion leader chosen from among their own personnel acts as chairman of these meetings. At the present time, 25 reading and discussion groups are in existence.

Through the cooperation and help of the Bureau a large proportion of our nurses have purchased books on parent-child relationships and subscribed to the magazine published by the Child Study Association of America.

*Conferences*—Nine conferences of assistant supervisors and district supervisors with the Advisor in Parent-child Relationships were held in 1938. At these sessions there has been discussion of the assigned reading in the mental hygiene field, consideration of supervisor's instruction in and control of mental hygiene work of nurses, and the study of the practical application of mental hygiene principles.

*Pamphlets*—During the year, pamphlet material, available at the present time and published by mental hygiene organizations and child research centers of universities throughout the United States, was examined.

From the mass of pamphlets read, 20 additional pamphlets were selected and ordered for future distribution to our nurses. The sources of these pamphlets were the National Committee for Mental Hygiene, the Iowa Child Welfare Research Division of the University of Iowa, the Institute of Child Welfare of the University of California, the New York State College of Home Economics of Cornell University and the Child Study Association of America. With the monthly distribution of these pamphlets to our nurses goes instructions for proper study, so that the nurses may make application of what they learn to their work. The district supervisors hold monthly conferences with their nurses for discussion of pamphlet material.

*Actual Demonstration by Home Visits*—Practical demonstrations, in actual home situations, of the theory and subject-matter studied and read have been given the nurses. After a nurse finishes a course of study, the supervisor in parent-child relationships spends a day or two with the

nurse visiting homes in her district for purposes of observation, demonstration and instruction. Visits were made with 74 nurses during the past year.

*Revised Manual*—The manual entitled *Suggestions to Nurses Correlating Important Phases in Physical, Mental and Emotional Development of the Pre-school Child*, compiled originally by the first Assistant Supervisor of Nurses and the Advisor in Parent-child Relationships, was revised to meet more adequately the needs of the nurses. It has been distributed to all the nurses, who are using it for reference, for further study and for their visits to mothers.

*Personnel*—In addition to the direct introduction of preventive mental hygiene and parent-child relationships material into the work of the nurses with the mothers, further effective results of this new addition to the work of the Bureau have been realized. The general program of child hygiene teaching is helped when nurses gain a better understanding of mothers' emotional life, attitudes and behavior, and fashion their guidance to meet particular situations and needs in the homes they visit.

Furthermore, nurses have been gaining insight into their own attitudes, prejudices and emotional reactions, and the influence of these on the effectiveness of their work. Nurses have also been influenced in their personal lives and helped to understand and solve difficulties by understanding gained in the courses taken, the reading and discussion, and by consultation with the advisor.

*Advisory Committee on Mental Hygiene*—An advisory committee for consultation and advice on the mental hygiene activities of the Bureau began to function during the year. The committee is composed of Dr. Joseph E. Raycroft, Director of Mental Hygiene of the Department of Institutions and Agencies; Dr. George S. Stevenson, Director of the National Committee for Mental Hygiene; Professor Frederick J. Gaudet, Head of the Department of Psychology of the University of Newark; Dr. Lewis Henry Loeser, psychiatrist; and Dr. James S. Plant, Director of Essex County Juvenile Clinic.

*Cooperation*—Although the incorporation of preventive mental hygiene activities, as a part of the work of a child health nurse is still in an experimental stage, it is encouraging to know that this program is receiving

encouragement and recognition by health departments and psychiatrists throughout the country. Requests for information about our work and for copies of the Manual, the Syllabus of Study we have arranged for our nurses, and our Bibliography are frequently being received. An account of the work has appeared in the January 1939 issue of the Quarterly published by the National Committee for Mental Hygiene.

## Report of the Division of Venereal Disease Control

For the Year Ending June 30, 1939

KARL M. SCOTT, M. D., CHIEF (ACTING)

During the year 1938-39 the Division of Venereal Disease Control, feeling that the foundation of its program had been well laid in the previous years, continued its activities along the same general lines.

Two new features of venereal disease control made their appearance during the year. These were the Premarital and the Prenatal Examination Laws.

### PREMARITAL EXAMINATION LAW

The New Jersey law requiring blood tests and physical examinations for syphilis before marriage became effective July 1, 1938. In order to determine how well this law is being observed and how effective it is in finding syphilis cases and in preventing the marriage of infected persons "in a stage which may become communicable," frequent check-ups have been made with the Bureau of Vital Statistics, physicians, local registrars, laboratories, and health officials. After the law had been in effect for six months a detailed report was presented at the Annual Conference of State and Local Health Officials, February 17, 1939. This appeared in the April issue of "Public Health News" (official publication of this Department). Revised and extended to nine months, this report was printed in the May, 1939, issue of "The Journal of Social Hygiene." Salient points covering the full year are summarized below:

*Decrease in Marriages in the State.* While there was a reduction in the number of marriages performed in New Jersey after this law became effective, no one can tell how much of this decrease is due to the marriage law and how much to economic conditions. Decreases were much smaller in the later months of the year.

	<i>Decrease</i>
From previous year (July 1937—June 1938) .....	8,190—22%
From average of three previous years (July 1935—June 1938).....	4,563—14%

*Whites and Negroes.* More complete data are available on the relative proportions of syphilis among white persons and negroes from the premarital tests than from any other source. The ratio of whites and negroes showing positive tests is shown in the following table which includes 80 percent of all premarital blood tests made in the State and from which all duplicate tests have been eliminated.

WHITE AND NEGRO PRE-MARITAL BLOOD TESTS FOR SYPHILIS  
FOR THE FISCAL YEAR JULY 1, 1938—JUNE 30, 1939

Laboratory		Percent of persons tested who were positive	
		Whites	Negroes
State	(year)	0.47	10.0
Hudson County	(year)	0.74	15.4
Newark City Hospital	(6 mos.)	1.00	13.3
Camden Health Department	(6 mos.)	1.07	5.9
Totals for 47,921 tests		0.60	11.0

The total number of pre-marital blood tests made in all laboratories was 62,764 of which 847 or 1.35 percent were positive. A deduction of 10 percent in this number of positives should be made because of duplicate tests.

A questionnaire was sent to physicians to learn what happened to marriage applicants whose blood tests were positive. The following tables summarize 206 answers to these questionnaires.

WHAT HAPPENED TO 206 MARRIAGE APPLICANTS WITH  
POSITIVE BLOOD TESTS FOR SYPHILIS

Marriage certificates granted, case being regarded as non-communicable	93	45 percent
Marriage certificates refused	113	55 percent
	206	100 percent
Did not get married	71	63 percent
Married out of state	18	16 percent
Results not known	24	21 percent
Total	113	100 percent

TREATMENT OF 206 MARRIAGE APPLICANTS THREE MONTHS  
AFTER POSITIVE BLOOD TEST FOR SYPHILIS

Persons under treatment	113	55 percent
Persons not under treatment	34	16 percent
Persons disappeared	59	29 percent
	206	100 percent

Of those reported as failing to take treatment in the above table, slightly more than half have been located and placed under treatment.

### SUMMARY

With very few exceptions, one or two a month, the marriage records now reach the State Bureau of Vital Statistics accompanied by the laboratory's and physician's certificates properly made out.

The drop in marriages in the State from the previous year ran up to 37 percent a few months after the law went into effect, but the average monthly decrease for the second half of the year was 14.5 percent.

Laboratory reports indicate that some 760 persons have been found to have syphilis by this premarital procedure, many of whom, it appears, had no previous knowledge of their infection.

Most of the tests are made free at public laboratories.

Positive tests are equally divided between men and women.

From a check of more than 80 percent of the tests, it appears that syphilis is almost 20 times as prevalent among young adult negroes as among whites.

Physicians are ready and willing to tell the State Health Department confidentially what has been happening to the persons who have positive premarital tests.

Cooperation can be secured from physicians and health officials in following up most of the delinquents.

Physicians and registrars questioned and the reactions of the public and press indicate that the law is well received, has valuable educational features, and is a sound procedure in public health.

Excellent cooperation is being received from the laboratories of Hudson County, Newark City Hospital, and Camden, whereby it is possible to collect many additional facts and figures on this subject.

### PRENATAL LAW

The law requiring physicians and midwives to secure blood tests for syphilis on pregnant women under their care went into effect January 1, 1939.

It is difficult to determine with any high degree of accuracy how well this law is being observed, for two reasons:

1. There is no requirement that physicians indicate which blood samples sent to laboratories are from prenatal cases.
2. Birth certificates are not yet all being marked with a statement of whether or not the test was made and, if so, the date, as specified by the law.

Most of the laboratories approved for blood tests for syphilis have reported as well as they can the numbers of prenatal tests which they have made during the first six months of the law:

58 laboratories—19,752 prenatal tests—272 positives—1.37 percent.

There is no accurate way of separating the tests of negroes from those of the whites, but what evidence we have indicates relative percentages of positives as 6.0 percent and 0.4 percent, respectively.

Of the 4,916 birth certificates filed for the month of March, 1939, only 56 percent indicate whether or not prenatal tests had been made. In May, birth certificates giving records of blood tests had increased to 69 percent. There is a wide range of completeness in reporting, all the way from none in some districts to 100 percent in others.

From this collection of information for May births, the time in pregnancy when 3,232 blood tests were made is indicated below:

	<i>Percent</i>
Tests prior to fifth month of pregnancy .....	20
Tests in fifth month .....	17
Tests in sixth month .....	14
Tests in seventh month .....	13
Tests in eighth month .....	8
Tests in ninth month .....	20
Month not stated .....	8

Among the 143 stillbirths, only 36 percent of the women were reported as having been tested during pregnancy.

A more complete report on the workings of this law will be available next year.

### THE EPIDEMIOLOGIC AND FOLLOW-UP PROGRAM

An epidemiologic approach to the control of syphilis and gonorrhea has long been accepted in this State as an important part of the program. This year attempts have been made, as enumerated in the following paragraphs, to increase knowledge and improve esprit de corps among workers employed in venereal disease case-finding and case-holding programs throughout the State. Two meetings were held during the year, one at Elizabeth which was attended by 25 workers giving all or most of their time to venereal disease work. A representative of the New York City Bureau of Social Hygiene attended this meeting and discussed the case work program of New York City. Informal discussion followed of methods used and results obtained in tracing contacts by workers in various parts of the State.

The second meeting was held in Trenton. Twenty workers attended and heard brief reports from members of the staff of the State Division of Venereal Disease Control about the State program, the efforts being made to standardize blood tests, the testing of migrant workers in the potato growing sections of the State, and the results of the new prenatal and premarital laws. Miss Mary D. Forbes of the U. S. Public Health Service attended this meeting. These meetings have been valuable in giving the workers an opportunity to know each other and exchange experiences.

Three regional symposiums were held during the year in Vineland, Metuchen and Newark, to which were invited all public health nurses, social workers, health officers, and clinic physicians. At each of these symposiums the morning session was devoted to formal lectures on medical phases of syphilis control and case work techniques. The afternoon session was an informal discussion of actual cases taken from the records of a syphilis clinic, with an attempt to evaluate what had been accomplished for the patient and the community. These symposiums were attended by 250 persons, most of them public health nurses who at least occasionally have to deal with the problems of the syphilitic patient or contact.

At the annual meeting of the New Jersey Health and Sanitary Association in Asbury Park, November, 1938, a group of five public health nurses, working in venereal disease clinics in New Jersey, carried on a

round-table discussion of case material under the leadership of the social worker at the syphilis clinic of the Hospital of the University of Pennsylvania. Discussions centered around means of gaining the cooperation of the patient or alleged contact and advantages to be derived, as compared to the use of coercive measures. The discussions were published in full in the Public Health News\*. This round-table discussion was attended by many health officers and others engaged in public health work in New Jersey.

This year the policy has been continued of providing scholarships for nurses to the three-months' course in applied epidemiology at the Institute for the Control of Syphilis, University of Pennsylvania. One public health nurse employed by the State Department of Health, one employed by a local health department, and two working with local public health nursing organizations were sent this year, making a total of 13 public health nurses employed in this State who have had the advantage of the course. It is felt that this group is an important nucleus around which to develop a more effective case-finding and case-holding program.

The five nurses previously employed by the Division of Venereal Disease Control to strengthen the epidemiologic program, have been continued. Four have continued in demonstrations undertaken previously, with headquarters at Passaic, Hackensack, Camden and Weehawken. A new demonstration was undertaken this year in Morris County, with the workers' headquarters at the district health office in Dover. Through gaining the cooperation of patients, these workers have located 300 infected contacts and arranged for treatment. Irregularity in treatment, mostly among clinic patients, has been investigated in more than 1,500 instances by these workers, and through letters and home visits the importance of regular treatment has been explained to the patient who has voluntarily resumed his treatment with his physician or at the clinic. Help has been given in occasional cases requiring institutional care. In addition, these nurses participated with health officers, physicians, city officials, and civic leaders in promoting community education, group testing plans, and other activities.

The Division appreciates the cooperation of other workers who, although not employed by the Division have cooperated by sending monthly

\* December, 1938, and February, 1939.

reports of results obtained in contact tracing and case holding, and assisted in other ways. Acknowledgment is also made of the valuable assistance of Miss Jane Cook, for many years medical social worker of the Orange Venereal Disease Clinic, and during the past year chairman of the social hygiene committee of the State Organization for Public Health Nursing, who has given generously of her time and knowledge in developing the program in New Jersey.

Two members of the staff of the Division of Venereal Disease Control served on the social hygiene committee of the State Organization for Public Health Nursing, and one member of the staff served on the sex education committee of the New Jersey Social Hygiene Society.

Follow up by mail to all physicians reporting cases of early syphilis continues to bring excellent response from the physicians. A summary of this particular activity follows:

A STUDY OF ALL CASES OF PRIMARY AND SECONDARY SYPHILIS REPORTED AS UNDER PRIVATE TREATMENT DURING TWELVE MONTHS, MARCH, 1938 TO FEBRUARY, 1939

Results of a questionnaire sent to physicians three months, on an average, after the original report of each case.

Total cases (309 primary; 707 secondary) .....	1,016	
Total physicians .....	402	
Questionnaires answered .....	987	97 percent
Physicians who answered .....	387	96 percent

		Percent
* Cases still under treatment by doctor (after 3 mos.) .....	587	58
† Referred to other doctor or clinic .....	119	12
Report changed—not early case .....	34	3
Delinquent (See results of follow-up below) .....	223	22
Moved away .....	13	1
Committed to institutions .....	5	1
Died .....	4	
Cured .....	2	
Physician failed to return questionnaire .....	29	3
Total .....	1,016	100

\* Physicians are being requested for information relative to these 587 cases one year after original reports.

† Check up with clinics indicated that of 33 patients referred, 21 were actually being treated.

Results of follow-up by local Boards of Health of 4223 patients reported as delinquent on questionnaire.

	Percent	
Patients returned (or promised to return) to physician .....	78	35
Patients referred to clinics .....	38	17
Patients moved away or could not be located .....	74	33
Cases pending (June 12, 1939) .....	33	15
<hr/> Total .....	<hr/> 223	<hr/> 100

‡ Annual report for 1937 states that only 29 delinquents were reported to the Division from all sources.

### EDUCATIONAL

The policy of this Division to make available authentic information on the venereal diseases and social hygiene has been continued. Special efforts in acquainting the public with the reasons for the recently enacted premarital and prenatal laws have evidently been helpful in getting these laws to run smoothly. Leaflets, made up of questions and answers about each law, have been distributed in large quantities to physicians, registrars of vital statistics, health officials, and others. These leaflets have been given away at local meetings of various kinds and have been reproduced in full by some newspapers.

New publications of the Division during the year were: *Plain Facts*, numbers 7, 8 and 9, newsy bulletins about the many phases of the venereal disease campaign; *The Dentist and Syphilis* (reprint) by M. J. Exner, M. D.; *Syphilitic Scars of the Spirit* (reprint) by Austin W. Cheever, M. D. Numerous other booklets have been purchased from various sources. Several new ones on the subject of industry and syphilis are being used in our attempts to interest employers in offering free blood tests to workers.

New posters and improved exhibit material were designed and made during the year. Motion pictures continue to be in demand and were shown at many meetings. Cooperation from the press has been good throughout the year, as shown by our clipping service.

In addition to the two regular lecturers, Elizabeth Ford Love, M. D., was employed on a per meeting basis and gave talks on "Sex Education in the Home" before parent-teachers associations, women's clubs, and a

few groups of high school girls. Table of lectures given by all employees in the Division and the attendance follows:

Name of Group	Number Meetings	Attendance
Parent-Teacher associations .....	96	4,650
Children of high school age .....	65	9,037
Civilian Conservation Corps .....	57	24,923
Rotary clubs .....	17	452
Women's clubs .....	16	675
Lion's clubs .....	13	355
Men's clubs .....	11	816
Kiwanis clubs .....	8	283
Nurses .....	7	515
Community meetings .....	3	495
Medical societies .....	2	50
Political clubs .....	1	175
Miscellaneous .....	24	2,525
	<hr/> 320	<hr/> 44,951

Below is a recapitulation of the number of meetings at which lectures were given, the total attendance, and the pamphlets distributed for each year since 1935:

	Number of Meetings	Attendance	Pamphlets Distributed
1935 .....	408	61,175	33,527
1936 .....	353	43,841	18,438
1937 .....	365	43,433	61,615
1938 .....	423	45,500	134,527
1939 .....	320	44,951	123,776
	<hr/> 1,869	<hr/> 238,900	<hr/> 371,883

Social Hygiene Day was observed again this year being promoted to a great extent by the American and New Jersey Social Hygiene Associations. This Department was one of the sponsors and took an active part in a very successful State-wide meeting on the general subject of Social Hygiene in Newark on April 27. More than 400 persons attended.

## DATA TO PHYSICIANS

A systematic plan to provide physicians of the State with up-to-date facts on syphilis and gonorrhoea was put into effect during the year. There were 472 subscriptions to "Venereal Disease Information" (U. S. Public Health Service) given to a selected group. Copies of suggestions about the interpretation of laboratory reports on premarital and prenatal blood tests were sent by mail to all registered physicians in the State. The three booklets from the U. S. Public Health Service, listed below, were also widely distributed:

"Diagnosis of Syphilis by the General Practitioner"  
 "Management of Syphilis in General Practice"  
 "Gonococcus and Gonococcal Infections"

Two courses of one day a week for six weeks, were offered to New Jersey physicians; one in Philadelphia in charge of Dr. John H. Stokes; the other at Orange Memorial Hospital carried on under the supervision of the late Robert R. Sellers, M. D. The total registration was 42.

## GROUP TESTING

In January, 1939, a plan was launched to encourage the blood testing of large groups of employed persons. This plan was evolved in joint discussion with the venereal disease committees of the New Jersey Health Officers Association, the State Medical Society, and the President of the New Jersey Society of Clinical Pathologists.

Fundamentally this plan was based upon the desire to use all existing laboratory facilities in the State for the wide-spread testing for syphilis in large groups. The New Jersey Society of Clinical Pathologists with a membership of 43 are the only organized group of laboratory chiefs in the State and therefore the logical group to approach. They offered a fee schedule ranging from \$0.50 to \$1.00 per test depending upon the number of tests to be done for each employer.

This plan and fee schedule were then sent to health officers in industrial communities, with a request for their cooperation in presenting the plan to employers and their assistance in dealing with the positive cases that might be found by this method.

In April a physician was engaged on a part time basis and, in addition to services for Bureau of Local Health Administration, has presented this plan to the management of certain industries in northern New Jersey.

To date the cost to the companies of having the tests made outside the State Laboratory seems to be the stumbling block.

Independently of this plan the physicians in many plants have added the blood test for syphilis to their examination for employment and to their annual physical examination, most of the tests being made in the State Laboratory. New employees, if found to be infected, are often rejected for employment, but if old employees prove to be infected they are usually retained conditional to their placing themselves under treatment.

Information furnished us from such plants is as follows:

<i>No. Examined</i>	<i>No. Positive</i>	<i>Percentage positive</i>
15,410	257	1.7

A large company, who do their own tests, report the following for their seven New Jersey plants:

<i>No. Examined</i>	<i>No. Positive</i>	<i>Percentage positive</i>
14,151	564	4.0

C. C. C.

The Division's activities in the Civilian Conservation Corps have continued. Fifty-seven talks were given, with a total attendance of 24,923. Included in this number were some 12,000 enrollees who were sent from Fort Dix to many of the western camps. Preventive measures have been stressed and cooperation has been given by the enrollees in volunteering to submit to blood tests.

New cases of venereal disease found in the C. C. C. camps in New Jersey are immediately reported to the Division, and the patient interviewed as soon as he reaches the army hospital which, in about 60 percent of cases, results in tracing the source. As soon as the patient is able to be discharged from the hospital the Division is notified, and a notification is immediately sent to the health officer in the town in which the patient resides.



During the year the Division has been successful in obtaining the consent of the War Department to examine the blood of each and every enrollee for evidence of latent syphilis, and having such persons treated without being discharged. This work has been continued from last year among the camps of the State of New Jersey, where there are approximately 9,000 young men between the ages of 18 and 25. With a new enrollment occurring every three months this means the examination of about 12,000 young men and free treatment for all who are found syphilitic. Drugs are furnished by the State Department of Health, and the treatment given at any one of the army hospitals located in the State.

#### INCREASE IN CLINIC FACILITIES FOR THE YEAR 1938-39

New clinics were established in cooperation with local boards of health in Boonton, Dover, Madison in Morris County; Point Pleasant Beach, Ocean County; and three in Roselle (physicians' offices); and one in Nutley. A special clinic was established at Shell Pile near Port Norris, because examination of about 500 colored workers showed that over 100 of them had syphilis. This special clinic has been operating three times weekly, and is planned to continue this way till 40 treatments have been administered to these patients. After their completion of this course of treatment, it will be considered that they have been rendered permanently noninfectious (Cooperative Clinical Group recommendation to the Surgeon General of the U. S. P. H. S.). This special clinic was largely supported by State funds as such large number of patients in such a small community made the cost of treatment too great for local funds to participate up to 50 percent of the cost as is being done elsewhere.

Because of an increase in the clinic load, the clinics at Bordentown, Burlington and Moorestown, Woodbury, Vineland, Weehawken, and Dover, extended their clinic hours since January 1, 1939.

In addition, the boards of health of Paterson, Plainfield, Summit and Salem County, and Mays Landing (other local boards cooperating) wishing to increase their medical personnel and extend their clinic hours and facilities, asked for the Department's financial aid. This was granted. These various factors doubled the State outlay for the payment of clinic physicians during the last half of the year.

#### FREE DRUGS

Drugs and clinic supplies to the amount of \$25,500.00 were purchased during the year. Nearly all the clinics in the State were supplied in part or wholly by the Department.

A steadily increasing demand for free drugs to be used for their low fee patients has been presented by the physicians of New Jersey. To illustrate, in June, 1938, anti-syphilitic drugs and their adjuncts, sufficient to provide 5,242 individual doses, were sent to physicians, and in June, 1939, 9,150 doses were sent. This is an increase of nearly 80 percent in demand.

The employment of an assistant physician from July 1, 1938 gave the Division an opportunity to keep in closer touch with the problems of various clinics operating in the State, all of whom were visited by this physician several times throughout the year. By this method it is hoped to gradually improve clinic standards and to coordinate the administration of venereal disease control with the essential treatment of venereal disease patients without which control is not obtainable.

#### IMPROVEMENTS IN DIAGNOSIS

During the year there were loaned to six clinics complete darkfield outfits for the diagnosis of early syphilis. This is in line with the general policy of the U. S. Public Health Service that eventually each syphilis clinic should have available such a microscope.

Further effort was given toward the standardization of serological tests for syphilis. There is considerable variability in the technique employed, sensitivity of antigens, and also the method of reporting results of the test. This results in considerable confusion to the practicing physician, as in probably 50 percent of all cases of syphilis the diagnosis must be made on the basis of blood findings alone in the absence of clinical history or physical signs of infection.

Preliminary research for two years in cooperation with E. W. Flosdorf and S. Mudd at the University of Pennsylvania showed the practicability of preserving dried standardized syphilitic serum without loss of titer for periods as long as three months. The supplying of a uniform standardized positive serum and doubtful serum makes it possible for

the various laboratories to check their own sensitivity and to produce uniform results on other serums routinely examined. To carry out this work of the improvement of tests for syphilis in New Jersey, a full time technician was engaged and the necessary equipment for drying, testing, and ampuling serum was provided in space available for this purpose at the Camden Municipal Hospital.

Dried standardized serum has been sent out to all serologic laboratories at intervals of three months or less. With one recent lot of serums labelled with the titer, an offer of assistance was enclosed in case any laboratory had difficulty in getting early identical results. Few laboratories apparently wished to be the first to request such assistance although with the first standardized positive serum distributed 23 percent of the laboratories reported negative tests to this positive serum.

Technical details of this work may be found in Supplement No. 9 to Venereal Disease Information, a publication of the United States Public Health Service.

It is hoped that in the year 1939 the New Jersey State Medical Society will officially recommend a standard for positivity in cooperation with the New Jersey Society of Clinical Pathologists and other laboratory workers. The adoption of a standard would encourage uniformity in over a hundred laboratories doing serologic tests for syphilis in New Jersey.

The table below gives the reported cases of venereal disease in New Jersey by county, disease and sex for the calendar year of 1938, together with the annual rate per thousand:

County	Gonorrhoea		Syphilis		Chancroid		Total	Popu- lation	Rate per M
	M	F	M	F	M	F			
Atlantic .....	106	23	264	307	3	0	703	142,700	4.95
Bergen .....	93	25	189	207	8	3	525	432,200	1.21
Burlington .....	120	13	77	110	2	1	323	98,700	3.28
Camden .....	191	43	323	318	2	1	878	279,300	3.14
Cape May .....	33	5	61	47	0	0	146	33,900	4.31
Cumberland .....	58	6	128	133	0	0	325	73,600	4.42
Essex .....	772	447	2,121	2,220	23	5	5,588	912,600	6.12
Gloucester .....	29	4	70	86	0	0	189	80,700	2.34
Hudson .....	159	16	326	294	2	0	797	717,600	1.11
Hunterdon .....	17	6	28	59	0	0	110	35,500	3.10
Mercer .....	161	47	309	279	3	0	799	199,000	4.00
Middlesex .....	70	20	204	143	1	0	438	234,000	1.88
Monmouth .....	126	25	447	467	0	1	1,066	165,600	6.45
Morris .....	43	21	108	73	1	0	246	122,500	2.01
Ocean .....	36	4	65	42	4	1	152	37,800	4.02
Passaic .....	113	21	270	250	0	0	654	320,900	2.04
Salem .....	59	11	54	39	0	0	163	37,000	4.40
Somerset .....	21	5	51	26	0	0	103	72,600	1.42
Sussex .....	16	3	7	7	1	0	34	29,100	1.17
Union .....	157	92	352	349	4	0	954	351,000	2.72
Warren .....	3	1	19	15	0	1	39	51,200	0.76
Total .....	2,383	838	5,473	5,471	54	13	14,232	4,427,000	3.22

For purposes of comparison the total number of cases of gonorrhoea, syphilis and chancroid reported for the calendar years of 1936, 1937 and 1938 are here reproduced.

	Gonorrhoea	Percent of Total	Syphilis	Percent of Total	Chancroid	Percent of Total	Total
1936 .....	2,996	31.4	6,504	68.0	61	0.6	9,561
1937 .....	3,333	28.5	8,282	71.0	58	0.5	11,673
1938 .....	3,221	22.6	10,944	76.9	67	0.5	14,232

The greatest change is in the reported cases of syphilis, which showed an increase of 2,662 over the previous year.

#### NEW CLINIC PATIENTS FOR FISCAL YEARS 1937, 1938 AND 1939

	1937	1938	1939
Syphilis .....	3,891	5,025	5,445
Gonorrhoea .....	2,176	1,741	1,600
	6,067	6,766	7,045

From the above table it will be seen that the total number of new clinic patients for 1939 was 7,045, as against the grand total of 14,232 reported cases. This indicates a definite increase in the reporting by physicians of their private cases, the division between clinic and private patients for this year being practically equal.

## CLASSIFICATION OF SOURCES OF INFECTION REPORTED BY PHYSICIANS

	1937	1938	1939
Professional prostitutes and brothels .....	39	36	32
Clandestine prostitutes .....	169	216	180
Husband or wife .....	165	204	154
Congenital .....	252	248	244
Miscellaneous .....	2	1	0
Total .....	627	705	610

Reporting of sources of infection by physicians continues to be disappointing. Reluctance on the part of the patient to inform, and very frequently inability to furnish correct names and addresses, are big factors. Special investigation of sources of infection and sex contacts is made by venereal disease case investigators when such information can be obtained from new patients attending the clinics to which they are attached. This activity by the five investigators employed by the Department resulted in the finding of 300 additional infected individuals and their being placed under treatment. No complete figures of this kind are available from the activities of other investigators employed by local boards of health, but it would seem that additional trained investigators—whether employed by the State or local boards—until such service is available to all clinics and practicing physicians is a necessary development in venereal disease control.

## Report of the Bureau of Vital Statistics

For the Calendar Year 1938

DAVID S. SOUTH, STATE REGISTRAR

The Bureau, which was established by law in 1878, has the custody of more than seven million records of births, marriages and deaths which date back to 1848. Some of the records are filed in drawers in metal cabinets, the remainder are bound in volumes. As there are 5,890 books of records and the number increases annually, the cost of repair is an important item.

During 1938, 22,046 searches of the records were made and copies of the records found were issued, for which \$11,282.50 were received and paid to the State Treasurer. More than 9,500 of the copies were issued to widows, veterans and veterans' organizations for compensation and other pension purposes; for children to enter school or procure employment; for enlistment in the Army or Navy of the United States, and for old age pension, for all of which purposes no charge is made.

The registration of births, marriages and deaths was supervised in each city, borough and township of the State. Blanks for birth, marriage and death certificates, burial and transit permits and other forms were supplied by the Bureau as required by law.

During the year 1938, the Bureau received, examined, classified, indexed and permanently filed more than 135,000 certificates of birth, marriage and death, part of which records were for unreported events which occurred in previous years. The annual growth of the records requires approximately 200 cubic feet of storage space. More than 28,000 premarital certificate forms were received and examined, a new duty placed upon the Bureau at the adoption of the law requiring an examination for syphilis prior to the issuance of a marriage license.

On October 31, 1935, the double indexing of old birth records was started as a W. P. A. project. The workers have completed indexing

the records for the periods May 1, 1848, to May 31, 1878; June 1, 1878 to June 30, 1890, and are now working upon the records for the period July 1, 1890, to December 31, 1900. Starting with 1901 the original records are in alphabetical arrangement and are partially cross indexed both alphabetically and chronologically by cities and counties. If personnel is available when the birth indexes are completed, it is hoped to index the 1878-1900 marriage records, both by husbands' and wives' names. The records prior to 1900 are in extensive use for old age pension purposes, as, when the birth record of an applicant is not available, the age given upon a marriage record or certificate of birth of a child is accepted.

The Bureau compiled an increased amount of special statistical data, for the use of insurance companies, chambers of commerce, students, statisticians and agencies interested in disease and accident prevention.

## GENERAL SUMMARY

	1920	1930	1938
Births registered, tabulated and indexed .....	76,431	68,282	56,602
Marriages registered, tabulated and indexed .....	31,327	28,499	31,006
Deaths registered, tabulated and indexed .....	40,820	43,190	44,045
Stillbirths registered, tabulated and indexed .....	3,221	2,647	1,704
Total records registered, tabulated and permanently filed .....	151,799	142,618	133,357
Searches made and certified copies issued for which fees were received .....	4,664	10,523	12,296
Certified copies issued and searches made in pension and other cases for which no fees were received .....	4,232	6,938	9,750
Fees returned to State Treasurer for searches and certified copies .....	\$4,051	\$9,601	\$11,282

## CHARTS AND TABLES, 1938

Table 1. Births, marriages, deaths and rates, 1879-1938.
Table 1a. Births, marriages and deaths by months.
Table 1b. Births, marriages, deaths and deaths under one year of age by counties, cities, boroughs and townships.
Table 2. Deaths by age groups, with the percentage of each group of total deaths: 1938.

Chart 1. Births and deaths per 100,000 population, 1880-1934.
Table 3. Deaths of infants under five years of age and percentage of total deaths, 1904-1938.
Table 4. Number of births, stillbirths, deaths under one month, deaths under one year and maternal deaths with rates per 1,000 live births, 1906-1938.
Table 5. Deaths under one year, deaths under one month, stillbirths and maternal deaths per 1,000 live births, by counties.
Table 6. Deaths under one year, deaths under one month, stillbirths and maternal deaths per 1,000 live births in the ten largest cities of New Jersey.
Table 7. Births, birth rates, deaths under one year and infant mortality rates, by counties.
Chart 2. Deaths from typhoid fever per 100,000 population, 1880-1934.
Table 8. Comparison between typhoid fever death rates in New Jersey and the United States Registration Area, 1929-1938.
Table 9. Typhoid fever in urban and rural areas.
Table 10. Typhoid fever rates by counties, 1929-1938.
Chart 3. Deaths from measles per 100,000 population, 1880-1934.
Chart 4. Deaths from scarlet fever per 100,000 population, 1880-1934.
Chart 5. Deaths from whooping cough per 100,000 population, 1880-1934.
Chart 6. Deaths from diphtheria per 100,000 population, 1880-1934.
Table 11. Average annual death rates from all causes and from tuberculosis of lungs, by counties for 60 years, with rates for 1938.
Chart 7. Deaths from respiratory tuberculosis per 100,000 population, 1880-1934.
Table 12. Cancer and other malignant tumors by sex, age periods and organs affected.
Chart 8. Deaths from cancer and other malignant tumors per 100,000 population, 1880-1934.
Table 13. Suicide by sex, age periods and means employed.
Table 14. Percentage of the various causes of total deaths and of each sex of total.
Table 15. Death rates, total, white and colored, from important causes, per 100,000 total, white and colored population.
Table 16. Deaths (exclusive of stillbirths) by causes and months of death.
Table 17. Deaths (exclusive of stillbirths) from each cause of the Abridged International List, by age, sex and color.
Table 18. Deaths (exclusive of stillbirths) by causes, by days, weeks and months of the first year of life.
Table 19. Deaths (exclusive of stillbirths) under one year of age, by causes and months of death.
Table 20. Deaths (adjusted for residence) from each cause, Detailed International List, in the counties of New Jersey and selected municipalities of 5,000 or more inhabitants in 1930.
Table 21. Deaths by occupations, age groups and certain selected causes.

Table 22. Deaths by causes, sex, color and age periods in the counties and cities having 10,000 or more inhabitants in 1930. (County figures include cities which follow):

Atlantic County— Atlantic City	Essex County (con.)— Orange South Orange West Orange	Morris County— Dover Morristown
Bergen County— Englewood Garfield Hackensack Rutherford	Gloucester County—  Hudson County— Bayonne Harrison Hoboken Jersey City Kearny Union City West New York	Ocean County—  Passaic County— Clifton Passaic City Paterson
Burlington County— Burlington City		Salem County—  Somerset County—  Sussex County—  Union County— Elizabeth Linden Plainfield Rahway Summit Westfield
Camden County— Camden City Gloucester		Warren County— Phillipsburg
Cape May County—	Hunterdon County—	
Cumberland County— Bridgeton Millville	Mercer County— Trenton	
Essex County— Belleville Bloomfield East Orange Irvington Montclair Newark Nutley	Middlesex County— New Brunswick Perth Amboy	
	Monmouth County— Asbury Park Long Branch Red Bank	

*Population*—The estimated midyear population of the State for 1938 was 4,427,000. Due to a lower rate of population increase it was found necessary a few years ago, to abandon the arithmetical method of computing estimates of population and to use the United States Bureau of the Census estimates which recently were based upon reported births and deaths, net immigration (or emigration) and school censuses, etc. The Bureau did not prepare estimates for 1938 due to the nearness of the Federal census of 1940 and the unreliability of any estimates compiled at this time. The estimates prepared by this Bureau and published in this report may be found largely in error when the results of the next

census are available. The estimated population of the counties and incorporated municipalities of the State which had 10,000 or more inhabitants in 1930 appears at the foot of the mortality tables for the places.

*Births*—The number of births for 1938 was 56,602 which was equivalent to a rate of 12.7 per 1,000 population. Total births reported showed an increase of 1,405 over the number for the previous year. The year 1935 showed the first increase in the number of births reported since 1927 when there were 72,799 births in the State.

The number of illegitimate births reported for 1938 was 1,457 of which 602 were babies born to colored mothers. The figures for 1937 were 1,325 and 516 respectively.

*Marriages*—The number of marriages reported for 1938 was 31,006, a decrease of 5,184 from the number for the previous year. The marriage rate was 7.0 compared with 8.3 for 1937 and 7.5 for 1936. The 1938 figures reflect the effect of the premarital examination law which became effective on July 1 of that year. It is felt that the marriage rate for New Jersey will continue below normal until a similar law is enacted by the Legislatures of all adjacent States.

*Deaths*—The number of resident deaths for 1938 was 44,045. The death rate for the year, 9.9 was the lowest death rate since the Department of Health was established 60 years ago.

*Stillbirths*—The number of stillbirths reported for 1938 was 1,704. The number for the previous year was 1,731. The 1938 rate was 30.0 per 1,000 live births. The rate for the colored population was 51.1

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	Marriage rate per 1,000 population	Number of deaths	Death rate per 1,000 population
1879	1,110,489	23,116	20.8	7,098	6.3	20,440	18.4
1880	1,133,731	23,680	20.8	7,963	7.0	18,967	16.7
1881	1,165,112	23,484	20.1	8,109	6.9	20,512	17.8
1882	1,196,493	23,108	19.3	8,837	7.3	25,959	21.6
1883	1,227,874	24,430	19.8	9,168	7.4	23,310	18.9
1884	1,253,256	23,263	18.6	8,968	7.1	21,716	17.2
1885	1,290,688	24,077	18.6	8,959	6.9	23,807	18.4
1886	1,322,020	25,497	19.2	12,351	9.3	22,734	17.1
1887	1,353,402	27,340	20.2	15,418	11.3	24,331	17.9
1888	1,384,784	28,074	20.2	16,025	11.5	27,173	19.6
1889	1,416,166	29,099	20.5	15,726	11.1	28,545	18.7
1890	1,448,589	30,103	20.7	15,964	10.7	28,530	19.6
1891	1,482,462	28,882	19.3	15,305	10.2	28,540	19.3
1892	1,536,336	30,627	19.9	16,082	10.4	32,835	21.2
1893	1,580,209	32,285	20.4	17,178	10.8	30,599	19.3
1894	1,624,083	32,682	20.1	16,243	9.8	30,945	18.4
1895	1,667,957	31,742	19.0	15,873	9.5	30,634	18.3
1896	1,711,831	31,207	18.2	16,370	9.7	30,767	17.9
1897	1,755,705	31,595	17.9	18,171	10.3	29,822	16.9
1898	1,799,578	32,515	18.0	18,213	10.1	27,537	15.1
1899	1,843,452	29,419	15.9	17,526	9.5	30,989	16.8
1900	1,889,184	28,270	14.9	14,611	7.7	31,474	16.6
1901	1,935,361	34,812	17.8	16,539	8.4	31,739	16.2
1902	2,021,539	35,116	17.3	18,150	8.9	31,319	15.4
1903	2,087,716	37,242	17.8	19,512	9.3	31,520	15.2
1904	2,153,893	38,731	17.9	19,919	9.2	35,298	16.3
1905	2,220,070	39,689	17.8	20,572	9.2	33,864	15.2
1906	2,286,247	42,677	18.6	21,580	9.4	35,670	15.6
1907	2,352,424	44,651	18.9	23,649	10.0	37,408	15.9
1908	2,418,601	47,455	19.6	25,357	10.4	38,537	15.9
1909	2,484,778	47,808	19.1	29,724	11.9	36,359	14.6
1910	2,550,445	53,942	21.1	27,912	10.9	39,494	15.4
1911	2,614,177	58,133	22.2	25,014	9.5	38,612	14.7
1912	2,677,909	60,073	22.4	28,821	10.7	37,712	14.1
1913	2,741,642	61,432	22.4	27,697	10.1	39,423	14.3
1914	2,805,374	65,403	23.3	28,528	10.1	39,967	14.2
1915	2,869,106	66,476	23.1	27,694	9.6	39,435	13.7
1916	2,932,838	70,211	23.9	31,169	10.6	43,376	14.7
1917	2,996,569	73,309	24.4	30,060	10.0	43,532	14.5
1918	3,060,301	74,549	24.3	29,352	9.6	40,832	13.3
1919	3,124,034	70,935	22.7	29,251	9.3	39,979	12.7
1920	3,189,092	76,431	23.9	31,327	9.7	40,820	12.7
1921	3,253,475	78,172	23.9	32,515	9.9	37,362	11.3
1922	3,317,859	74,479	22.4	32,114	9.6	40,866	12.3
1923	3,382,243	74,811	22.1	28,730	8.5	41,294	11.9
1924	3,446,627	76,530	22.2	27,601	7.7	40,531	11.4
1925	3,511,011	74,198	21.1	27,672	7.8	41,749	11.9
1926	3,575,395	72,358	20.2	28,424	7.9	44,390	12.4
1927	3,639,779	72,799	19.9	28,316	7.7	44,629	12.2
1928	3,704,163	70,076	18.9	29,120	7.8	44,555	11.4
1929	3,768,546	68,297	18.1	30,257	7.9	45,746	11.3
1930	3,832,930	68,282	17.8	28,499	7.4	43,190	11.2
1931	3,897,314	64,078	16.4	28,468	7.3	44,133	10.7
1932	3,961,698	64,255	16.2	28,549	7.2	44,279	10.3
1933	4,026,082	60,072	14.9	24,453	6.0	43,280	10.3
1934	*4,090,466	54,841	13.4	26,991	6.6	43,547	10.2
1935	*4,154,850	55,059	13.2	29,724	7.1	43,267	10.0
1936	*4,219,234	54,143	12.8	32,771	7.7	44,659	10.3
1937	*4,283,618	53,107	12.4	33,100	7.7	44,612	10.4
1938	4,348,002	56,902	12.9	31,006	7.1	44,045	9.9

\* Federal estimates.

TABLE 1A.—BIRTHS, MARRIAGES AND DEATHS, 1938

(Births and deaths corrected for Residence)

Month	Births	Marriages	Deaths
January	4,792	2,111	4,204
February	4,459	2,212	3,694
March	4,812	1,500	4,231
April	4,533	2,836	4,002
May	4,501	2,670	3,828
June	4,593	5,221	3,380
July	5,356	2,386	3,324
August	5,062	1,771	3,363
September	4,842	3,277	3,256
October	4,742	2,832	3,616
November	4,461	2,529	3,398
December	4,449	1,661	3,749
Total	56,602	31,006	44,045

TABLE 1B.—BIRTHS, MARRIAGES, DEATHS AND DEATHS UNDER ONE YEAR OF AGE BY COUNTIES, CITIES, BOROUGHS AND TOWNSHIPS, 1938  
(Births and Deaths Corrected as to Residence)

NAME OF PLACE	ATLANTIC COUNTY			
	Births	Marriages	Deaths	Deaths under one year
Absecon City	35	15	26	1
Atlantic City	828	467	981	37
Brigantine City	11	3	5	1
Buena Vista Township	47	32	32	3
Corbin City	3	...	4	...
Egg Harbor City	46	43	49	2
Egg Harbor Township	39	11	39	3
Estelle Manor City	3	...	3	...
Folsom Borough	3	1	3	...
Galloway Township	53	5	35	1
Hamilton Township	42	23	34	2
Hammoncton Town	132	65	97	6
Linwood City	33	20	13	2
Longport Borough	3	1	4	...
Margate City	37	17	34	2
Millican Township	22	4	16	1
Northfield City	38	15	31	2
Pleasantville City	146	72	156	5
Port Republic City	3	4	2	...
Somers Point City	37	7	42	2
Ventnor City	76	47	102	6
Westmont Township	12	...	11	1
Total	1647	852	1710	72

## BERGEN COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Allendale Borough	32	13	29	2
Alpine Borough	6	3	5	
Bendix Borough	...	...	78	1
Bergenfield Borough	125	62	79	
Bogota Borough	81	70	62	
Carlstadt Borough	39	39	68	
Cliffside Park Borough	215	77	136	6
Closter Borough	26	36	29	3
Cresskill Borough	17	1	20	
Deaneast Borough	49	1	11	
Dumont Borough	49	32	63	2
East Paterson Borough	60	27	43	2
East Rutherford Borough	98	60	56	3
Edgewater Borough	37	84	46	3
Emerson Borough	13	6	15	1
Englewood City	231	185	215	8
Englewood Cliffs Borough	1	6	6	
Fair Lawn Borough	128	74	66	7
Fairview Borough	92	111	63	1
Fort Lee Borough	95	215	91	3
Franklin Lakes Borough	16	2	5	
Garfield City	403	163	181	7
Glen Rock Borough	51	19	47	1
Hackensack City	341	259	265	18
Harrington Park Borough	10	4	10	
Hackensack Heights Borough	73	53	54	2
Harwood Borough	8	5	15	1
Hilldale Borough	43	18	50	3
Hoboken Borough	39	16	14	
Hoboken Township	31	11	33	
Hudson Borough	57	45	49	1
Little Ferry Borough	58	24	45	
Lodi Borough	161	77	75	
Lyndhurst Township	274	122	149	12
Maywood Borough	33	25	31	1
Midland Park Borough	73	27	32	2
Montvale Borough	13	2	12	
Moanachie Borough	17	1	14	
New Milford Borough	21	28	23	
North Arlington Borough	132	44	81	4
Northvale Borough	18	16	17	1
Norwood Borough	25	7	17	
Oakland Borough	13	2	5	
Old Tappan Borough	27	10	27	3
Oradell Borough	...	...	84	6
Palisades Interstate Park	111	34	33	
Palisades Park Borough	43	33	32	2
Paramus Borough	41	29	28	
Park Ridge Borough	41	41	37	1
Parsonage Borough	41	40	5	
Ridgefield Borough	69	45	119	
Ridgefield Park Borough	119	90	139	5
Ridgewood Village	131	130	160	
River Edge Borough	1	28	27	
Riverside Township	10	5	1	
Rochelle Park Township	46	23	26	1
Rockleigh Borough	1	1	163	6
Rutherford Borough	151	89	61	
Saddle River Borough	3	3	7	
Saddle River Township	11	14	1	
South Hackensack Township	19	7	9	
Teaneck Township	267	100	182	9
Tenafly Borough	88	53	61	
Upper Saddle River Borough	4	4	19	
Waldwick Borough	27	12	9	1
Wallington Borough	134	16	63	5
Washington Township	3	3	5	
Westwood Borough	52	58	58	
Woodcliff Lake Borough	9	4	9	
Wood Ridge Borough	59	26	44	1
Wyckoff Township	46	16	27	1
Total	4944	2903	3594	153

## BURLINGTON COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Bass River Township	8	4	9	
Beverly City	54	25	50	9
Bordentown City	76	41	76	8
Bordentown Township	12	...	14	...
Burlington City	182	79	153	9
Burlington Township	18	3	22	2
Chester Township	76	38	49	5
Chesterfield Township	16	5	11	1
Cinnaminson Township	16	14	13	...
Delanco Township	38	10	19	1
Delran Township	36	5	19	2
Eastampton Township	12	...	7	...
Edgewater Park Township	11	8	12	1
Eresham Township	23	8	17	3
Fieldsboro Borough	6	2	4	...
Florence Township	99	50	84	6
Hainesport Township	9	4	9	3
Lumberton Township	15	4	10	...
Mansfield Township	24	9	20	...
Medford Township	39	12	26	1
Moorestown Township	127	48	104	5
Mount Holly Township	102	55	110	4
Mount Laurel Township	19	1	18	1
New Hanover Township	13	17	15	3
North Hanover Township	6	6	11	...
Palmyra Borough	84	24	56	2
Pemberton Borough	21	8	25	...
Pemberton Township	33	6	17	...
Riverside Township	127	58	71	9
Riverton Borough	26	26	34	...
Shamong Township	9	...	3	...
Southampton Township	27	6	23	1
Springfield Township	17	1	11	...
Tabernacle Township	8	2	5	...
Washington Township	6	1	14	...
Westampton Township	6	2	8	...
Willingboro Township	7	1	4	1
Woodland Township	11	...	5	1
Wrightstown Borough	11	...	8	1
Total	1481	583	1174	79

## CAMDEN COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Audubon Borough	92	29	90	2
Barrington Borough	26	37	17	2
Bellmawr Borough	14	5	18	1
Berlin Borough	36	80	18	1
Berlin Township	25	8	21	3
Brooklawn Borough	34	...	34	2
Camden City	1833	888	1337	56
Chesthurst Borough	3	2	9	...
Clementon Borough	52	15	29	...
Collingswood Borough	132	97	162	3
Delaware Township	52	13	45	4
Gibbsboro Borough	13	3	9	...
Gloucester City	205	66	187	15
Gloucester Township	88	29	65	10
Haddonfield Borough	116	59	110	11
Haddon Heights Borough	79	55	62	1
Haddon Township	78	20	68	2
HINella Borough	2	...	2	...
Laurel Springs Borough	23	12	12	...
Lawnside Borough	28	8	20	3
Lindenwald Borough	47	26	34	1
Magnolia Borough	20	10	12	...
Merchantville Borough	158	34	73	3
Mount Ephraim Borough	27	7	18	1
Oaklyn Borough	77	17	86	1
Pensauken Township	189	69	145	16

## CAMDEN COUNTY—Continued

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Pine Hill Borough	22	2	14	1
Pine Valley Borough	...	...	...	...
Rumemede Borough	39	20	29	3
Somerdale Borough	31	3	20	4
Stratford Borough	8	6	15	...
Tavistock Borough	...	...	...	...
Voorhees Township	16	6	7	1
Waterford Township	51	29	30	1
Winslow Township	68	20	41	3
Woodlynne Borough	35	5	34	2
Total	3736	1598	2846	187

## CAPE MAY COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Avalon Borough	2	...	6	...
Cape May City	33	23	62	2
Cape May Point Borough	2	...	...	...
Dennis Township	24	11	23	...
Lower Township	24	18	22	...
Middle Township	66	18	60	1
North Cape May Borough	...	...	...	...
North Wildwood City	19	4	24	1
Ocean City	53	40	79	1
Sea Isle City	8	10	12	...
South Cape May Borough	...	...	...	...
Stone Harbor Borough	5	3	7	1
Upper Township	19	11	20	...
West Cape May Borough	14	1	12	...
West Wildwood City	2	...	3	...
Wildwood City	72	52	87	3
Wildwood Crest Borough	3	3	19	...
Woodbine Borough	24	8	15	...
Total	370	204	462	8

## CUMBERLAND COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Bridgeton City	291	134	218	13
Commercial Township	25	13	50	1
Deerfield Township	28	10	23	1
Downe Township	19	6	16	2
Fairfield Township	31	9	25	3
Greenwich Township	18	5	17	1
Hopevill Township	21	5	23	2
Landis Township	204	102	155	8
Lawrence Township	30	4	22	1
Maurice River Township	26	11	42	1
Millville City	210	78	296	12
Shiloh Borough	4	3	6	...
Stow Creek Township	12	4	3	1
Upper Deerfield Township	31	5	16	1
Vineland Borough	114	54	99	...
Total	1077	443	999	47

## ESSEX COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Belleville Town	415	163	259	11
Bloomfield Town	605	216	362	19
Caldwell Borough	61	56	70	1
Caldwell Township	13	1	9	...
Cedar Grove Township	33	10	29	...
East Orange City	834	444	733	21
Essex Falls Borough	15	10	10	...
Glen Ridge Borough	55	33	73	...
Irlington Town	726	413	332	19
Livingston Township	81	22	33	1
Maplewood Township	206	117	213	2
Millburn Township	124	52	83	2
Montclair Town	462	312	457	12
Newark City	6307	4206	4940	253
North Caldwell Borough	1	1	2	...
Nutley Town	278	138	199	7
Orange City	520	322	357	19
Roseland Borough	24	4	15	1
South Orange Village	131	103	141	4
Verona Borough	98	57	58	2
West Caldwell Borough	53	3	24	2
West Orange Town	344	115	244	17
Total	11416	6823	8903	396

## GLOUCESTER COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Clayton Borough	49	4	33	2
Deptford Township	62	10	46	...
East Greenwich Township	19	12	28	1
Elk Township	24	19	13	...
Franklin Township	56	16	42	2
Glassboro Borough	75	40	66	2
Greenwich Township	30	7	13	...
Harrison Township	35	5	29	7
Logan Township	32	6	25	4
Mantua Township	61	6	36	2
Monroe Township	55	31	54	7
National Park Borough	55	14	32	7
Newfield Borough	22	2	13	1
Pauisboro Borough	138	31	71	5
Pitman Borough	70	19	97	2
South Harrison Township	7	1	5	...
Svedeboro Borough	43	29	31	...
Washington Township	23	3	21	3
Wenonah Borough	17	9	8	...
West Deptford Township	55	12	37	3
Westville Borough	40	23	43	3
Woodbury City	130	43	97	4
Woodbury Heights Borough	21	2	13	1
Woodwich Township	15	...	7	...
Total	1125	345	800	57

## HUDSON COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Bayonne City	1120	648	693	43
East Newark Borough	44	20	23	...
Guttenberg Town	64	65	62	5
Harrison Town	214	122	158	7
Hoboken City	693	572	697	30
Jersey City	4983	2828	3238	179
Kearny Town	558	194	273	12
North Bergen Township	343	187	353	16
Secaucus Borough	72	45	80	3
Union City	682	589	586	24
Weehawken Township	130	132	130	7
West New York Town	522	521	331	15
Total	8968	6123	6880	346



## HUNTERDON COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Alexandria Township	11	1	7	1
Bethlehem Township	9	..	6	..
Bloomersburg Borough	12	9	10	..
Califon Borough	9	6	10	..
Clinton Town	8	..	17	..
Clinton Township	31	11	23	1
Delaware Township	9	14	23	1
East Amwell Township	13	7	21	..
Flemington Borough	41	41	41	6
Franklin Township	12	6	22	3
Frenchtown Borough	16	4	23	1
Glen Gardner Borough	13	..	16	..
Hampton Borough	16	11	13	2
High Bridge Borough	23	10	24	..
Holland Township	16	1	..	..
Kingwood Township	12	12	..	..
Lambertville City	80	23	71	5
Lebanon Borough	6	6	13	..
Lebanon Township	15	5	8	..
Milford Borough	19	8	10	..
Raritan Township	15	3	21	5
Readington Township	26	25	45	..
Stockton Borough	9	2	5	..
Tewksbury Township	15	13	18	2
Union Township	8	2	14	..
West Amwell Township	10	1	7	..
Total	465	218	487	27

## MERCER COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
East Windsor Township	9	..	9	..
Ewing Township	127	21	96	4
Hamilton Township	455	121	239	20
Hightstown Borough	47	29	39	1
Hopewell Borough	27	18	34	2
Hopewell Township	54	7	36	2
Lawrence Township	116	26	60	6
Flemington Borough	18	13	16	..
Princeton Borough	99	70	68	3
Princeton Township	53	9	52	..
Trenton City	1618	921	1298	74
Washington Township	13	14	18	1
West Windsor Township	31	11	19	..
Total	2667	1269	1954	118

## MIDDLESEX COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Carteret Borough	176	90	107	7
Cranbury Township	27	17	25	1
Dunellen Borough	91	65	61	1
East Brunswick Township	34	8	27	1
Helmetta Borough	7	22	10	1
Highland Park Borough	124	80	75	4
Jamesburg Borough	37	33	28	1
Madison Township	51	9	35	1
Metuchen Borough	113	33	65	3
Middlesex Borough	44	12	26	5
Milltown Borough	67	49	24	2
Monroe Township	22	1	25	3
New Brunswick City	487	359	322	21
North Brunswick Township	33	20	32	3
Perth Amboy City	588	371	381	26

## MIDDLESEX COUNTY—Continued

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Piscataway Township	80	12	48	2
Raritan Township	7	5	8	1
Plainboro Township	142	39	92	4
Sayreville Borough	123	63	72	6
South Amboy City	139	70	69	6
South Brunswick Township	49	12	32	4
South Plainfield Borough	80	43	45	3
South River Borough	153	90	77	5
Spotswood Borough	22	8	20	1
Woodbridge Township	420	181	229	13
Total	3138	1692	2026	125

## MONMOUTH COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Allenhurst Borough	5	1	12	..
Allentown Borough	19	17	23	3
Asbury Park City	167	137	203	12
Atlantic Township	19	5	13	2
Atlantic Highlands Borough	36	25	31	1
Avon Borough	14	26	25	..
Belmar Borough	49	40	52	2
Bradley Beach Borough	33	26	50	2
Brielle Borough	1	2	9	..
Deal Borough	16	8	13	3
Eatontown Borough	21	15	28	1
Englishtown Borough	16	6	14	..
Fair Haven Borough	29	8	28	2
Farmingdale Borough	12	14	11	..
Freehold Borough	121	72	95	6
Freehold Township	46	1	35	2
Highlands Borough	43	13	27	1
Holmdel Township	13	4	9	..
Howell Township	31	20	54	2
Interlaken Borough	9	2	6	..
Jersey Homesteads Borough	3	1	..	..
Keansburg Borough	43	22	51	3
Keport Borough	79	81	67	2
Little Silver Borough	16	14	14	..
Long Branch City	229	129	212	5
Manalapan Township	28	11	15	..
Manasquan Borough	30	41	48	3
Marlboro Township	31	9	21	..
Matawan Borough	39	23	37	..
Matawan Township	25	9	23	1
Middletown Township	127	49	123	4
Millstone Township	15	1	19	1
Monmouth Beach Borough	9	1	4	..
Neptune Township	158	40	186	7
Neptune City Borough	34	8	16	..
Ocean Township	48	22	46	1
Oceanport Borough	30	4	24	2
Raritan Township	14	1	15	2
Red Bank Borough	161	118	168	4
Rumson Borough	30	17	37	..
Sea Bright Borough	8	3	15	2
Sea Girt Borough	4	7	..	..
Shrewsbury Borough	22	19	19	1
Shrewsbury Township	5	7	14	..
South Belmar Borough	17	9	9	..
Spring Lake Borough	16	22	24	1
Spring Lake Heights Borough	13	7	19	1
Union Beach Borough	26	12	26	..
Upper Freehold Township	1	2	14	1
Wall Township	64	16	43	1
West Long Branch Borough	33	11	23	1
Total	2109	1172	2081	88

## MORRIS COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Beonton Town	85	54	72	...
Beonton Township	8	2	6	...
Butler Borough	42	23	36	3
Chatham Borough	93	28	54	4
Chatham Township	14	7	14	2
Chester Borough	6	7	10	1
Chester Township	6	3	8	...
Denville Township	61	17	38	2
Dover Town	150	99	124	6
East Hanover Township	11	7	14	2
Floham Park Borough	9	3	21	...
Hanover Township	55	17	28	3
Harding Township	15	9	12	...
Jefferson Township	23	3	19	1
Kinnelon Borough	3	1	3	...
Lincoln Park Borough	21	9	16	...
Madison Borough	116	75	76	3
Mendham Borough	22	16	16	1
Mendham Township	10	1	9	1
Mine Hill Township	15	3	14	...
Montville Township	55	20	33	1
Morris Plains Borough	85	26	42	2
Morristown Town	233	114	227	6
Morris Township	74	12	48	2
Mountain Lakes Borough	20	10	18	...
Mount Arlington Borough	7	1	9	...
Mount Olive Township	20	10	26	2
Netcong Borough	46	29	22	2
Parsippany-Troy Hills Township	55	18	42	2
Passaic Township	32	26	32	2
Pequanock Township	37	15	28	...
Randolph Township	39	7	30	1
Riverdale Borough	12	5	9	1
Rockaway Borough	42	40	35	5
Rockaway Township	56	9	30	4
Roxbury Township	76	23	61	4
Washington Township	17	6	23	...
Wharton Borough	49	53	31	2
Total	1685	780	1354	65

## OCEAN COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Barnegat City Borough	4	...	2	...
Bay Head Borough	2	...	8	...
Beach Haven Borough	16	9	12	1
Beachwood Borough	7	3	4	...
Berkeley Township	5	7	15	...
Brick Township	22	12	32	...
Dover Township	89	82	89	3
Eaglewood Township	11	2	14	...
Harvey Cedars Borough	1	...	2	...
Island Beach Borough	...	...	...	...
Island Heights Borough	3	6	6	...
Jackson Township	23	11	17	...
Lacey Township	12	4	9	2
Lakehurst Borough	16	1	15	2
Lakewood Township	70	76	108	6
Lavallette Borough	8	1	2	1
Little Egg Harbor Township	7	1	6	1
Long Beach Township	4	4	3	1
Manchester Township	20	4	10	3
Mantoloking Borough	2	...	1	...
Ocean Township	...	7	5	...
Ocean Gate Borough	1	1	6	...
Pine Beach Borough	...	1	2	...
Plumsted Township	26	6	22	2
Point Pleasant Borough	40	5	43	3
Point Pleasant Beach Borough	2	23	31	...

## OCEAN COUNTY—Continued

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Seaside Heights Borough	9	2	8	...
Seaside Park Borough	10	9	12	1
Ship Bottom-Beach Arlington Borough	5	3	8	1
South Toms River Borough	4	2	8	1
Stafford Township	11	2	18	...
Surf City Borough	1	1	1	...
Tuckerton Borough	28	11	19	...
Union Township	22	4	17	1
Total	479	252	535	29

## PASSAIC COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Bloomington Borough	52	25	30	3
Clifton City	610	221	362	25
Haledon Borough	75	72	37	3
Hawthorne Borough	144	68	109	3
Little Falls Borough	68	37	51	1
North Haledon Borough	23	8	10	1
Passaic City	781	623	534	22
Paterson City	1737	1122	1588	58
Pompton Lakes Borough	49	43	28	4
Prospect Park Borough	61	36	29	1
Ringwood Borough	28	6	16	5
Totowa Borough	58	2	17	2
Wanaque Borough	52	28	31	3
Wayne Township	89	30	51	4
West Milford Township	40	19	36	4
West Paterson Borough	22	4	21	...
Total	3889	2359	2974	139

## SALEM COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Alloway Township	24	12	17	...
Elmer Borough	22	8	22	1
Elsinboro Township	16	...	4	...
Lower Alloways Creek Township	23	5	18	2
Lower Penns Neck Township	93	15	40	3
Mannington Township	23	4	21	...
Oldmans Township	35	9	20	...
Penns Grove Township	157	46	65	6
Pilesgrove Township	21	2	14	1
Pittsgrove Township	24	4	13	2
Quinton Township	22	8	8	...
Salem City	150	66	130	10
Upper Penns Neck Township	44	13	24	1
Upper Pittsgrove Township	39	3	26	2
Woodstown Borough	39	15	25	1
Total	734	212	464	29

## SOMERSET COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Bedminster Township	22	4	10	1
Bernards Township	38	22	14	...
Bernardsville Borough	54	26	37	...
Bound Brook Borough	123	94	71	2
Branchburg Township	18	16	12	...
Bridgewater Township	70	10	47	4
Far Hills Borough	12	4	5	...
Franklin Township	75	22	65	6
Green Brook Township	8	1	6	...
Hillsborough Township	38	11	17	...
Manville Borough	93	46	43	8
Millstone Borough	1	3	7	...
Montgomery Township	30	5	22	2
North Plainfield Borough	138	60	106	2
Peapack-Gladstone Borough	17	15	21	3
Raritan Township	73	45	23	5
Rocky Hill Borough	7	3	5	1
Somerville Borough	133	58	121	4
South Bound Brook Borough	41	9	20	2
Warren Township	25	8	16	...
Watchung Borough	14	12	11	1
Total	1082	475	684	41

## UNION COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Clark Township	19	2	13	...
Cranford Township	166	68	106	3
Elizabeth City	1602	950	1156	87
Fanwood Borough	45	2	16	1
Garwood Borough	68	27	39	2
Hillside Township	227	60	143	3
Kenilworth Borough	38	8	17	...
Linden City	406	138	148	9
Mountainside Borough	8	3	4	...
New Providence Borough	53	18	23	...
New Providence Township	18	8	15	...
Plainfield City	547	294	404	1
Rahway City	237	116	169	7
Roselle Borough	186	102	147	11
Roselle Park Borough	100	35	87	6
Scotch Plains Township	90	34	38	2
Springfield Township	63	26	38	2
Summit City	187	112	152	4
Union Township	387	86	205	13
Westfield Town	205	101	198	4
Total	4372	2155	3114	176

## SUSSEX COUNTY

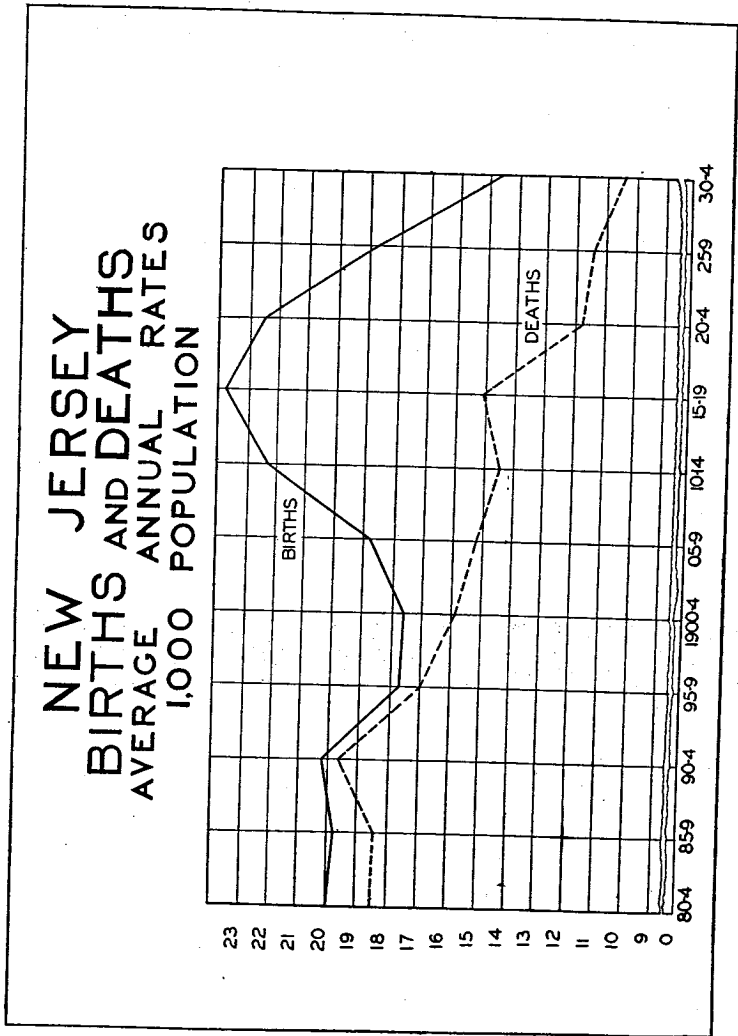
NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Andover Borough	8	3	8	...
Andover Township	7	2	3	...
Branchville Borough	12	11	14	1
Byram Township	2	1	6	...
Frankford Township	13	...	17	1
Franklin Borough	83	38	44	5
Fredon Township	4	3	6	1
Green Township	7	6	9	1
Hamburg Borough	23	15	16	1
Hampton Township	8	...	7	1
Hardy Township	9	1	9	1
Hopatcong Borough	5	5	7	...
Lafayette Township	20	4	8	...
Montague Township	8	3	8	...
Newton Town	83	53	84	4
Ogdensburg Borough	32	5	13	1
Sandyston Township	11	10	5	...
Sparta Township	21	17	24	1
Stanhope Borough	22	17	20	...
Stillwater Township	9	6	13	2
Sussex Borough	25	25	26	1
Vernon Township	25	4	11	...
Walpack Township	3	1	...	...
Wantage Township	36	6	20	8
Total	476	235	378	24

## WARREN COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Allamuchy Township	3	...	4	...
Alpha Borough	42	15	23	3
Belvidere Town	22	17	32	2
Blairtown Township	21	13	14	...
Franklin Township	18	3	33	2
Frellinghuysen Township	5	1	5	2
Greenwich Township	30	16	14	1
Hackettstown Town	46	27	43	...
Hardwick Township	6	...	5	...
Harmony Township	21	3	15	2
Hope Township	3	...	8	...
Independence Township	22	22	20	...
Knowlton Township	11	13	19	...
Liberty Township	3	...	6	...
Lopatcong Township	8	...	3	...
Mansfield Township	4	5	21	1
Oxford Township	18	19	21	...
Panquarry Township	1	...	...	...
Phillipsburg Town	239	96	216	10
Poatscong Township	34	7	13	1
Washington Borough	47	23	55	1
Washington Township	15	3	23	1
White Township	13	2	15	1
Total	632	291	615	27
State Total	56802	31006	44045	2228

TABLE 2--DEATHS BY AGE PERIODS AND PERCENTAGES OF EACH OF TOTAL DEATHS, 1938

	AGE PERIODS													90 and over	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		
Deaths .....	2,228	103	102	95	2,810	878	894	1,010	2,354	4,408	7,216	0,854	0,834	4,400	027
Percentage of total..	5.1	0.5	0.2	0.2	6.4	0.8	2.0	3.7	5.3	10.2	16.4	22.4	21.2	10.2	1.4
Unknown .....															



*Infant Mortality*—The infant mortality rate for 1938 was 39.3 per 1,000 babies born alive. The rate was the same as for 1937 which was the lowest infant mortality rate ever attained in New Jersey. Reference to Table 4 will show the great decrease in the infant death rate in New Jersey since extensive baby welfare work was undertaken.

*Colored Races*—The infant mortality rate for the colored races was 66.7. The colored races have shown high mortality rates since vital statistics were first collected and analyzed.

*Maternal Mortality*—The rate for 1938 was 3.3 and for 1937, 3.2. The rate for 1937 was the lowest since such rates were first computed in 1906. It is regrettable that a decrease comparable to the infant mortality decline has not been shown in deaths due to maternity. The colored maternal mortality rate was 4.5.

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

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
1929	45,746	4,116	9.0	5,795	12.6
1930	43,190	3,870	9.0	5,205	12.1
1931	44,135	3,649	8.3	4,916	11.1
1932	42,826	3,089	7.2	4,049	9.4
1933	43,380	2,608	6.0	3,512	8.1
1934	43,547	2,686	6.2	3,518	8.1
1935	43,267	2,539	5.9	3,291	7.6
1936	44,659	2,383	5.3	3,039	6.8
1937	45,312	2,170	4.8	2,870	6.3
1938	44,045	2,228	5.1	2,810	6.4

## DEPARTMENT OF HEALTH

TABLE 4.—NUMBER OF BIRTHS, STILLBIRTHS, DEATHS UNDER ONE MONTH, DEATHS UNDER ONE YEAR AND MATERNAL DEATHS IN NEW JERSEY, WITH RATES PER 1,000 LIVE BIRTHS

Year	Births Reported	Deaths Under 1 Year of Age	Rates per 1,000 Live Births	Deaths Under 1 Month of Age	Rates per 1,000 Live Births	Still-births	Rates per 1,000 Live Births	Maternal Deaths	Rates per 1,000 Live Births
1906	42,677	7,773	182.1	2,545	59	2,399	56	322	7.5
1907	44,651	7,732	173.2	2,602	58	2,530	56	289	6.5
1908	47,405	7,823	165.2	2,655	56	2,617	55	329	6.9
1909	47,508	7,658	161.2	2,661	56	2,539	53	311	6.5
1910	53,942	8,352	154.8	2,801	51	2,737	50	377	6.9
1911	58,133	7,642	131.4	2,887	49	2,754	47	427	7.3
1912	60,073	7,457	124.1	2,836	47	2,953	49	415	6.9
1913	61,432	7,542	122.7	2,903	47	2,866	46	460	7.4
1914	65,403	7,431	113.6	2,995	45	3,074	47	416	6.3
1915	66,476	7,348	106.4	2,862	43	3,075	46	390	5.8
1916	70,211	7,488	104.7	3,075	43	3,221	45	411	5.4
1917	75,309	7,582	100.7	3,256	42	3,183	42	417	5.5
1918	74,549	8,372	112.3	3,175	38	3,047	42	366	5.1
1919	70,935	6,111	86.1	2,696	38	3,221	42	366	5.1
1920	76,431	6,672	87.2	2,961	38	3,242	41	472	5.9
1921	78,172	5,773	73.8	2,830	36	3,053	40	464	6.2
1922	74,611	5,864	78.7	2,773	37	3,169	42	424	5.4
1923	74,530	5,368	71.9	2,621	35	2,864	40	406	5.7
1924	76,530	5,359	70.0	2,739	35	3,010	40	466	6.0
1925	74,193	5,109	68.8	2,607	35	3,018	41	394	5.4
1926	72,386	5,090	70.3	2,537	35	3,074	42	450	6.1
1927	72,799	4,464	61.3	2,462	35	2,861	40	406	5.7
1928	68,297	4,606	65.9	2,485	32	2,767	38	367	5.3
1929	68,282	4,116	60.2	2,233	30	2,647	38	390	5.7
1930	64,078	3,870	56.6	2,104	29	2,578	40	378	5.9
1931	61,215	3,649	56.9	1,862	27	2,343	38	351	5.7
1932	56,072	3,089	50.4	1,802	27	2,073	36	289	5.1
1933	54,841	2,608	46.5	1,533	26	2,025	36	294	5.3
1934	55,059	2,686	48.9	1,634	28	1,905	34	249	4.5
1935	54,145	2,539	46.1	1,560	26	1,846	34	202	3.7
1936	55,197	2,383	44.0	1,449	26	1,731	31	182	3.2
1937	56,602	2,170	39.3	1,327	24	1,704	30	191	3.3
1938		2,228	39.3	1,365	24				

## BUREAU OF VITAL STATISTICS

TABLE 5.—DEATHS UNDER ONE YEAR, DEATHS UNDER ONE MONTH, STILLBIRTHS AND MATERNAL MORTALITY PER THOUSAND LIVE BIRTHS, 1938

	Deaths Under One Year	Deaths Under One Month	Stillbirths	Maternal Deaths
New Jersey	39	24	26	3.3
Atlantic	43	27	27	4.2
Bergen	30	20	21	2.2
Burlington	55	28	26	4.1
Camden	50	29	27	5.0
Cape May	21	8	27	10.8
Cumberland	43	20	29	6.4
Essex	34	22	25	2.8
Gloucester	50	24	22	6.1
Hudson	38	22	27	2.7
Hunterdon	58	34	21	2.1
Mercer	42	23	22	5.2
Middlesex	39	26	27	4.1
Monmouth	41	25	26	3.3
Morris	38	26	23	3.5
Ocean	60	43	29	6.2
Passaic	35	23	33	2.0
Salem	39	23	13	4.0
Somerset	39	19	22	2.9
Sussex	50	35	31	4.2
Union	38	24	25	2.4
Warren	42	25	34	1.5

TABLE 6.—DEATHS UNDER ONE YEAR, DEATHS UNDER ONE MONTH, STILLBIRTHS AND MATERNAL MORTALITY PER THOUSAND LIVE BIRTHS; NEW JERSEY AND TEN LARGEST CITIES, 1938

	Deaths Under One Year	Deaths Under One Month	Stillbirths	Maternal Deaths
New Jersey	39	24	26	3.3
Newark	40	26	26	2.8
Jersey City	40	24	24	2.5
Paterson	33	21	40	2.8
Trenton	45	24	22	4.3
Camden	46	26	81	3.8
Elizabeth	54	33	29	1.2
Bayonne	40	23	30	3.5
East Orange	24	11	12	2.3
Atlantic City	44	33	27	3.6
Passaic City	28	19	23	1.2

TABLE 7—BIRTHS, BIRTH RATES, DEATHS UNDER ONE YEAR AND INFANT MORTALITY RATES (EXCLUSIVE OF STILLBIRTHS)—1938

	<i>Births (Exclusive of Stillbirths)</i>	<i>Birth Rates per 1,000 Population</i>	<i>Deaths Under One Year</i>	<i>Infant Mortality Rates</i>
New Jersey .....	56,602	12.7	2,228	39
Atlantic County .....	1,647	11.5	72	43
Atlantic City .....	828	11.3	37	44
Hammonton Town .....	132	16.0	6	45
Pleasantville .....	146	10.3	5	34
Bergen County .....	4,944	11.4	153	30
Bergenfield Borough .....	125	11.2	1	8
Cliffside Park .....	215	11.0	6	27
Englewood City .....	231	11.2	8	34
Fairview Borough .....	92	8.4	1	10
Fort Lee Borough .....	95	9.4	3	31
Garfield City .....	403	11.7	7	17
Hackensack City .....	341	12.3	18	52
Lodi Borough .....	161	12.3	6	37
North Arlington .....	132	11.8	4	30
Ridgefield Park .....	119	10.1	1	8
Ridgewood Village .....	131	9.2	5	38
Rutherford Borough .....	151	8.7	6	39
Wallington Borough .....	134	12.7	5	37
Burlington County .....	1,431	14.4	79	55
Bordentown City .....	76	17.2	8	105
Burlington City .....	182	15.6	9	49
Camden County .....	3,736	13.3	187	50
Audubon Borough .....	92	8.5	2	21
Camden City .....	1,838	15.3	86	46
Collingswood Borough .....	152	10.4	3	19
Gloucester City .....	205	14.1	15	73
Haddonfield Borough .....	116	11.2	11	94
Cape May County .....	370	10.9	8	21
Cumberland County .....	1,077	14.6	47	43
Bridgeton City .....	291	17.8	13	44
Millville City .....	210	14.2	12	57
Vineland Borough .....	114	14.2	..	..

	<i>Births (Exclusive of Stillbirths)</i>	<i>Birth Rates per 1,000 Population</i>	<i>Deaths Under One Year</i>	<i>Infant Mortality Rates</i>
Essex County .....	11,416	12.5	396	34
Belleville Town .....	415	13.0	11	26
Bloomfield Town .....	605	13.4	19	31
East Orange City .....	854	11.2	21	24
Irvington Town .....	726	10.3	19	26
Montclair Town .....	462	9.6	12	25
Newark City .....	6,307	13.8	255	40
Nutley Town .....	278	10.9	7	25
Orange City .....	520	14.3	19	36
South Orange Village .....	131	7.9	4	30
West Orange Town .....	344	12.2	17	49
Gloucester County .....	1,135	14.0	57	50
Woodbury City .....	130	14.1	4	30
Hudson County .....	8,968	12.4	346	38
Bayonne City .....	1,120	11.8	45	40
Guttenberg Town .....	64	9.7	5	78
Harrison Town .....	214	13.7	7	32
Hoboken City .....	663	11.1	30	45
Jersey City .....	4,368	13.4	179	40
Kearny Town .....	556	11.8	12	21
Secaucus Town .....	72	6.8	3	41
Union City .....	662	11.2	24	36
West New York .....	532	13.2	18	33
Hunterdon County .....	465	13.0	27	58
Lambertville .....	80	17.7	5	62
Mercer County .....	2,667	13.4	113	42
Princeton Borough .....	99	13.2	3	30
Trenton City .....	1,618	12.9	74	45
Middlesex County .....	3,138	13.4	125	39
Carteret Borough .....	176	12.3	7	39
Highland Park .....	124	11.9	4	32
New Brunswick .....	487	13.7	21	43
Perth Amboy .....	583	13.1	26	44
Sayreville .....	125	13.4	6	48
South Amboy .....	139	15.9	6	43
South River .....	153	12.1	5	32
Monmouth County .....	2,109	12.7	88	41
Asbury Park .....	167	10.3	12	71
Long Branch .....	229	11.1	5	21
Red Bank .....	161	12.6	4	24

	<i>Births (Exclusive of Stillbirths)</i>	<i>Birth Rates per 1,000 Population</i>	<i>Deaths Under One Year</i>	<i>Infant Mortality Rates</i>
Morris County .....	1,685	13.7	65	38
Dover .....	159	15.7	6	37
Madison .....	116	13.9	3	25
Morristown .....	233	13.5	6	25
Ocean County .....	479	12.6	29	60
Passaic County .....	3,889	12.1	139	35
Clifton .....	610	10.9	25	40
Hawthorne .....	144	9.7	3	20
Passaic City .....	781	12.4	22	28
Paterson City .....	1,737	12.4	58	33
Salem County .....	734	19.8	29	39
Salem City .....	150	18.0	10	66
Somerset County .....	1,032	14.2	41	39
Bound Brook .....	123	15.3	2	16
North Plainfield .....	138	12.5	3	21
Somerville .....	133	14.9	4	30
Sussex County .....	476	16.3	24	50
Union County .....	4,572	13.0	176	38
Elizabeth City .....	1,602	13.0	87	54
Linden .....	406	15.1	9	22
Plainfield .....	547	14.6	21	38
Rahway .....	237	13.0	7	29
Roselle .....	186	11.4	11	59
Roselle Park .....	100	9.5	6	60
Summit .....	187	11.4	4	21
Westfield .....	205	9.6	4	19
Warren County .....	632	12.3	27	42
Phillipsburg .....	239	11.7	10	41

*Typhoid Fever*—The number of deaths was 18 and the death rate only 0.4 per 100,000 population. Similar figures for 1937 were 25 and 0.5 respectively. That the New Jersey rate was low was proven by the 1937 rate of 2.1 for the United States. The rate for the country for 1938 was not available. The number of deaths from typhoid fever and other diseases of the International List of Causes of Death by counties and cities, may be obtained by referring to Table 20. Table 22 shows the more important causes by sex, color and age groups.

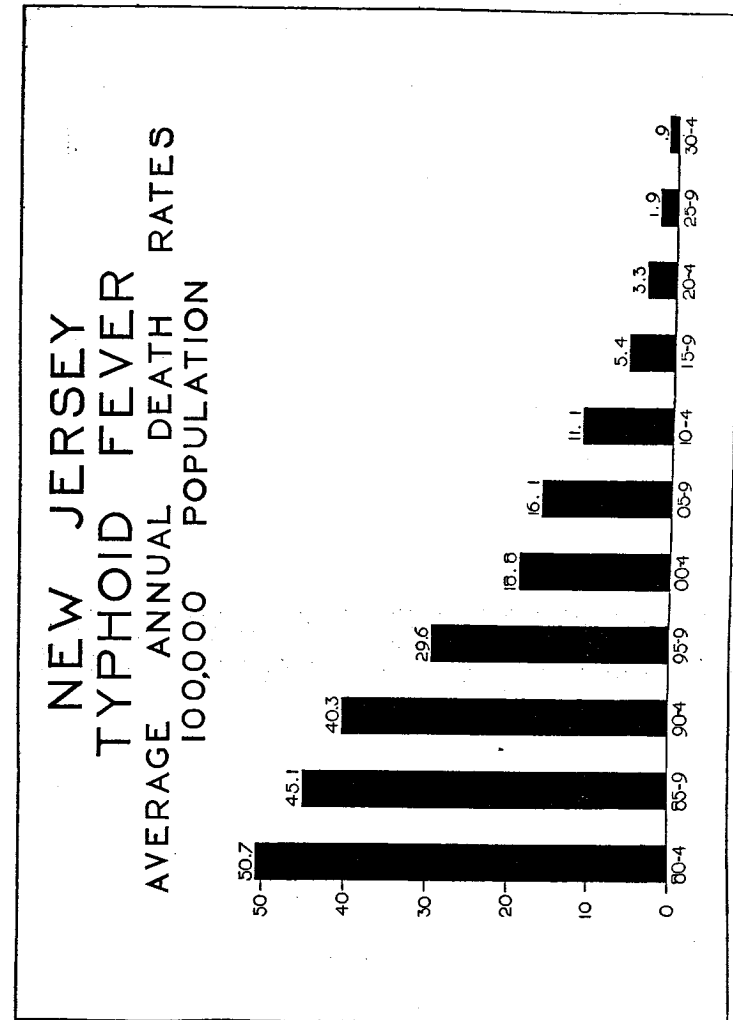




TABLE 8—COMPARATIVE DEATH RATES FROM TYPHOID FEVER PER 100,000 POPULATION, IN THE REGISTRATION AREA OF U. S. AND IN N. J. FOR 10 YEARS

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Registration area of the United States .....	4.2	4.7	4.4	3.6	3.5	3.3	2.7	2.5	2.1	...
New Jersey .....	1.4	1.1	0.9	0.7	0.9	0.7	0.5	0.6	0.5	0.4

TABLE 9—URBAN AND RURAL DEATHS FROM TYPHOID FEVER—1938

	Estimated population	Deaths from typhoid fever	Rate per 100,000 population
New Jersey .....	4,427,000	18	0.4
Municipalities having 5,000 or more inhabitants in 1930 .....	2,216,000	17	0.5
Remainder of State .....	1,211,000	1	0.1

TABLE 10—DEATHS FROM TYPHOID FEVER, PER 100,000 POPULATION, BY COUNTIES, FOR 10 YEARS

	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Atlantic .....	1.0	3.1	1.5	2.2	2.1	1.5	5.8	4.2	1.4	1.4
Bergen .....	0.7	...	0.7	...	0.2	1.0	0.9	1.4	0.4	0.4
Burlington .....	3.1	3.1	1.0	3.1	4.1	...	...	1.0	2.0	1.0
Camden .....	2.9	1.9	0.7	1.5	1.5	0.3	1.1	0.3	0.7	...
Cape May .....	1.4	3.3	1.4	1.3	2.7	3.2	6.2	3.0	...	...
Cumberland .....	1.3	0.8	0.7	0.5	0.6	0.4	0.1	0.1	0.5	0.5
Gloucester .....	3.3	...	2.7	2.6	2.5	1.0	...	1.2	1.2	...
Hudson .....	0.9	0.7	...	0.2	0.1	0.1	...	0.2	0.1	0.6
Hunterdon .....	...	...	...	...	...	...	...	...	...	...
Mercer .....	1.5	1.5	1.5	0.5	2.0	0.5	...	1.0	...	0.5
Middlesex .....	1.9	1.8	1.3	1.3	0.4	...	...	...	...	0.4
Monmouth .....	1.7	3.3	2.8	3.1	1.8	7.7	1.2	0.6	3.6	...
Morris .....	...	0.8	0.8	...	1.6	1.7	...	...	...	...
Ocean .....	...	2.9	2.9	...	2.7	...	...	...	2.6	...
Passaic .....	2.3	...	1.9	0.6	...	0.6	0.3	0.3	...	0.3
Salien .....	...	2.7	...	...	5.4	...	...	5.5	...	...
Somerset .....	...	4.5	...	...	5.6	1.4	1.4	2.8	1.3	...
Sussex .....	4.0	...	...	...	...	...	...	...	3.4	...
Union .....	1.1	0.6	1.8	...	0.5	...	...	0.2	2.8	...
Warren .....	...	...	...	...	...	...	...	...	...	...
New Jersey .....	1.4	1.1	0.9	0.7	0.9	0.7	0.5	0.6	0.5	0.4

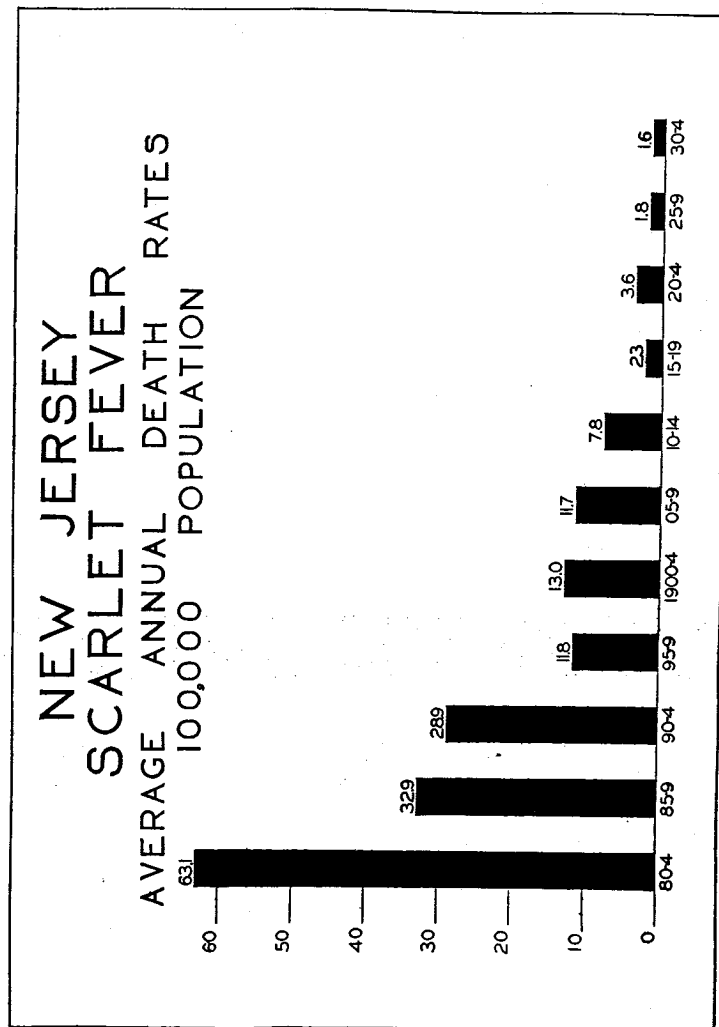
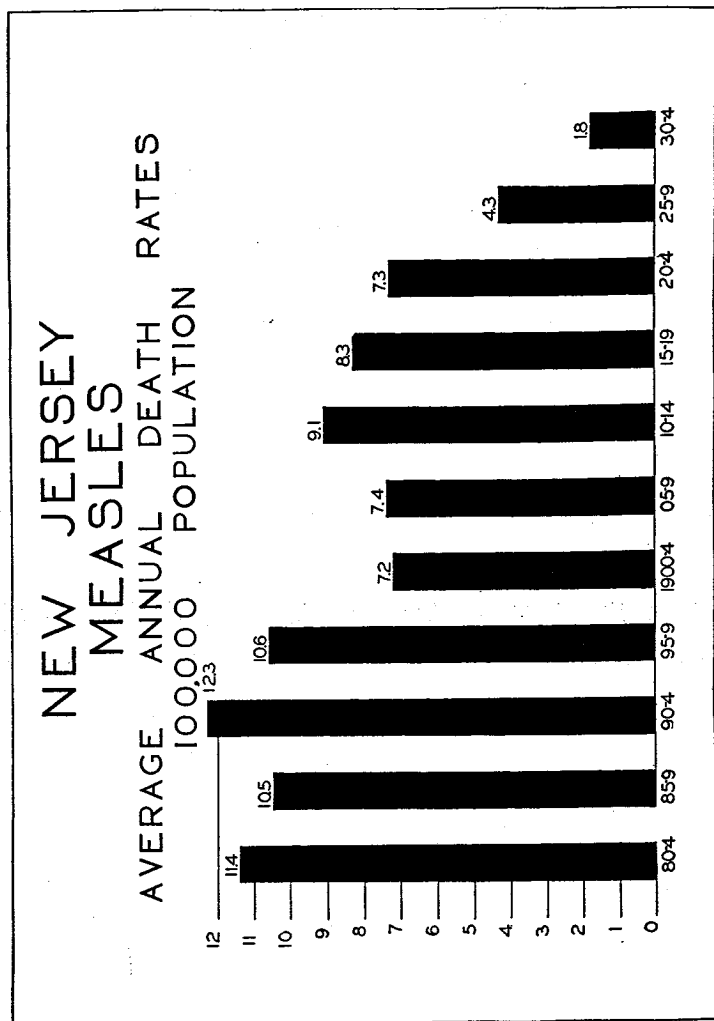
*Malaria*—As the following figures show, deaths during recent years from this affection are practically negligible in this State:

1879 .....	268	1894 .....	162	1909 .....	25	1924 .....	6
1880 .....	293	1895 .....	144	1910 .....	25	1925 .....	3
1881 .....	431	1896 .....	119	1911 .....	25	1926 .....	2
1882 .....	379	1897 .....	132	1912 .....	29	1927 .....	2
1883 .....	290	1898 .....	82	1913 .....	11	1928 .....	3
1884 .....	230	1899 .....	96	1914 .....	10	1929 .....	5
1885 .....	209	1900 .....	84	1915 .....	17	1930 .....	5
1886 .....	243	1901 .....	50	1916 .....	10	1931 .....	0
1887 .....	217	1902 .....	36	1917 .....	5	1932 .....	3
1888 .....	264	1903 .....	40	1918 .....	13	1933 .....	1
1889 .....	203	1904 .....	47	1919 .....	2	1934 .....	0
1890 .....	195	1905 .....	21	1920 .....	5	1935 .....	6
1891 .....	180	1906 .....	33	1921 .....	10	1936 .....	3
1892 .....	198	1907 .....	29	1922 .....	3	1937 .....	0
1893 .....	148	1908 .....	30	1923 .....	2	1938 .....	1

*Smallpox*—No deaths from smallpox have occurred in New Jersey since 1925, when as in 1924 the disease was prevalent in epidemic form in certain sections of the State.

*Measles*—This disease was responsible for 31 deaths during 1938. During the preceding year 55 deaths occurred. The death rate per 100,000 population was 0.7 and for 1937, 1.2.

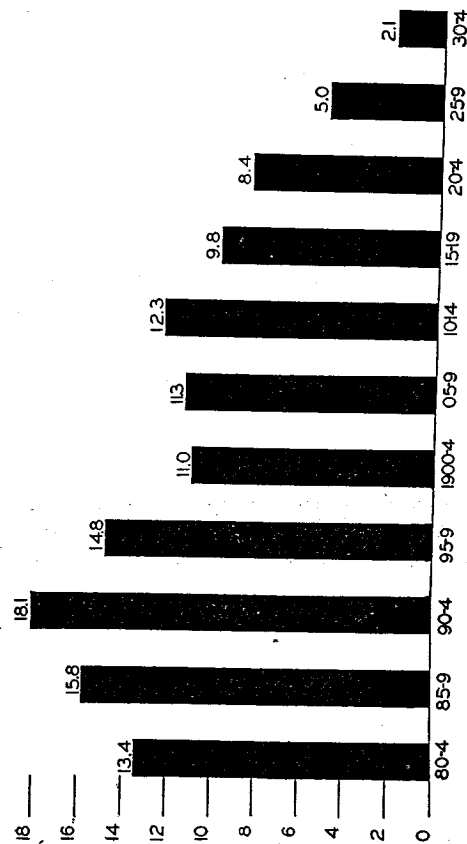
*Scarlet Fever*—The number of deaths from scarlet fever was 12, equivalent to a rate of 0.2 per 100,000 population. The number for the previous year was 16 and the rate was 0.3.

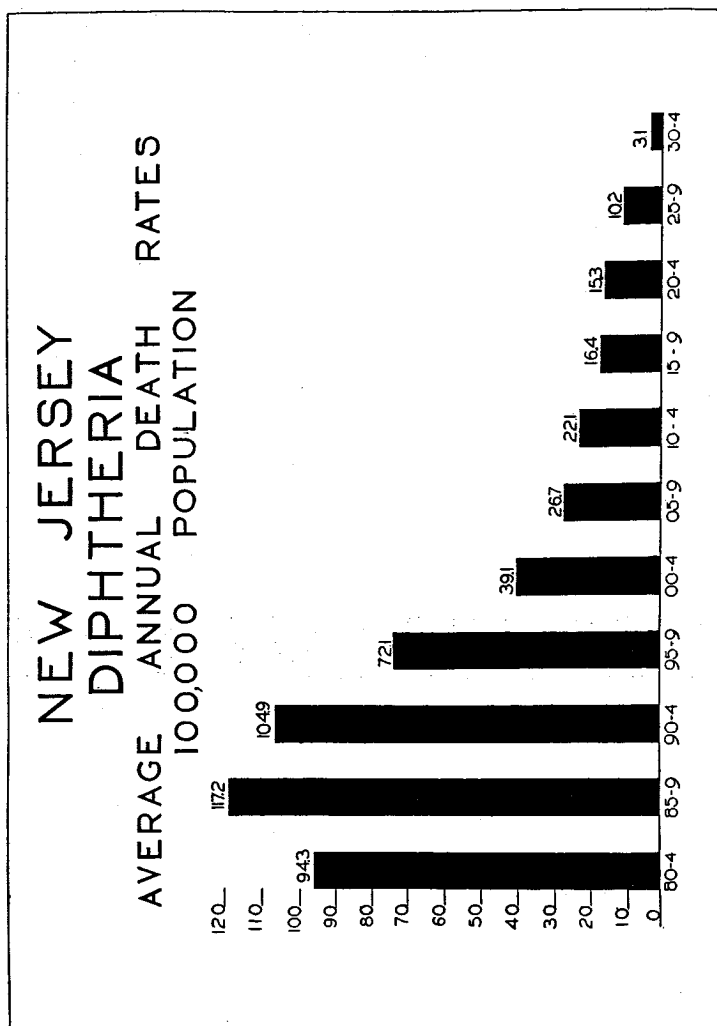


*Whooping Cough*—This disease caused 54 deaths during 1938; for 1937 the number was 48 and for 1936, 57. The 1938 death rate was 1.2 per 100,000 population.

*Diphtheria*—During 1938 only 33 persons died from diphtheria and laryngeal croup, equivalent to a rate of 0.7 per 100,000 population, compared with 0.6 for the previous year and 0.4 for 1936. The death rate from diphtheria for 1888 was 148 per 100,000 population. During the decade beginning with 1900 the rate declined from 48 to 25. The following 10-year period showed a decline to 18. The rate for 1937 was next to the lowest recorded and was decidedly favorable in comparison with the latest rate available for the United States, 2.0 for 1937.

NEW JERSEY  
WHOOPING COUGH  
AVERAGE ANNUAL DEATH RATES  
100,000 POPULATION





*Tuberculosis*—The number of deaths from all forms of tuberculosis during 1938 was 1,962, of which 1,801 were deaths from tuberculosis of the respiratory system. The death rates per 100,000 population were 44.3 and 40.6 respectively, which were the lowest rates for tuberculosis ever recorded in New Jersey. The rates for 1937 were 48.1 and 44.2.

*Colored Races*—The number of deaths from all forms of tuberculosis was 419 and the rate 181.3 per 100,000 of colored population. The number of deaths from tuberculosis of the respiratory system was 371; the rate 160.6. Rates for the white population were 48.2 and 44.7 respectively.

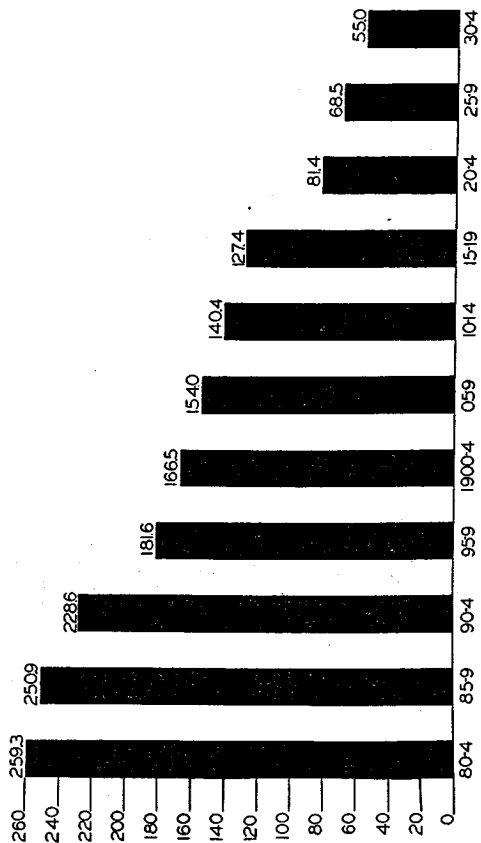
TABLE 11.—AVERAGE ANNUAL DEATH RATES FROM ALL CAUSES AND FROM RESPIRATORY TUBERCULOSIS FOR 60 YEARS, NEW JERSEY COMPARED WITH RATES FOR 1938

COUNTIES	Rates per 1,000 population		Rates per 100,000 population	
	Average annual death rates from all causes	Death rates from all causes, 1938	*Average annual death rates from respiratory tuberculosis	*Death rates from respiratory tuberculosis of 1938
Atlantic .....	14.9	12.0	106	51
Bergen .....	11.1	8.3	85	31
Burlington .....	14.3	11.8	120	39
Camden .....	14.8	10.1	129	35
Cape May .....	14.1	13.6	86	29
Cumberland .....	11.1	12.3	128	43
Essex .....	14.1	9.7	145	48
Gloucester .....	13.4	10.6	106	37
Hudson .....	15.1	9.5	150	47
Hunterdon .....	14.2	13.7	109	39
Mercer .....	14.4	9.9	144	38
Middlesex .....	12.8	8.6	101	31
Monmouth .....	14.8	12.5	111	43
Morris .....	11.9	11.0	123	26
Ocean .....	14.6	14.1	129	42
Passaic .....	13.4	9.2	119	39
Salem .....	13.5	12.5	120	40
Somerset .....	12.7	9.4	99	31
Sussex .....	12.7	12.9	101	34
Union .....	11.8	8.8	100	36
Warren .....	13.8	12.0	100	25
The State .....	13.9	9.9	125	40

\* 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.

*Cancer*—The number of deaths from cancer and other malignant growths for 1938 was 5,776 and the death rate was 130.4 per 100,000 population compared with 131.4 for the previous year. The mortality from the disease, with few exceptions, has steadily increased during the 60 years recorded in New Jersey.

# NEW JERSEY RESPIRATORY TUBERCULOSIS AVERAGE ANNUAL DEATH RATES 100,000 POPULATION



# NEW JERSEY CANCER AVERAGE ANNUAL DEATH RATES 100,000 POPULATION

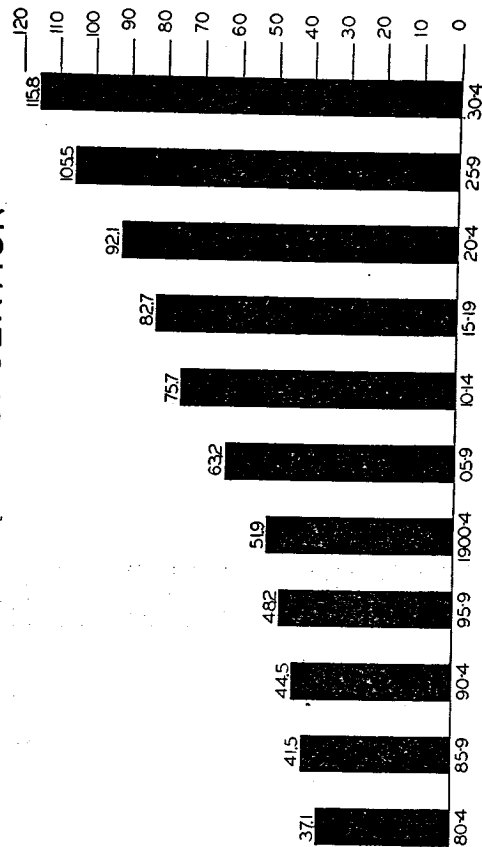


TABLE 12—DEATHS FROM CANCER AND OTHER MALIGNANT TUMORS BY ORGAN AFFECTED, NEW JERSEY, 1938

CANCER AND OTHER MALIGNANT TUMORS	AGE PERIODS										Total									
	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 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89
<b>Oral Cavity and Pharynx—</b>																				
Male																				
Female																				
Total																				
<b>Digestive Tract and Peritoneum—</b>																				
Male																				
Female																				
Total																				
<b>Respiratory System—</b>																				
Male																				
Female																				
Total																				
<b>Uterus—Female</b>																				
<b>Other Female Genital Organs</b>																				
<b>Breast—</b>																				
Male																				
Female																				
Total																				
<b>Male Genitourinary Organs</b>																				
<b>Skid</b>																				
Male																				
Female																				
Total																				
<b>Other or Unspecified Organs—</b>																				
Male																				
Female																				
Total																				
<b>Total Male</b>																				
<b>Total Female</b>																				
<b>Total Male and Female</b>																				

*Encephalitis Lethargica or Sleeping Sickness*—Twenty-eight deaths were assigned to this disease for the year 1938. In 1922, which was the first year that the deaths were separately classified, there were 45 deaths. Twenty-five deaths were recorded for 1937.

*Nephritis*—Deaths due to acute and chronic nephritis totaled 3,043, compared with 3,069 for the previous year.

*Suicide*—While deaths by this means increased considerably during the period 1926 to 1932, a reversal of trend started in 1933 and continued through 1936. Deaths for 1938 showed an increase of 94 over the number for 1937. Of the various means employed, hanging or strangulation was responsible for the most deaths, with poisonous gas and firearms in second and third places. The number of deaths by suicide for 10 years follows:

1929	622	1934	667
1930	601	1935	593
1931	694	1936	574
1932	740	1937	588
1933	709	1938	682

TABLE 13—DEATHS FROM SUICIDE, NEW JERSEY, 1988

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 64	65 to 69	70 to 74		75 to 79	80 to 84	85 to 89	90 and over
<b>Solid or liquid poisons and corrosive substances—</b>																		
Male .....	1	2	2	2	4	4	4	4	1	7	2	1	1	1	1	1	1	25
Female .....	1	2	1	2	3	4	5	3	1	4	3	2	1	1	1	1	1	25
Total .....	2	4	3	4	7	8	9	7	2	11	5	3	2	2	2	2	2	51
<b>Poisonous gas—</b>																		
Male .....	4	9	8	9	10	10	10	17	22	22	12	7	5	5	1	1	1	135
Female .....	7	7	7	9	11	11	11	8	8	7	7	5	3	4	1	1	1	82
Total .....	11	16	15	18	21	21	21	25	30	29	19	12	8	9	2	2	2	217
<b>Hanging or strangulation—</b>																		
Male .....	2	6	4	8	5	15	16	22	17	20	10	11	11	3	2	1	1	130
Female .....	1	1	2	4	6	6	5	5	6	5	2	1	1	1	1	1	1	39
Total .....	3	7	6	12	11	21	21	27	23	25	12	12	11	4	3	2	2	169
<b>Drowning—</b>																		
Male .....	1	1	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	10
Female .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
Total .....	2	2	3	3	3	3	3	3	2	2	2	2	2	2	2	2	2	24
<b>Firearms—</b>																		
Male .....	4	0	11	9	9	17	9	10	17	6	10	8	1	1	1	1	1	118
Female .....	1	1	1	2	1	1	1	1	3	1	6	10	9	1	1	1	1	9
Total .....	5	1	12	11	10	18	10	10	20	7	16	17	2	2	2	2	2	127
<b>Cutting or piercing instruments—</b>																		
Male .....	3	3	1	3	1	3	2	2	2	2	1	4	1	1	1	1	1	21
Female .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14
Total .....	4	4	2	4	2	4	3	3	3	3	2	5	2	2	2	2	2	35

<b>Jumping from high places—</b>																			
Male .....	1	2	2	4	3	4	3	6	2	2	2	2	1	1	1	1	1	28	
Female .....	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	
Total .....	2	4	3	5	5	5	4	7	3	3	3	3	2	2	2	2	2	38	
<b>Crushing—</b>																			
Male .....	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	5	
Female .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	
Total .....	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	10	
<b>Other means—</b>																			
Male .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Female .....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Total .....	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	
<b>Total Male .....</b>	9	18	28	33	32	50	33	60	66	45	33	31	10	6	2	2	2	404	
<b>Total Female .....</b>	3	5	13	13	20	24	24	16	20	15	11	6	5	3	1	1	1	188	
<b>Total Male and Female .....</b>	12	23	41	46	52	83	77	76	85	60	44	37	24	9	3	3	3	592	

## AUTOMOBILE FATALITIES

Deaths due to accidents in which moving automobiles were involved totaled 902 compared with 1,295 for 1937. The figures include 13 deaths due to motorcycle accidents and 22 deaths of bicyclists who were struck by automobiles, but are exclusive of 14 deaths due to the accidental inhalation of motor exhaust.

Analyzed the motor fatality data show the death of 449 pedestrians, which number is approximately 50 percent of the total. Slightly less than one-sixth of the pedestrians who died were children under 15 years of age. Seventeen percent of the drivers and occupants of automobiles who were killed were less than 20 years of age.

The following table shows deaths, in New Jersey, of both residents and non-residents of the State, arranged by age groups:

MOTOR VEHICLE FATALITIES BY AGE PERIODS: 1938

Age	Pedestrians struck by motor vehicles		Deaths from other motor vehicle accidents		Totals	
	Residents	Non- Residents	Residents	Non- Residents	Residents	Non- Residents
Under 5 years .....	24	0	7	2	31	2
-5 to 9 .....	36	0	3	3	39	3
10 to 14 .....	15	0	17	0	32	0
15 to 19 .....	10	0	41	3	51	3
20 to 24 .....	13	3	50	7	63	10
25 to 29 .....	4	1	36	13	40	14
30 to 59 .....	175	8	159	50	334	58
60 to 69 .....	101	4	35	6	136	10
70 and over .....	53	2	18	3	71	5
Totals .....	431	18	366	87	797	105

MOTOR VEHICLE FATALITIES BY SEX, COLOR AND TYPE OF ACCIDENT: 1938

	Males		Females	
	White	Colored	White	Colored
Pedestrians .....	323	36	84	6
Collision auto and train or engine .....	18	1	1	0
Collision auto and street car .....	0	0	0	0
Collision auto with stationary objects .....	76	3	15	4
Collision auto with another motor vehicle .....	130	13	63	4
Collision auto with bicycle .....	17	4	1	0
Motorcycle accidents .....	12	1	0	0
Other accidents .....	67	5	16	2
Total .....	643	63	180	16

MOTOR VEHICLE FATALITIES BY MONTHS OF DEATH: 1938

January .....	88	July .....	85
February .....	62	August .....	87
March .....	70	September .....	73
April .....	65	October .....	77
May .....	65	November .....	68
June .....	66	December .....	96
Total .....			902



TABLE 14—PERCENTAGE OF THE VARIOUS CAUSES OF TOTAL DEATHS AND EACH SEX OF TOTAL: NEW JERSEY—1938

Abridged International List Number	CAUSE OF DEATH	Percentage of Total	Male—Percentage of Total	
			Male—Percentage of Total	Females—Percentage of Total
1	Typhoid and paratyphoid fever	..	45	55
2	Typhus fever	..	..	..
3	Smallpox	..	..	..
4	Measles	..1	35	65
5	Scarlet fever	..1	58	42
6	Whooping cough	..1	50	50
7	Diphtheria	..1	55	45
8	Influenza	..5	50	50
9	Diagnose	..	..	..
10	Tuberculosis of the respiratory system	4.1	60	40
11	Other forms of tuberculosis	..4	46	54
12	Syphilis	..9	73	27
13	Malaria	..	..	100
14	Other infectious and parasitic diseases	..4	54	46
15	Cancer and other malignant tumors	13.1	47	53
16	Tumors, nonmalignant, or of which the nature is not specified	..6	38	62
17	Chronic rheumatism and gout	..1	25	75
18	Diabetes mellitus	2.9	32	68
19	Alcoholism (acute or chronic)	..2	84	16
20	Other general diseases and chronic poisonings	1.6	45	55
21	Progressive locomotor ataxia and general paralysis of the insane	..3	87	13
22	Cerebral hemorrhage, cerebral embolism and thrombosis	7.8	46	54
23	Other diseases of the nervous system and of the organs of special sense	1.1	59	41
24	Diseases of the heart	31.8	55	45
25	Other diseases of the circulatory system	1.9	51	49
26	Bronchitis	..3	60	40
27	Pneumonias	5.5	55	45
28	Other diseases of the respiratory system (tuberculosis excepted)	..7	60	40
29	Diarrhea and enteritis	..5	57	43
30	Appendicitis	1.0	60	40
31	Diseases of the liver and biliary passages	1.9	51	49
32	Other diseases of the digestive system	2.3	61	39
33	Nephritis	6.9	48	52
34	Other diseases of the genitourinary system	1.3	66	34
35	Puerperal septicemia	..2	..	100
36	Other diseases of pregnancy, childbirth and the puerperal state	..3	..	100
37	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion	..2	49	51
38	Congenital debility and malformations, premature birth and other diseases of early infancy	3.2	54	46
39	Senility	..3	39	61
40	Suicide	1.5	72	28
41	Homicide	..3	56	44
42	Violent and accidental deaths (suicide and homicide excepted)	7.6	70	30
43	Cause of death not specified or ill-defined	..	64	36
	All causes	100.0	53.2	46.8

TABLE 15—DEATH RATES, TOTAL, WHITE AND COLORED, FROM IMPORTANT CAUSES, PER 100,000 TOTAL, WHITE AND COLORED POPULATION: NEW JERSEY—1938

Abridged International List Number	CAUSE OF DEATH	Total Deaths per 100,000 Estimated Population		
		Total Deaths per 100,000 Estimated Population	White Deaths per 100,000 Estimated White Population	Colored Deaths per 100,000 Estimated Colored Population
1	Typhoid and paratyphoid fever	0.4	0.4	1.7
2	Typhus fever	..	..	..
3	Smallpox	..	..	..
4	Measles	0.7	0.7	0.4
5	Scarlet fever	0.2	0.3	..
6	Whooping cough	0.2	1.0	5.8
7	Diphtheria	0.7	0.7	0.8
8	Influenza	4.5	4.3	8.2
9	Diagnose	..	..	..
10	Tuberculosis of the respiratory system	46.6	34.1	160.6
11	Other forms of tuberculosis	8.6	2.7	20.7
12	Syphilis	8.9	5.9	63.6
13	Malaria	..	..	..
14	Other infectious and parasitic diseases	4.1	3.7	11.6
15	Cancer and other malignant tumors	130.4	131.1	118.0
16	Tumors, nonmalignant, or of which the nature is not specified	5.8	5.5	12.1
17	Chronic rheumatism and gout	1.1	1.2	1.2
18	Diabetes mellitus	28.9	28.8	32.0
19	Alcoholism (acute or chronic)	1.8	1.8	3.4
20	Other general diseases and chronic poisonings	15.0	15.9	15.9
21	Progressive locomotor ataxia and general paralysis of the insane	2.7	2.3	9.9
22	Cerebral hemorrhage, cerebral embolism and thrombosis	77.5	76.5	96.5
23	Other diseases of the nervous system and of the organs of special sense	10.5	10.3	14.7
24	Diseases of the heart	316.4	314.0	361.9
25	Other diseases of the circulatory system	19.1	19.2	17.7
26	Bronchitis	2.7	2.8	2.1
27	Pneumonias	54.2	50.4	125.1
28	Other diseases of the respiratory system (tuberculosis excepted)	6.8	6.6	12.1
29	Diarrhea and enteritis	4.9	4.6	9.9
30	Appendicitis	9.9	9.9	11.2
31	Diseases of the liver and biliary passages	19.2	19.7	11.6
32	Other diseases of the digestive system	22.7	22.3	30.7
33	Nephritis	68.7	67.2	97.4
34	Other diseases of the genitourinary system	12.7	12.4	19.9
35	Puerperal septicemia	1.5	1.3	5.1
36	Other diseases of pregnancy, childbirth and the puerperal state	2.7	2.7	3.4
37	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion	..	..	..
38	Congenital debility and malformations, premature birth and other diseases of early infancy	2.0	1.9	4.3
39	Senility	32.0	30.3	63.6
40	Suicide	3.3	3.4	2.5
41	Homicide	13.4	15.7	9.9
42	Violent and accidental deaths (suicide and homicide excepted)	2.7	1.9	15.6
43	Cause of death not specified or ill-defined	55.9	54.5	81.8
	All causes	994.9	968.6	1472.7

TABLE 16.—DEATHS (EXCLUSIVE OF STILLBIRTHS) BY CAUSES AND MONTHS OF DEATH: NEW JERSEY,—1938

Abridged International List Number	CAUSE OF DEATH	MONTH OF DEATH												Total		
		January	February	March	April	May	June	July	August	September	October	November	December			
1	Typhoid and paratyphoid fever	20	1	1	3	2	3	2	2	3	4	1	1	1	1	1
2	Typhus fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	Paratyphoid fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	Amoebic dysentery	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	Scarlet fever	31	7	4	10	5	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	Diphtheria	12	2	1	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	Whooping cough	34	4	5	4	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	Epidemic typhus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	Pharyngitis	206	26	37	22	32	13	2	1	1	2	4	2	4	6	2
10	Tuberculosis of the respiratory system	1801	185	103	172	100	176	151	141	146	133	142	112	112	112	112
11	Other forms of tuberculosis	11	0	17	16	19	13	29	15	13	7	8	.....	.....	.....	.....
12	Syphilis	393	30	30	30	35	34	21	23	29	38	30	31	31	31	31
13	Other infectious and parasitic diseases	182	13	18	20	18	17	17	11	11	10	10	13	13	13	13
14	Cancer and other malignant tumors of which the nature is not specified	3770	515	433	488	473	528	489	481	457	408	500	453	458	458	458
15	Lung cancer and other malignant tumors of which the nature is not specified	2600	296	241	241	292	263	163	21	16	16	28	22	23	23	23
16	Chloroma, myeloid sarcoma and gout	53	0	5	8	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	Diabetes mellitus	1283	110	101	126	133	102	94	103	70	90	106	61	61	61	61
18	Alcoholism (acute or chronic)	82	9	7	4	5	13	6	0	7	8	6	2	2	2	2
19	Other general diseases and chronic poisonings	712	62	50	60	67	86	69	54	68	61	61	62	62	62	62
20	Progressive locomotor ataxia and general paralysis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	Progressive muscular atrophy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	Cerebral hemorrhage	121	8	14	10	14	0	12	8	14	6	10	9	7	7	7
23	Cerebral thrombosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	Cerebral embolism and thrombosis	3435	321	269	313	291	281	225	237	208	202	261	282	282	282	282
25	Other diseases of the nervous system and of the organs of special sense	403	52	42	33	46	35	30	43	33	30	37	32	33	33	33
26	Other diseases of the circulatory system	14016	1336	1161	1341	1300	1230	1019	973	1023	903	1203	1163	1200	1200	1200
27	Bronchitis	8491	81	47	77	74	67	82	80	63	60	73	86	68	68	68
28	Pneumonia	111	8	20	22	17	8	6	2	8	6	2	3	0	0	0
29	Other diseases of the respiratory system (tuberculosis excepted)	2402	320	310	352	280	198	120	85	85	105	154	144	144	144	144
30	Other diseases of the respiratory system (tuberculosis excepted)	308	41	28	29	33	24	18	20	18	13	13	14	14	14	14
31	Diarrhea and enteritis	217	41	22	29	10	15	12	12	18	17	17	17	17	17	17
32	Appendicitis	441	1	3	10	10	10	10	10	10	10	10	10	10	10	10
33	Diseases of the liver and biliary passages	854	71	61	70	68	68	67	67	67	67	67	67	67	67	67
34	Other diseases of the digestive system	1006	84	89	108	85	87	83	81	74	66	78	79	70	70	70
35	Nephritis	3913	300	249	334	292	271	224	218	205	201	245	232	232	232	232
36	Other diseases of the genitourinary system	368	4	5	7	4	5	2	5	3	6	13	5	5	5	5
37	Puerperal septicemia	123	11	13	6	13	7	10	8	18	10	8	8	8	8	8
38	Other diseases of pregnancy, childbirth and the puerperal state	80	0	9	9	9	7	9	7	8	5	10	5	5	5	5
39	Congenital debility and malformations	1520	128	101	104	124	111	143	131	112	126	114	102	102	102	102
40	Birth and other diseases of early infancy	150	12	9	14	7	15	3	10	10	10	10	10	10	10	10
41	Senility	682	61	41	68	62	60	65	62	56	4	6	6	6	6	6
42	Homicide	137	9	18	7	12	10	8	12	8	7	10	10	10	10	10
43	Violent and accidental deaths (homicide and homicide excepted)	2170	234	175	238	150	207	203	249	238	107	100	180	215	215	215
44	Causes of death not specified or ill-defined	22	.....	2	1	4	8	2	1	1	1	2	4	4	4	4
All causes		44015	4204	3094	4002	3828	3390	3324	3303	3250	3516	3908	3740	3740	3740	3740



TABLE IV—DEATHS (EXCLUSIVE OF STILLBIRTHS) FROM EACH CAUSE OF THE ABRIDGED INTERNATIONAL LIST, BY AGE, SEX, AND COLOR IN NEW JERSEY, 1988—Continued

CAUSE OF DEATH, SEX, AND COLOR	AGE PERIODS—YEARS																	All deaths								
	Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59		60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 and over	Age unknown
	12 Syphilis— Total..... Males—White..... Males—Colored..... Females—White..... Females—Colored.....	20 365 103 63 43	1 1 1 1 1	8 4 2 3 1	8 2 2 1 1	7 2 2 1 1	21 8 7 8 3	2 2 1 1 1	2 3 1 1 1	3 3 1 1 1	6 2 1 1 3	6 2 1 1 5	8 2 1 1 6	23 9 11 5 6	26 9 14 6 2	30 10 15 7 4	43 17 16 10 9		47 24 17 10 7	47 28 18 7 9	47 38 18 7 10	35 24 12 7 6	35 24 12 7 6	4 1 1 1 1	4 1 1 1 1	2 1 1 1 1
13 Malaria— Total..... Males—White..... Males—Colored..... Females—White..... Females—Colored.....	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1	1 1 1 1 1
14 Other infectious and parasitic diseases— Total..... Males—White..... Males—Colored..... Females—White..... Females—Colored.....	182	15	1	8	7	24	7	10	10	11	10	9	11	11	11	12	10	10	9	6	9	1	1	1	1	1
15 Cancer and other malignant tumors— Total..... Males—White..... Males—Colored..... Females—White..... Females—Colored.....	5778	2	2	2	2	6	10	7	14	20	44	78	105	275	442	561	731	822	803	727	529	300	103	20	20	
16 Tumors, nonmalignant, or of which the nature is not specified— Total..... Males—White..... Males—Colored..... Females—White..... Females—Colored.....	290	1	1	1	1	4	9	4	5	12	8	14	25	43	41	29	17	15	13	8	8	5	1	1	1	
17 Chronic rheumatism and gout— Total..... Males—White..... Males—Colored..... Females—White..... Females—Colored.....	83	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
18 Diabetes mellitus— Total..... Males—White..... Males—Colored..... Females—White..... Females—Colored.....	1283	1	1	1	1	2	2	3	7	2	3	3	11	13	20	57	80	77	60	70	63	12	5	5	5	
19 Alcoholism (acute or chronic)— Total..... Males—White..... Males—Colored..... Females—White..... Females—Colored.....	82	1	1	1	1	2	5	1	3	4	9	9	12	12	16	13	13	7	7	7	1	1	1	1	1	
20 Other chronic diseases and chronic intoxications— Total..... Males—White..... Males—Colored..... Females—White..... Females—Colored.....	712	61	6	5	8	80	41	26	35	90	54	60	64	60	46	38	65	67	41	41	20	17	2	1	1	
21 Progressive locomotor ataxia and general paralysis of the insane— Total..... Males—White..... Males—Colored..... Females—White..... Females—Colored.....	300	19	4	1	5	11	18	12	17	15	83	27	22	22	22	22	27	30	27	23	15	12	1	1	1	
22 Cerebral hemorrhage, cerebral thrombosis— Total..... Males—White..... Males—Colored..... Females—White..... Females—Colored.....	1470	1	1	1	1	3	4	1	2	8	14	14	10	14	10	14	19	16	15	4	5	4	5	2	2	
23 Other diseases of the circulatory system and of the organs of special sense— Total..... Males—White..... Males—Colored..... Females—White..... Females—Colored.....	406	28	8	7	5	4	22	20	22	17	20	23	83	22	84	28	28	20	37	32	21	10	5	1	1	

















TABLE 20.—DEATHS, ADJUSTED FOR RESIDENCE, FROM EACH CAUSE, DETAILED OF 5,000 OR MORE INHABITANTS IN 1930. COUNTY

Table with 17 columns: State Total, Atlantic County, Atlantic City, Hammonton, Pleasantville, Bergen County, Bergenfield, Cliffside Park, Englewood, Fairview, Fort Lee, Garfield, Hackensack. Rows list 108 causes of death from Nonmalignant tumors to Lobar pneumonia.

INTERNATIONAL LIST, IN THE COUNTIES OF NEW JERSEY AND MUNICIPALITIES FIGURES INCLUDE PLACES WHICH FOLLOW: 1938—Continued

Table with 17 columns: Lodi, North Arlington, Ridgefield Park, Ridgewood, Rutherford, Wallington, Burlington County, Perchtown, Burlington City, Camden County, Audubon, Camden City, Collingswood, Gloucester City, Haddonfield, Cape May County, Cumberland County, Bridgeton, Millville, Vineland, Essex County, Deptford. Rows continue the list of 108 causes of death.



TABLE 20.—DEATHS, ADJUSTED FOR RESIDENCE, FROM EACH CAUSE, DETAILED OF 5,000 OR MORE INHABITANTS IN 1930.

Table with 14 columns representing counties (South River, Monmouth County, Asbury Park, Long Branch, Red Bank, Morris County, Dover, Madison, Morristown, Ocean County, Passaic County) and 105 rows of causes of death (e.g., 54. Nonmalignant tumors, 55. Tumors of which the nature is not specified, etc.).

INTERNATIONAL LIST, IN THE COUNTIES OF NEW JERSEY AND MUNICIPALITIES FIGURES INCLUDE PLACES WHICH FOLLOW: 1938—Continued

Table with 18 columns representing municipalities (Clifton City, Hawthorne, Passaic City, Paterson, Salem County, Salem City, Somerset County, Bound Brook, North Plainfield, Somerville, Sussex County, Union County, Elizabeth, Linden, Plainfield, Rahway, Roselle, Roselle Park, Summit, Westfield, Warren County, Phillipsburg) and 105 rows of causes of death, corresponding to the first table.

TABLE 20.—DEATHS, ADJUSTED FOR RESIDENCE, FROM EACH CAUSE, DETAILED OF 5,000 OR MORE INHABITANTS IN 1930. COUNTY

Table with columns for State Total, Atlantic County, Atlantic City, Hammonton, Pleasantville, Bergea County, Bergenfield, Cliffside Park, Langewood, Fairview, Fort Lee, Garfield, Hackensack and rows for various causes of death from 109 to 157.

INTERNATIONAL LIST, IN THE COUNTIES OF NEW JERSEY AND MUNICIPALITIES FIGURES INCLUDE PLACES WHICH FOLLOW: 1938—Continued

Table with columns for localities (Lodi, North Arlington, Ridgefield Park, Ridgewood, Rutherford, Wallington, Burlington County, Bordentown, Burlington City, Camden County, Audubon, Camden City, Collingswood, Gloucester City, Haddonfield, Cape May County, Cumberland County, Bridgeton, Millville, Vineland, Essex County, Belleville) and rows for various causes of death from 109 to 157.









TABLE 20.—DEATHS, ADJUSTED FOR RESIDENCE, FROM EACH CAUSE, DETAILED OF 5,000 OR MORE INHABITANTS IN 1930. COUNTY

Table with 14 columns (Bloomfield, East Orange, Irvington, Montclair, Newark, Nutley, Orange, South Orange, West Orange, Gloucester County, Woodbury) and 200 rows of causes of death. Includes a 'Total' row at the bottom.

Supplemental Tabulation of Certain Types of Violent and Accidental Deaths (Adjusted for Residence)—1938

Table with 14 columns (same as Table 20) and 17 rows of specific violent and accidental death categories (e.g., Accidents in mines and quarries, Railroad and automobile collisions).

INTERNATIONAL LIST IN THE COUNTIES OF NEW JERSEY AND MUNICIPALITIES FIGURES INCLUDE PLACES WHICH FOLLOW: 1938—Continued

Table with 17 columns (Hudson County, Bayonne, Guttenberg, Harrison, Hoboken, Jersey City, Kearny, Secaucus, Union City, West New York, Hunterdon County, Lambertville, Mercer County, Princeton, Trenton, Middlesex County, Carteret, Highland Park, New Brunswick, Perth Amboy, Shrewville, South Amboy) and 200 rows of causes of death. Includes a 'Total' row at the bottom.

Table with 17 columns (same as Table 20) and 17 rows of specific violent and accidental death categories (same as Table 20).



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
Tuberculosis of the respiratory system	10 to 19		1							
	20 to 29									
	30 to 39	4								
	40 to 49	3		1				1		
	50 to 59	3		3				1		
	60 to 69	3		3				1		
	70 to 79	3		3				1		
	80 and over	3		3				1		
	Totals	23	14	3	8				3	
Cancer and other malignant tumors	10 to 19		1							
	20 to 29									
	30 to 39									
	40 to 49	6		1						
	50 to 59	24	3	1						
	60 to 69	23	7	4	10					
	70 to 79	23	9	2	1					
	80 and over	14	2		1					
	Totals	95	24	9	24	5			1	2
Diseases of the nose and of the organs of special sense	10 to 19									
	20 to 29	2								
	30 to 39	1		1				1		
	40 to 49	3								
	50 to 59	11	4							
	60 to 69	17	1					1		
	70 to 79	34	6	1	4			1		
	80 and over	14	4	2	2	1				
	Totals	82	19	5	19	1			3	
Diseases of the circulatory system	10 to 19		2							
	20 to 29		2							
	30 to 39	1								
	40 to 49	7		2						
	50 to 59	36	14	2	1					
	60 to 69	65	17	2	19					
	70 to 79	121	19	9	28					
	80 and over	93	15	5	17				1	
	Totals	330	79	25	76	7			2	8

AND AGE GROUPS, NEW JERSEY, 1938

	MANUFACTURING AND MECHANICAL INDUSTRIES																		Laborers—			
	Bakers	Blacksmiths, forgemen and hammermen	Boilermakers	Brick and stone masons	Builders and building contractors	Carpenters, coopers and cabinet makers	Compositors, linotypers and typesetters	Dressmakers and seamstresses (not in factory)	Dyers	Electricians and electrical engineers	Engineers (stationary)	Engravers	Fileers, grinders, buffers and polishers (metal)	Fishermen (except locomotive and fire department)	Glaziers	Jewelers, watchmakers, goldsmiths and silversmiths	General and not specified	Building and hand trades	Chemical industries	Clay and stone industries (excepting potteries)		
Tuberculosis of the respiratory system																						
Totals	6	2	3	13	6	31		2	1	8		13	1		7							
Cancer and other malignant tumors																						
Totals	14	13	6	39	21	102	4	14	4	15	39	2	5	16	2	12						
Diseases of the nose and of the organs of special sense																						
Totals	9	14	6	25	11	72	2	11	1	8	20	3	8		3	8						
Diseases of the circulatory system																						
Totals	44	48	16	74	52	244	11	33	9	82	98	5	6	59	11	59						

TABLE 21.—DEATHS BY OCCUPATIONS AND

	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.)
Tuberculosis of the respiratory system	10 to 19								4	1		1
	20 to 29								2	3		2
	30 to 39	2							2	3		3
	40 to 49								2	3		2
	50 to 59								2	3		2
	60 to 69								1	1		1
	70 to 79								1	1		1
	80 and over								1	1		1
Totals	5						3	15	12	4		18
Cancer and other malignant tumors	10 to 19											1
	20 to 29								2	1		3
	30 to 39								2	4		3
	40 to 49	4		1					10	4		8
	50 to 59	3	1						23	10		8
	60 to 69	3							24	12		11
	70 to 79	3							13	8		12
	80 and over								1	6		1
Totals	15	1	1		3	5	8	72	36	34		17
Diseases of the meninges and of the organs of special sense	10 to 19											1
	20 to 29											1
	30 to 39											1
	40 to 49	1							1	1		2
	50 to 59								6	5		3
	60 to 69								13	9		5
	70 to 79								10	1		5
	80 and over								2	4		3
Totals	7				2		1	32	19	16		13
Diseases of the circulatory system	10 to 19								2	3		5
	20 to 29								5	5		12
	30 to 39								2	2		7
	40 to 49	4							25	15		13
	50 to 59	1							45	30		26
	60 to 69	1							51	38		33
	70 to 79	1							42	18		10
	80 and over	1							10	10		12
Totals	2	27	2	2	2	3	8	26	183	118		63

AGE GROUPS, NEW JERSEY, 1938—Continued

Millers (grain, flour, feed, etc.)	Milliners and millinery dealers	Molders, foundries and casters	Painters, glaziers, varnishers, enamelers, etc.	Papachangers	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	1																			
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
Totals	1	9	23	2		16	9	1		35	8	6	3	13	7		26	10	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	3	11	80	3	2	30	12	4		16	14	6	5	22	9	2	37	18	5	
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	9	39	1	1	17	11		20	6		9	5	9	18	10	7		
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	7	26	161	10	4	77	38	7	63	80	12	8	45	23	6	99	27	13	

TABLE 21.—DEATHS BY OCCUPATIONS AND

	Potteries	Rubber industries	Textile industries	Other industries	Shoemakers and cobblers (not in factory)	Stonecutters	Tailors and tailresses	Tinmiths and eppermiths	Upholsterers	Other manufacturing and mechanical industries
Tuberculosis of the respiratory system										
10 to 19				1						1
20 to 29										
30 to 39	1			5						
40 to 49				3						
50 to 59				3						
60 to 69	2			1						
70 to 79	1									
80 and over										
Totals	5	1	17	13	1	1	9	1		1
Cancer and other important tumors										
10 to 19				1						
20 to 29	1			3						1
30 to 39				1						
40 to 49	1			4						
50 to 59	3			14			3			2
60 to 69	3			16			9			3
70 to 79	1			7			5			1
80 and over				4			1			1
Totals	10	7	50	35	16	1	25	6	2	10
Diseases of the nervous system and of the special sense										
10 to 19										
20 to 29				1						1
30 to 39				2			1			
40 to 49				1						
50 to 59	1			2			4			
60 to 69	1			15			7			4
70 to 79	1			12			2			1
80 and over				6			1			7
Totals	2	3	39	21	10	1	17	3	4	11
Diseases of the respiratory system										
10 to 19				1						
20 to 29				1			1			
30 to 39				4						
40 to 49				11			7			4
50 to 59				13			19			7
60 to 69				17			29			12
70 to 79				25			7			10
80 and over				15			4			3
Totals	10	17	116	96	34	3	62	16	8	36

AGE GROUPS, NEW JERSEY, 1932—Continued

TRANSPORTATION	Water—	Road and Street—	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
Boatmen, canalmen, sailors and deck hands																
Longshoremen and stevedores																
Other pursuits																
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 managers, hostlers and stable hands																
Other pursuits																
Baggage men and freight agents																
Brakemen																
Conductors																
Foremen, overseers and inspectors																
Laborers																
Locomotive engineers																
Locomotive firemen																
Totals	48	21	11	14	80	3	10	11	7	35	3	12	28	17	20	20

TABLE 21.—DEATHS BY OCCUPATIONS AND

	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	Linenmen	Mail carriers	Telegraph operators	Telephone operators	Other pursuits
<b>Tuberculosis of the respiratory system</b>											
10 to 19									1	1	
20 to 29											
30 to 39			2					1			1
40 to 49			1						1		
50 to 59									1		1
60 to 69					2						
70 to 79											
80 and over											
<b>Totals</b>			3		2			2	2	1	2
<b>Cancer and other malignant tumors</b>											
10 to 19											
20 to 29											
30 to 39											
40 to 49											
50 to 59			2		1			1		2	2
60 to 69	1	1	2	1	2		1	2	1	2	2
70 to 79					2			1			2
80 and over											
<b>Totals</b>	2	3	5	1	17		1	4	5	2	11
<b>Diseases of the nervous system</b>											
10 to 19											1
20 to 29											
30 to 39											
40 to 49							1		1		
50 to 59											
60 to 69	1	1	3	1	6			1	1		1
70 to 79								1	1		
80 and over											
<b>Totals</b>	2	1	3	2	13		1	1	2	4	8
<b>Diseases of the circulatory system</b>											
10 to 19											1
20 to 29											
30 to 39											7
40 to 49											8
50 to 59	1	1	5	1	20			7	3	2	5
60 to 69	4	4	1	12	20	3	1	7	3	2	5
70 to 79	1	1	1	1	1	1	1	1	1	1	1
80 and over											
<b>Totals</b>	8	8	17	7	44	3	4	12	10	4	27

AGE GROUPS, NEW JERSEY, 1938—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 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
<b>Tuberculosis of the respiratory system</b>																	
10 to 19																	
20 to 29																	
30 to 39																	
40 to 49																	
50 to 59																	
60 to 69																	
70 to 79	1																
80 and over																	
<b>Totals</b>	4	3	5	3	6	35	2	26	7		1	13		3	2		29
<b>Cancer and other malignant tumors</b>																	
10 to 19																	
20 to 29																	
30 to 39																	
40 to 49																	
50 to 59	4																
60 to 69	1	4	3		4	14	26	1	30	4	3	10	2	4	3		8
70 to 79	3	1	3		11	12	2	3	56	1	1	6	7	7	5		29
80 and over																	
<b>Totals</b>	16	7	12	1	59	79	3	157	17		14	24	2	15	13	1	69
<b>Diseases of the nervous system</b>																	
10 to 19																	
20 to 29																	
30 to 39																	
40 to 49																	
50 to 59																	
60 to 69	4	3	1		4	2	2	22	34	2	1	9	1	1	6		10
70 to 79	3	1	1		1	12	3	3	34	2	1	2	1	2	4	1	13
80 and over																	
<b>Totals</b>	16	7	1	3	28	34	3	111	7		5	23	4	8	15	2	52
<b>Diseases of the circulatory system</b>																	
10 to 19																	
20 to 29																	
30 to 39																	
40 to 49																	
50 to 59	3	4			2	3	8	3	1								
60 to 69	12	4	1		2	23	58	2	85	17	12	17	2	13	3		29
70 to 79	13	6	1		4	56	52	2	162	19	8	23	2	22	19	1	43
80 and over	5	1			1	33	52	2	124	4	1	5	3	17	13	2	38
<b>Totals</b>	47	21	5	15	141	238	7	493	56		26	82	8	59	67	10	207



TABLE 21.—DEATHS BY OCCUPATIONS AND

	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
Tuberculosis of the respiratory system	10 to 19										1
	20 to 29										
	30 to 39	1									
	40 to 49										
	50 to 59		1								
	60 to 69										
	70 to 79	1									
	80 and over	1									
Totals	2	1	1	1		1	5	1	5	2	15
Cancer and other malignant tumors	10 to 19										
	20 to 29										
	30 to 39			1							
	40 to 49				1		1	2			
	50 to 59		1			1	1	1	1	1	11
	60 to 69		1	2	2	2	4	4	3	1	11
	70 to 79	1	1	1	6	3	4	4	3	2	13
	80 and over	1	1	1	2	3	4	4	3	2	15
Totals	2	3	1	5	12	1	10	12	8	4	45
Disease of the heart and of the special sense organs	10 to 19										1
	20 to 29		1								
	30 to 39										
	40 to 49		2	1							4
	50 to 59						2				3
	60 to 69	2				1	1				3
	70 to 79		2	2	2	1	1	1	1		11
	80 and over		1		2	1	1	2	2		10
Totals	2	5	3	13	2	4	5	6	4	9	27
Disease of the circulatory system	10 to 19										2
	20 to 29	1	1								2
	30 to 39			1							3
	40 to 49	1	3	3	4						11
	50 to 59	1	3	7	10				2	10	42
	60 to 69	3	5	7	3	6	13	7	12	14	44
	70 to 79	4	2	6	3	14	8	6	3	10	36
	80 and over	1	2		1	9	1	8	5	9	38
Totals	11	18	20	18	47	12	17	47	30	5	142

AGE GROUPS, NEW JERSEY, 1938—Continued

	DOMESTIC AND PERSONAL SERVICE										CLEICAL OCCUPATIONS						Totals
	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	Saloonkeepers	Servants	Waiters	Other pursuits	Agents, canvassers and collectors	Bookkeepers, cashiers and accountants	Clerks (except clerks in stores)	Other clerical pursuits	
Tuberculosis of the respiratory system	14								4	4					1		23
	86								19	16					26		304
	90								71	16					23	4	323
	61								13	3					9		312
	45								12	1					4		294
	12								1						4		182
Totals	381	6	2	6	13	15	3	2	65	11	26	3	20	70	13	1519	
Cancer and other malignant tumors	19																7
	123								1								50
	337								1								222
	523								15	2					1		690
	7								3	2							1172
	590								15	2							1441
	411								9	1							922
	187								2								272
Totals	2140	25	10	13	14	12	62	8	46			9	39	104	21	4746	
Disease of the heart and of the special sense organs	12																3
	33																46
	110								6								116
	228								10	1							259
	368								8	2							547
	9								2	4							853
	363								9	1							816
	196								6								353
Totals	1313	16	9	6	9	3	38	2	28			4	28	54	9	2973	
Disease of the circulatory system	1																11
	35								1								164
	129								11								372
	333								3	4							1167
	5								1	1							2307
	665								10	5							3105
	1124								37	7							2916
	1231								23	1							1429
Totals	4292	60	26	25	31	19	158	23	112			18	111	238	48	11311	

TABLE 21.—DEATHS BY OCCUPATIONS AND

	AGRICULTURE, FORESTRY AND ANIMAL HUSBANDRY					EXTRACTION OF MINERALS	Foremen, overseers and inspectors	Miners	Quarry operatives
	Farmers	Farm laborers	Fishermen and oystermen	Gardeners, florists, fruit growers and nurserymen	Other agricultural and animal husbandry pursuits				
<b>Pneumonia</b>	10 to 19	1	1						
	20 to 29	1							
	30 to 39	4	2		1				
	40 to 49	1	7		1				
	50 to 59	4	1				1		
	60 to 69	9	2					1	
	70 to 79	6	1				1		
	80 and over	6	2						
<b>Totals</b>		36	17	4	7	1	2		
<b>Diseases of the respiratory system (excepted)</b>	10 to 19								
	20 to 29								
	30 to 39								
	40 to 49	2						1	
	50 to 59	1						1	
	60 to 69	3					1		
	70 to 79	1						1	
	80 and over	3							
<b>Totals</b>		6		4			2	2	
<b>Diseases of the digestive system</b>	10 to 19		2						
	20 to 29		2						
	30 to 39	3							
	40 to 49	4					1		
	50 to 59	5							
	60 to 69	2							
	70 to 79	11	2					1	
	80 and over	4	1						
<b>Totals</b>		34	9	4	12	1	1		
<b>Non-venereal diseases of the genitourinary system and anoxia</b>	10 to 19								
	20 to 29								
	30 to 39	1							
	40 to 49	1							
	50 to 59	8							
	60 to 69	22					1		1
	70 to 79	22	4				3		1
	80 and over	22						1	1
<b>Totals</b>		84	10	6	26	2	2	1	

AGE GROUPS, NEW JERSEY, 1938—Continued

	MANUFACTURING AND MECHANICAL INDUSTRIES										Laborers—	General and not specified	Building and hand trades	Chemical industries	Clay and stone industries (excepting potteries)			
	Bakers	Blacksmiths, forgers and hammermen	Boilermakers	Brick and stone masons	Builders and building contractors	Carpenters, coopers and cabinet makers	Compositors, lithotypers and typesetters	Dressmakers and seamstresses (not in factory)	Dyers	Electricians and electrical engineers						Engineers (stationary)	Engravers	Filers, grinders, buffers and polishers (metal)
10 to 19		1																2
20 to 29		1																13
30 to 39		1															18	
40 to 49		1															31	
50 to 59		1															34	
60 to 69		1															29	
70 to 79		1															17	
80 and over		1															3	
<b>Totals</b>		4	4	2	7	7	43	7	7	8	8		4		5		139	
10 to 19																	1	
20 to 29																	2	
30 to 39																	4	
40 to 49																	6	
50 to 59																	10	
60 to 69																	8	
70 to 79																	1	
80 and over																	1	
<b>Totals</b>		2	1	3		5	1			3	1	1	1	1	1		26	
10 to 19																		
20 to 29																		
30 to 39																		
40 to 49																		
50 to 59																		
60 to 69																		
70 to 79																		
80 and over																		
<b>Totals</b>		4	8	3	11	10	36	4	2	8	25	1	1	0		6	109	
10 to 19																		
20 to 29																		
30 to 39																		
40 to 49																		
50 to 59																		
60 to 69																		
70 to 79																		
80 and over																		
<b>Totals</b>		6	8	1	20	11	70	2	8	7	6	18	3	2	5	5	136	





TABLE 21.—DEATHS BY OCCUPATIONS AND

	Motormen	Officials and superintendents	Switchmen, firemen and yardmen	Ticket and station agents	Other pursuits	Express, Post, Telegraph and Telephone— Express messengers and railway mail clerks	Linenmen	Mail carriers	Telegraph operators	Telephone operators	Other pursuits
<b>Pneumonia</b>											
10 to 19											
20 to 29											
30 to 39											
40 to 49											
50 to 59											
60 to 69	1										1
70 to 79	1		1						1		
80 and over											
<b>Totals</b>	2	1	1		1	2	2		1		1
<b>Diseases of the respiratory system (pneumonia and bronchitis excepted)</b>											
10 to 19											
20 to 29											
30 to 39											
40 to 49											
50 to 59											
60 to 69	1		1								1
70 to 79											
80 and over											
<b>Totals</b>		1	1								1
<b>Diseases of the digestive system</b>											
10 to 19											
20 to 29											
30 to 39											
40 to 49											
50 to 59											
60 to 69	1										1
70 to 79	1										1
80 and over											
<b>Totals</b>	2										2
<b>Non-venereal diseases of the genitourinary system and annexa</b>											
10 to 19											
20 to 29											
30 to 39											
40 to 49											
50 to 59											
60 to 69	2										2
70 to 79	1										1
80 and over											
<b>Totals</b>	3										3

AGE GROUPS, NEW JERSEY, 1938—Continued

TRADE	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
Bankers, brokers and moneylenders									
Clerks in stores	1								1
Deliverymen									
Laborers									
Real estate and insurance agents and officials									
Salesmen and saleswomen									
Undertakers									
Wholesale and retail dealers									
Other pursuits									
<b>PUBLIC SERVICE (NOT ELSEWHERE CLASSIFIED)</b>									
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									
<b>Totals</b>	11	7	3	4	26	39	2	102	8

TABLE 21.—DEATHS BY OCCUPATIONS AND

		PROFESSIONAL SERVICE																
		Architects Authors, editors and reporters Chemists, assessors, 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 Other professional and semi-professional pursuits																
Pneumonia	10 to 19																	
	20 to 29				1								1					
	30 to 39													1				
	40 to 49																	
	50 to 59		1								1							
	60 to 69		1															
	70 to 79			1														
	80 and over				1													
	Totals		1	3	1	2	4	2	1	3	1	2	2	2	2	8	18	
Diseases of the respiratory system (excepted)	10 to 19																	
	20 to 29																	
	30 to 39																	
	40 to 49																	
	50 to 59																	
	60 to 69									1								
	70 to 79										1							
	80 and over											1						
	Totals										2	1				1	1	3
Diseases of the digestive system	10 to 19																	
	20 to 29																	
	30 to 39																	
	40 to 49			1														
	50 to 59			1														
	60 to 69		1	3	2													
	70 to 79		1	2														
	80 and over		1	1														
	Totals		4	6	2	6	2		1	5	4	1	3	14	42			
Non-venereal diseases of the genitourinary system and annexa	10 to 19																	
	20 to 29																	
	30 to 39																	
	40 to 49																	
	50 to 59		1															
	60 to 69		1															
	70 to 79		1															
	80 and over		1															
	Totals		1	3	4	3	15		2	8	7	4	10	12	31			

AGE GROUPS, NEW JERSEY, 1938—Continued

		DOMESTIC AND PERSONAL SERVICE																	
		Barbers, hairdressers and manicurists Bar tenders Hotel keepers and managers Housekeepers and stewards Janitors and sextons Laundresses and laundresses Porters (except in stores) Restaurant, cafe and lunch room keepers Saloonkeepers Servants Waiters Other pursuits CLERICAL OCCUPATIONS Agents, canvassers and collectors Bookkeepers, cashiers and accountants Checks (except clerks in stores) Other clerical pursuits Totals																	
Pneumonia	10 to 19					1												1	10
	20 to 29																		74
	30 to 39		1			47		1										186	
	40 to 49			3		63		1	1									235	
	50 to 59					72		2	1									253	
	60 to 69					118					2							343	
	70 to 79					118						1						251	
	80 and over					87												125	
	Totals		6	5	2	519	10	2	6	1	3	31	6	17	3	9	32	9	1432
Diseases of the respiratory system (excepted)	10 to 19																		2
	20 to 29																		19
	30 to 39					6		1	1									26	
	40 to 49					8												45	
	50 to 59					17		1										57	
	60 to 69					16		1		1								71	
	70 to 79					16												38	
	80 and over					15												32	
	Totals		4			88	2	2		1		5		2	1	3	8	1	290
Diseases of the digestive system	10 to 19																		15
	20 to 29																		98
	30 to 39					5							1					182	
	40 to 49					22		1										369	
	50 to 59					60												456	
	60 to 69					122												414	
	70 to 79					122		3										242	
	80 and over					135												54	
	Totals					222	2		3	11	9	30	6	17	10	18	55	10	1860
Non-venereal diseases of the genitourinary system and annexa	10 to 19																		6
	20 to 29																		68
	30 to 39																		129
	40 to 49																		301
	50 to 59																		430
	60 to 69																		733
	70 to 79																		713
	80 and over																		351
	Totals		12	1	8	1177	20	3	8	6	5	46	7	23	4	21	67	16	2740



TABLE 21.—DEATHS BY OCCUPATIONS AND

	Chem 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.)
<b>Violent deaths (suicide excluded)</b>												
10 to 19									1			
20 to 29									1			
30 to 39	1								4			3
40 to 49	1								4			3
50 to 59	1								3			3
60 to 69	1								1			1
70 to 79	1								1			1
80 and over	1								1			1
<b>Totals</b>	4					1	2		12	4	7	4
<b>All other diseases and causes of death</b>												
10 to 19									1			
20 to 29									1			
30 to 39	1								1			2
40 to 49	1								5			3
50 to 59	1								3			1
60 to 69	1								5			5
70 to 79	1								6			2
80 and over	1								4			2
<b>Totals</b>	3					2	3	3	20	21	14	12
<b>Summary</b>												
10 to 19	1								12	9		23
20 to 29	1								25	14		37
30 to 39	1								72	46		117
40 to 49	1								112	71		183
50 to 59	1								130	86		216
60 to 69	1								130	86		216
70 to 79	1								96	41		137
80 and over	1								16	17		33
<b>Totals</b>	8	91	3	3	9	11	20	71	467	286	227	193

AGE GROUPS, NEW JERSEY, 1938—Continued

	Millers (grain, flour, feed, etc.)	Milliners and millinery dealers	Molders, foundry and casters	Painters, glaziers, varnishers, enamelers, etc.	Paperhangers	Plasterers	Pumps 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	
<b>Violent deaths (suicide excluded)</b>																					
10 to 19																					
20 to 29																					
30 to 39																					
40 to 49																					
50 to 59																					
60 to 69																					
70 to 79																					
80 and over																					
<b>Totals</b>	3	10	8	10	1	1	7	2			6	1	2		2	1	1	7	3	1	
<b>All other diseases and causes of death</b>																					
10 to 19																					
20 to 29																					
30 to 39																					
40 to 49																					
50 to 59																					
60 to 69																					
70 to 79																					
80 and over																					
<b>Totals</b>	1	3	27	1	2	15	5	3			14	9	1	5	14	5		30	4	5	
<b>Summary</b>																					
10 to 19																					
20 to 29																					
30 to 39																					
40 to 49																					
50 to 59																					
60 to 69																					
70 to 79																					
80 and over																					
<b>Totals</b>	6	10	82	438	24	16	227	101	21		199	77	39	28	128	76	25	294	94	43	





TABLE 21.—DEATHS BY OCCUPATIONS AND

	Motor men	Officials and superintendents	Switchmen, firemen and yardmen	Ticket and station agents	Other pursuits	Express, Post, Telegraph and Telephone— Express messengers and railway mail clerks	Linenmen	Mail carriers	Telegraph operators	Telephone operators	Other pursuits
<b>Suicide</b>											
10 to 19											
20 to 29	1										
30 to 39											
40 to 49											
50 to 59											
60 to 69											
70 to 79					1					1	
80 and over					1					1	
Totals	2				3					1	2
<b>Violent deaths (suicide excepted)</b>											
10 to 19											
20 to 29											
30 to 39											
40 to 49		1	1								
50 to 59			1								
60 to 69											
70 to 79				1							
80 and over					1						
Totals		1	2	1	7			5	2	3	2
<b>All other disease and causes of death</b>											
10 to 19											
20 to 29											
30 to 39											
40 to 49											
50 to 59			2								
60 to 69			1								
70 to 79								1			
80 and over										1	
Totals	2		3	1	3			1		4	3
<b>Summary</b>											
10 to 19											
20 to 29	1							1	1		1
30 to 39											
40 to 49											
50 to 59											
60 to 69											
70 to 79								1			
80 and over											
Totals	21	22	42	13	103			7	15	27	27

AGE GROUPS, NEW JERSEY, 1938—Continued

	TRADE										PUBLIC SERVICE (NOT ELSEWHERE CLASSIFIED)									
	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 pursuits	Firemen (fire department)	Laborers (public service)	Marshals, sheriffs, detectives, etc.	Officials and inspectors (city, county, state, U.S.)	Police men	Soldiers, sailors and marines	Other pursuits				
<b>Suicide</b>																				
10 to 19																				
20 to 29	1																			
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
Totals	2	2	2	1	12	18	1	34	6		8	1		4	4	13				
<b>Violent deaths (suicide excepted)</b>																				
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																				
<b>All other disease and causes of death</b>																				
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	6	9	1	10	31	4	60	13		11	44	2	10	9	46				
<b>Summary</b>																				
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	7	2	6	19	35	3	93	10		2	19	2	5	14	35				
<b>Totals</b>	180	69	42	43	380	580	28	1193	135		72	264	25	121	159	266				

TABLE 21.—DEATHS BY OCCUPATIONS AND

	PROFESSIONAL SERVICE												
	Architects	Authors, editors and reporters	Chemists, assessors, 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	Other professional and semi-professional pursuits
<b>Suicide</b>													
10 to 19													
20 to 29													
30 to 39													
40 to 49													
50 to 59													
60 to 69													
70 to 79													
80 and over													
<b>Totals</b>	1	1	4	1	1	2	3	2	1	4	3	10	
<b>Violent deaths (suicide excepted)</b>													
10 to 19													
20 to 29													
30 to 39													
40 to 49													
50 to 59													
60 to 69													
70 to 79													
80 and over													
<b>Totals</b>	1	1	2	4	2	3	5	7	1	2	8	24	
<b>All other causes of death</b>													
10 to 19													
20 to 29													
30 to 39													
40 to 49													
50 to 59													
60 to 69													
70 to 79													
80 and over													
<b>Totals</b>	1	2	2	3	5	1	1	7	3	3	19	30	
<b>Summary</b>													
10 to 19													
20 to 29													
30 to 39													
40 to 49													
50 to 59													
60 to 69													
70 to 79													
80 and over													
<b>Totals</b>	19	33	45	59	107	23	46	98	74	27	77	206	417

AGE GROUPS, NEW JERSEY, 1938—Continued

	DOMESTIC AND PERSONAL SERVICE										CLERICAL, OCCUPATIONS									
	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	Saloonkeepers	Servants	Waiters	Other pursuits	Agents, canvassers and collectors	Bookkeepers, cashiers and accountants	Clerks (except clerks in stores)	Other clerical pursuits	Totals			
<b>Suicide</b>																				
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
<b>Totals</b>	2	1	1	126	1	1	1	1	4	7	3	7	2	10	18	2	585			
<b>Violent deaths (suicide excepted)</b>																				
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
<b>Totals</b>	5	3	3	438	13	2	5	5	2	30	11	13	2	13	60	10	1845			
<b>All other causes of death</b>																				
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
<b>Totals</b>	17	6	4	1372	11	5	12	5	6	64	11	16	2	25	46	15	2702			
<b>Summary</b>																				
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
<b>Totals</b>	172	61	68	12506	173	75	93	87	61	536	88	307	58	299	732	156	82008			





TABULATION OF DEATHS IN BERGEN COUNTY FOR 1934, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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	10	12	7	6	188	34	70	117	172	341	680	862	825	411	55				
1	ALL CAUSES	3594	1844	1750	108	183	10	12	7	6	188	34	70	117	172	341	680	862	825	411	55				
2	Typhoid and paratyphoid fever	2	2																						
3	Typhus fever	2	2																						
4	Scarlet fever	5	5																						
5	Measles	5	5																						
6	Whooping cough	2	2																						
7	Diphtheria	1	1																						
8	Polio	1	1																						
9	Plague	1	1																						
10	Tuberculosis of the respiratory system	138	78	60	12	11	1	1	1	2	2	4	7	22	62	111	139	110	44	8					
11	Other forms of tuberculosis	7	4	3	3	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1		
12	Malaria	23	17	8	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
13	Other infectious and parasitic diseases	522	223	207	13	1	1	1	1	2	2	4	4	7	22	62	111	139	110	44	8				
14	Cancer and other malignant tumors	14	6	5	2																				
15	Other neoplasms, or of which the nature is not specified	23	6	10	1																				
16	Chronic rheumatism and gout	4	4																						
17	Diphtheria mellitus (or diphtheritic)	100	31	69	7																				
18	Chronic rheumatism and gout	35	28	30	1																				
19	Other general diseases and chronic poisonings	8	7	1	1																				
20	Progressive locomotor ataxia and general paralysis of the insane	8	7	1	1																				
21	Other general diseases and chronic poisonings	258	133	140	8																				
22	Cerebral hemorrhage, cerebral embolism and thrombosis	40	20	11	4																				
23	Other diseases of the nervous system and of the organs of special sense	21	27	2	2																				
24	Disease of the eye	107	67	39	23																				
25	Other diseases of the circulatory system	10	10	36	1																				
26	Bronchitis	175	91	84	4	17	4	10	2	2	2	2	5	6	13	21	24	63	220	201	362	170	20		
27	Pneumonia (not of the respiratory system) (Influenza excluded)	103	18	8	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
28	Diarrhea and enteritis	10	18	8	2	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
29	Disentery	41	23	18	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
30	Alimentative, toxic and infective diseases	80	42	38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
31	Other diseases of the digestive passages	28	113	40	8	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
32	Nephritis	40	20	11	4																				
33	Phenomena of the genitourinary system	4	4																						
34	Phenomena of pregnancy, childbirth and the puerperal state	7	7	1	1																				
35	Disease of the bones and cellular tissue, and congenital debility and malformations, prematurity birth and other diseases of early infancy	4	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
36	Congenital debility and malformations, prematurity birth and other diseases of early infancy	100	55	51	8	103	2	1	106																
37	Stroke	10	2	8																					
38	Stroke	61	40	21	2																				
39	Stroke	5	4	1	1																				
40	Stroke	174	120	54	6	2	1	1	4	7	6	14	9	18	14	30	28	31	18	4					
41	Violent and accidental deaths (suicide and homicide)																								
42	Violent and accidental deaths (suicide and homicide)																								
43	Cause of death not specified or ill-defined																								

Estimated population, 452,200. Total resident deaths, 8,834. Rate per 1,000 population, 8.3.



TABULATION OF DEATHS IN GARFIELD CITY FOR 1933, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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
						7	1	1	2	10	1	0	11	8	23	56	30	34	10	1		
1	ALL CAUSES	181	101	77		7	1	1	2	10	1	0	11	8	23	56	30	34	10	1		
2	Typhoid and paratyphoid fever																					
3	Typhus fever																					
4	Shigellosis																					
5	Shigellosis																					
6	Shigellosis	2	1	1		1																
7	Whooping cough																					
8	Diphtheria																					
9	Influenza	1	1																			
10	Tuberculosis of the respiratory system																					
11	Other forms of tuberculosis	1	1																			
12	Syphilis																					
13	Other infectious and parasitic diseases																					
14	Cancer and other malignant tumors	26	13	13																		
15	Tumors, nonmalignant, or of which the nature is not specified	2																				
16	Diabetes mellitus	8	5	3																		
17	Alcoholism (acute or chronic)	5	5																			
18	Other general diseases and chronic poisonings	5	5																			
19	Paralysis of the larynx, trachea, and general paralysis of the larynx	1	1																			
20	Cerebral hemorrhage, cerebral embolism and thrombosis	9	5	4																		

23	Other diseases of the nervous system and of the organs of special sense	4	2	2																		
24	Diseases of the heart	33	34	19																		
25	Diseases of the circulatory system	2	2																			
26	Bronchitis																					
27	Pneumonia	1	0	1																		
28	Other diseases of the respiratory system (tuberculosis and emphysema)	1	1																			
29	Diarrhea and enteritis	1	1																			
30	Appendicitis	4	4																			
31	Diseases of the liver and biliary passages	2	2																			
32	Diseases of the digestive system	4	4																			
33	Neuritis	2	2																			
34	Other diseases of the genitourinary system	0	1	1																		
35	Puerperal septicemia	1	1																			
36	Other diseases of pregnancy, childbirth and the puerperal state	1	1																			
37	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion	5	1	4																		
38	Causes of death in infancy	5	1	4																		
39	Senility	7	5	2																		
40	Stupeor	1	1																			
41	Violent and accidental deaths (suicide and homicide excepted)	7	6	1																		
42	Violent and accidental deaths (suicide and homicide excepted)	7	6	1																		
43	Causes of death not specified or ill-defined																					

Estimated population, 84,900. Total resident deaths, 181. Rate per 1,000 population, 5.2.



TABULATION OF DEATHS IN HACKENSACK CITY FOR 1888, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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			
						18	1	1	1	1	10	3	6	12	14	23	40	40	40	61	33	5	...		
1	ALL CAUSES	205	124	141	29	18	1	1	1	1	1	10	3	6	12	14	23	40	40	40	61	33	5	...	
1	Typhoid and paratyphoid fever	1																							
2	Typhoid fever	1																							
3	Smallpox																								
4	Measles	1																							
5	Scarlet fever																								
6	Whooping cough																								
7	Diphtheria																								
8	Influenza																								
9	Tracheobronchitis of the respiratory system																								
10	Other forms of tuberculosis	4	2	1	1																				
11	Other diseases and venereal diseases	1																							
12	Syphilis	4	2	1	1																				
13	Malaria																								
14	Other general diseases and chronic poisonings	1																							
15	Fractures, dislocations and general paralysis of the insane	2	1	2		1																			
16	Tumors, nonmalignant, or of which the nature is not specified	22	10	22	3																				
17	Cancer and other malignant tumors	1																							
18	Diabetes mellitus	1																							
19	Alcoholism (acute or chronic)	1																							
20	Other general diseases and chronic poisonings	3	1	2		1																			
21	Fractures, dislocations and general paralysis of the insane	2	2		1																				
22	Cerebral hemorrhage, cerebral embolism and thrombosis	26	18	12																					
23	Other diseases of the nervous system and of the organs of special sense	3	1																						
24	Diseases of the heart	71	36	35	5																				
25	Other diseases of the circulatory system	4	2	2																					
26	Phthisis	1																							
27	Pneumonia	11	11	6	5	2																			
28	Other diseases of the respiratory system (tuberculosis excepted)	2																							
29	Tuberculosis (excepted)	2																							
30	Appendicitis	1																							
31	Diseases of the liver and biliary passages	10	12	5	2																				
32	Other diseases of the digestive system	1																							
33	Other diseases of the genitourinary system	1																							
34	Puerperal septicemia	1																							
35	Other diseases of pregnancy, childbirth and puerperium	1																							
36	Diseases of the skin and cellular tissue and of the bones and organs of locomotion	12	5	1	5	12																			
37	Diseases of the skin and cellular tissue and of the bones and organs of locomotion	12	5	1	5	12																			
38	Congenital debility and malformations, prematurity, birth and other diseases of early infancy	5	1	3	1																				
39	Scalds	5	2	3	1																				
40	Stomach	1																							
41	Homicide	1																							
42	Accidental deaths (suicide and homicide excepted)	1																							
43	Cause of death not specified or ill-defined	13	10	3																					

Estimated population, 27,000. Total resident deaths, 205. Rate per 1,000 population, 9.6.

TABULATION OF DEATHS IN RUTHERFORD BOROUGH FOR 1933, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number		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
1	ALL CAUSES		103	87	78	4	6	1	1	1	1	1	1	2	18	26	32	41	24	.....
2	Typhoid and paratyphoid fever		1		1		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	Typhoid fever		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	Smallpox		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	Mumps		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	Syphilis		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	Scarlet fever		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	Whooping cough		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	Diphtheria		1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	Plague (both of the bubonic system and of the enteric system)		8	4	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	Other forms of bubonic plague		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	Malaria		1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	Malaria (specifying the malarial diseases is not specified)		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	Cancer and other malignant tumours		24	10	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	Cancer of the stomach		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	Diabetes mellitus		1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	Other general diseases and chronic poisonings		2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	Alcoholism (acute or chronic)		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	Paralysis of the brain, spinal cord and general paralysis of the insane		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	Fracture of bone, sprain, laceration and contusion		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	Fracture of the skull, skull fracture, and cerebral hemorrhage, cerebral embolism and thrombosis		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

23	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	Diseases of the circulatory system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	Other diseases of the circulatory system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	Bronchitis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	Pneumonia (excluding the septic pneumonia)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	Other diseases of the respiratory system (tuberculosis excepted)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Diarrhoea and enteritis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	Other diseases of the digestive system (excluding the liver and biliary passages)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	Other diseases of the digestive system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32	Other diseases of the genitourinary system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
33	Nephritis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
34	Other diseases of the genitourinary system (tuberculosis excepted)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
35	Other diseases of pregnancy, childbirth and the puerperal state	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
36	Diseases of the skin and cellular tissue, and diseases of the eye	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
37	Congenital debility and malformations	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
38	Congenital debility and malformations of early infancy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
39	Senility	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40	Violent and accidental deaths (suicide and homicide excepted)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
42	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
43	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
44	.....		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Total resident deaths, 103. Rate per 1,000 population, 0.3.  
Estimated population, 17,800.

TABULATION OF DEATHS IN BURLINGTON COUNTY FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, if other than white	AGE PERIODS											90 and over	Unknown							
						Under 5 years						10 to 19							20 to 29						
						Under 1 year	1 year	2 years	3 years	4 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				
1	ALL CAUSES	1174	658	596	94	79	0	2	2	5	97	8	10	32	53	79	140	220	280	188	40				
2	Typhoid and paratyphoid fever	1		1		1																			
3	Typhus fever																								
4	Smallpox																								
5	Scarlet fever	1	1			1																			
6	Measles	1	1			1																			
7	Whooping cough	2	1	1		1																			
8	Diphtheria	6	4	1		1																			
9	Polio	1																							
10	Infantile paralysis	1																							
11	Tuberculosis of the respiratory system	39	25	14		1																			
12	Other forms of tuberculosis	9	7	2		3																			
13	Syphilis	3	1	2		3																			
14	Other infectious and parasitic diseases	166	64	102	15	1																			
15	Cancer and other malignant tumors	166	64	102	15	1																			
16	Tumors, nonmalignant, or of which the nature is uncertain	6	1	5		1																			
17	Chronic rheumatism and gout	21	1	20		1																			
18	Diabetic mellitus	19	3	16		1																			
19	Alcoholism (acute or chronic)	10	11	1		1																			
20	Alcoholism (chronic) (nervous system)	10	11	1		1																			
21	Progressive locomotor ataxia and general paralysis of the insane	1				1																			
22	Cerebral hemorrhage, cerebral embolism and thrombosis	84	36	48		4																			
23	Other diseases of the nervous system and of the organs of special sense	14	7	7		1																			
24	Disease of the heart	205	111	88		23																			
25	Other diseases of the circulatory system	19	11	8		8																			
26	Brucellosis	40	28	21		0	14	4	1																
27	Pneumonitis	21	0	38		1																			
28	Other diseases of the respiratory system (infectious)	10	7	3		1																			
29	Diphtheria and enteritis	10	7	3		1																			
30	Anthrax	18	0	18		1																			
31	Amoebiasis	18	0	18		1																			
32	Disease of the liver and biliary passages	8	11	1		1																			
33	Other diseases of the digestive system	118	41	77		12																			
34	Other diseases of the genitourinary system	118	5	3		12																			
35	Chaperut septicaemia	6		6		1																			
36	Other diseases of pregnancy, childbirth and the puerperal state	6		6		1																			
37	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion	1	1	1		1																			
38	Other diseases of the skin and cellular tissue, and of the bones and organs of locomotion (infectious)	50	28	22		11	49	1																	
39	Senility	4	1	3		1																			
40	Senile dementia	10	13	3		1																			
41	Senile psychosis	1	1			1																			
42	Violent and accidental deaths (suicide and homicide excepted)	71	30	15		5	2	1	1																
43	Violent and accidental deaths (suicide and homicide excepted) (ill-defined)	1		1		1																			
44	Cause of death not specified or ill-defined																								

Estimated population, 98,700.

Total resident deaths, 1,174.

Rate per 1,000 population, 11.8.







TABULATION OF DEATHS IN GLOUCESTER CITY FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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
1	All causes	187	95	92		15	1	1	1	1	10	4	7	11	10	21	42	72	9	1	
1	Typhoid and paratyphoid fever																				
2	Typhus fever																				
3	Scarlet fever																				
4	Measles																				
5	Scarlet fever																				
6	Diphtheria																				
7	Whooping cough																				
8	Influenza																				
9	Plague																				
10	Tuberculosis of the respiratory system																				
11	Other forms of tuberculosis																				
12	Syphilis																				
13	Malaria																				
14	Other infectious and parasitic diseases	23	10	13																	
15	Unknown non-specified or of which the nature is not specified																				
17	Chronic rheumatism and gout																				
18	Alcoholism (acute or chronic)	6	1	6																	
19	Alcoholism (acute or chronic)	5	2	3																	
20	Other general diseases and chronic poisonings	5	2	3																	
21	Progressive locomotor ataxia and general paresis	1		1																	
22	Cerebral hemorrhage, cerebral embolism and thrombosis	12	5	7																	

23	Other diseases of the nervous system and of the organs of special sense	5	3	2																	
24	Other diseases of the circulatory system	23	21	2																	
25	Other diseases of the circulatory system	3	1	2																	
26	Bronchitis	3	1	2																	
27	Pneumonia	3	1	2																	
28	Other diseases of the respiratory system (infectious excepted)	2	1	1																	
29	Diarrhoea and enteritis	2	1	1																	
30	Appendicitis, the liver and biliary passages	2	1	1																	
31	Other diseases of the digestive system	2	1	1																	
32	Other diseases of the digestive system	2	1	1																	
33	Nephritis	1	1																		
34	Other diseases of the genitourinary system	1	1																		
35	Other diseases of pregnancy, childbirth and the puerperal state	1		1																	
37	Diseases of the skin and cellular tissue, and of the bones and cartilages	2	1	1																	
38	Other congenital malformations, prematurity, birth and other diseases of early infancy	4	4																		
39	Senility	1		1																	
40	Stiches	1		1																	
41	Violent and accidental deaths (suicide and homicide excepted)	4	1	3																	
42	Violent and accidental deaths (suicide and homicide excepted)	1	1																		
43	Causes of death not specified or ill-defined	1		1																	

Estimated population, 14,500. Total resident deaths, 187. Rate per 1,000 population, 12.8.

TABULATION OF DEATHS IN CAPE MAY COUNTY FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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	ALL CAUSES	462	261	201	87	2	8	22	22	24	12	12	1	7	13	17	20	04	124	110	08	11	
2	Typhoid and paratyphoid fever																						
3	Typhus fever																						
4	Scarlet fever																						
5	Measles																						
6	Whooping cough																						
7	Diphtheria																						
8	Influenza																						
9	Plague																						
10	Other diseases of the respiratory system																						
11	Other diseases of the circulatory system																						
12	Other diseases of the digestive system																						
13	Syphilis																						
14	Malaria																						
15	Other infectious and parasitic diseases																						
16	Other diseases of the nervous system																						
17	Tumors, neoplasms, or of which the nature is not specified																						
18	Chronic rheumatism and gout																						
19	Alcoholism (acute or chronic)																						
20	Other general diseases and chronic poisonings																						
21	Progressive locomotor ataxia and general paresis of the insane																						
22	Caustic burns, chemical, carbonic and thrombosis																						

23	Other diseases of the nervous system and of the organs of special sense																						
24	Diseases of the heart																						
25	Other diseases of the circulatory system																						
26	Pneumonia																						
27	Other diseases of the respiratory system (tu-berculosis excepted)																						
28	Other diseases of the respiratory system (tu-berculosis and enteritis)																						
29	Apoplexias																						
30	Diseases of the liver and biliary passages																						
31	Other diseases of the digestive system																						
32	Other diseases of the genitourinary system																						
33	Puerperal septicemia																						
34	Other diseases of pregnancy, childbirth and of the bones and organs of locomotion																						
35	Diseases of the skin and cellular tissue, and congenital debility and malformations, prun-escence and disease of early infancy																						
36	Scalds																						
37	Suffocation																						
38	Violence and accidental deaths (suicide and homicide excepted)																						
39	Causes of death not specified or ill-defined																						
40																							
41																							
42																							
43																							

Estimated population, 83,000.

Total resident deaths, 462.

Rate per 1,000 population, 18.6.







TABULATION OF DEATHS IN MILLVILLE CITY FOR 1936, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, if other than white	AGE PERIODS										90 and over	Unknown			
						Under 5 Years					10 to 19	20 to 29	30 to 39	40 to 49	50 to 59			60 to 69	70 to 79	80 to 89
						Under 1 year	1 year	2 years	3 years	4 years										
	ALL CAUSES .....	206	107	99	1	12	1	1	1	4	12	5	22	23	30	58	24	4		
1	Typhoid and paratyphoid fever .....																			
2	Scarlet fever .....																			
3	Dysentery .....																			
4	Measles .....																			
5	Scarlet fever .....																			
6	Diphtheria .....																			
7	Croup .....																			
8	Influenza .....	1	1																	
9	Plague .....																			
10	Tuberculosis of the respiratory system .....	23	12	11																
11	Consumption .....	2	1	1																
12	Syphilis .....	1	1																	
13	Malaria .....																			
14	Other infectious and parasitic diseases .....	20	7	13																
15	Other infectious and parasitic diseases .....																			
16	Tumors, non-malignant, or of which the nature is not specified .....																			
17	Chronic rheumatism and gout .....	1																		
18	Alcoholism (acute or chronic) .....	3	2	1																
19	Alcoholism (acute or chronic) .....	1																		
20	Other general diseases and chronic poisonings .....	5	3	2																
21	Progressive disease of the brain, and general .....	6	3	3																
22	Cerebral hemorrhage, cerebral embolism and thrombosis .....	33	13	20																

23	Other diseases of the nervous system and of the organs of special sense .....	20	31	28														
24	Diseases of special sense .....	1	1	1														
25	Other diseases of the circulatory system .....	1	1	1														
26	Bronchitis .....	1	1	1														
27	Pneumonia of the respiratory system (in tuberculosis excepted) .....	1	1	1														
28	Diarrhoea and enteritis .....	1	1	1														
29	Appendicitis .....	3	3	1														
30	Other diseases of the liver and biliary passages .....	2	2	1														
31	Other diseases of the digestive system .....	2	2	1														
32	Other diseases of the digestive system .....	21	10	11														
33	Nephritis .....	1	1	1														
34	Other diseases of the genitourinary system .....																	
35	Other diseases of pregnancy, childbirth and the puerperal state .....	1	1	1														
36	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion .....	1	1	1														
37	Violent and accidental deaths (suicide and homicide excepted) .....	8	5	3														
38	Violent and accidental deaths (suicide and homicide excepted) .....	1	1	1														
39	Violent and accidental deaths (suicide and homicide excepted) .....	1	1	1														
40	Violent and accidental deaths (suicide and homicide excepted) .....	1	1	1														
41	Violent and accidental deaths (suicide and homicide excepted) .....	1	1	1														
42	Violent and accidental deaths (suicide and homicide excepted) .....	12	11	1														
43	Violent and accidental deaths (suicide and homicide excepted) .....																	

Estimated population, 14,700.

Total resident deaths, 206.

Rate per 1,000 population, 14.0.



TABULATION OF DEATHS IN BELLEVILLE TOWN FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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
						0	11	2	1	1	14	3	12	17	10	21	44	50	40	29	4	
1	ALL CAUSES	250	134	125	0	11	2	1	1	1	14	3	12	17	10	21	44	50	40	29	4	
2	Typhoid and paratyphoid fever																					
3	Typhus fever																					
4	Smallpox																					
5	Measles																					
6	Scarlet fever																					
7	Whooping cough																					
8	Diphtheria																					
9	Influenza																					
10	Tuberculosis of the respiratory system	6	3	4	2																	
11	Other forms of tuberculosis																					
12	Syphilis																					
13	Other infectious and parasitic diseases																					
14	Cancer and other malignant tumors	27	11	16	2																	
15	Tumors, nonmalignant, or of which the nature																					
16	Chronic stomatitis and gonorrhea	3	2	1																		
17	Diabetes mellitus																					
18	Diabetes (acute or chronic)																					
19	Alcoholism (acute or chronic)	1																				
20	Other general diseases and conditions	2																				
21	Paralysis of the lunatic (acute and general)																					
22	Cerebral hemorrhage, cerebral embolism and thrombosis	13	3	10	1																	

23	Other diseases of the nervous system and of the eye																						
24	Diseases of the heart	5	3	2																			
25	Other diseases of the circulatory system	84	53	31	2																		
26	Mononucleosis	6	4	2																			
27	Pharyngitis																						
28	Other diseases of the respiratory system (tuberculosis excepted)	16	8	8	1																		
29	Diarrhoea and enteritis																						
30	Dysentery																						
31	Diseases of the liver and biliary passages	4	2	2																			
32	Other diseases of the digestive system	11	6	5																			
33	Nephritis	23	11	12																			
34	Other diseases of the genitourinary system	4	3	1																			
35	Other diseases of pregnancy, childbirth and the puerperal state and other diseases of the female genital system																						
36	Other diseases of pregnancy, childbirth and the puerperal state and other diseases of the female genital system	2																					
37	Diseases of the bones and organs of locomotion																						
38	Congenital debility and malformations, premature birth and other diseases of early infancy	8	4	4																			
39	Society																						
40	Society	5	5																				
41	Homicide																						
42	Violent and accidental deaths (homicide and nonhomicide excepted)	12	7	5																			
43	Cause of death not specified or ill-defined																						

Estimated population, 31,900.

Total resident deaths, 230.

Rate per 1,000 population, 8.1.

TABULATION OF DEATHS IN BLOOMFIELD TOWN FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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	ALL CAUSES .....	862	378	184	4	10	2	5	2	28	1	2	0	16	82	51	82	85	40	8		
2	Typhoid and paratyphoid fever .....																					
3	Dysentery .....																					
4	Measles .....																					
5	Scarlet fever .....																					
6	Whooping cough .....																					
7	Diphtheria .....																					
8	Influenza .....																					
9	Pneumonia .....																					
10	Tuberculosis of the respiratory system .....																					
11	Other forms of tuberculosis .....																					
12	Strophils .....																					
13	Malaria .....																					
14	Other infectious and parasitic diseases .....																					
15	Tumors, nonmalignant, or of which the nature is not specified .....																					
16	Diabetic rheumatism and gout .....																					
17	Rheumatism .....																					
18	Alcoholism (acute or chronic) .....																					
19	Other general diseases and chronic poisonings .....																					
20	Progressive locomotor ataxia and general paresis .....																					
21	Other diseases of the genitourinary system .....																					
22	Cerebral hemorrhage, cerebral embolism and thrombosis .....																					
23	Other diseases of the nervous system and of the brain .....																					
24	Diseases of the special sense .....																					
25	Other diseases of the heart .....																					
26	Bronchitis .....																					
27	Other diseases of the circulatory system (thrombosis excluded) .....																					
28	Other diseases of the respiratory system (thrombosis excluded) .....																					
29	Diarrhoea and enteritis .....																					
30	Dysentery .....																					
31	Diseases of the liver and biliary passages .....																					
32	Other diseases of the digestive system .....																					
33	Neuritis .....																					
34	Other diseases of the genitourinary system .....																					
35	Other diseases of pregnancy, childbirth and the puerperal state .....																					
36	Diseases of the bones, skin and cellular tissue, and of the eye .....																					
37	Other diseases of the eye .....																					
38	Congenital debility and malformations, prematurity, low birth weight and other diseases of early infancy .....																					
39	Senility .....																					
40	Stupeor .....																					
41	Homicide .....																					
42	Violent and accidental deaths (suicide and homicide excepted) .....																					
43	Cause of death not specified or ill-defined .....																					
		20	11	15											2	5	0	10	1	2		

Estimated population, 45,100. Total resident deaths, 892. Rate per 1,000 population, 8.0.

TABULATION OF DEATHS IN EAST ORANGE CITY FOR 1988, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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
						21	2				23	5	9	23	30	08	135	175	180	104	10	
1	ALL CAUSES	788	387	426	73	21	2															
2	Typhoid and paratyphoid fever																					
3	Typhus fever																					
4	Smallpox																					
5	Scarlet fever																					
6	Whooping cough																					
7	Diphtheria																					
8	Polio																					
9	Measles																					
10	Tuberculosis of the respiratory system	26	17	9	0																	
11	Other forms of tuberculosis	3	3		2																	
12	Syphilis	6	4	2	3																	
13	Chronic infectious and parasitic diseases	2	1	1	1																	
14	Cancer and other malignant tumors	158	79	80	6																	
15	Tumors, neoplasm, or of which the nature is not specified	1		1																		
16	Diabetes mellitus	15	3	12	3																	
17	Diabetes insipidus	1		1																		
18	Alcoholism (acute or chronic)	17	6	11	4	1																
19	Other general diseases and chronic poisonings	2	2		1																	
20	Paralysis of the limbs	2	2		1																	
21	Paralysis of the face, arms and legs																					
22	Cerebral hemorrhage, cerebral embolism and thrombosis	89	27	55	9																	
23	Other diseases of the nervous system and of the organs of special sense	8	6	2	2																	
24	Diseases of the heart	255	127	128	13																	
25	Other diseases of the circulatory system	1	3		8																	
26	Bruce's disease	3	3																			
27	Pneumonia	28	9	19	5	1																
28	Other diseases of the respiratory system (tuberculosis excepted)	3	2	1																		
29	Diphtheria, scarlet fever and erysipelas	10	5	5	3																	
30	Appendicitis	21	10	11	4																	
31	Diseases of the liver and biliary passages	52	24	28	1																	
32	Other diseases of the digestive system	11	7	4	2																	
33	Other diseases of the genitourinary system	1	1																			
34	Puerperal septicemia	1		1																		
35	Other diseases of pregnancy, childbirth and the puerperal state	1		1																		
36	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion	4	3	1	2	1																
37	Other diseases of the circulatory system	11	5	6	0	11																
38	Concussion, laceration, fracture, and other diseases of early infancy	4	4																			
39	Senility	12	12																			
40	Stroke	19	12	7	1																	
41	Alcoholism	3	2	1																		
42	Violent and accidental deaths (suicide and homicide excepted)	31	19	12	5																	
43	Cause of death not specified or ill-defined																					

Estimated population, 75,000. Total resident deaths, 788. Rate per 1,000 population, 10.5.

TABULATION OF DEATHS IN IRVINGTON TOWN FOR 1888, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, if other than white	AGE PERIODS																				
						Under 1 year					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
						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					
532	ALL CAUSES .....	532	277	253	1	16	2	1	2	1	24	3	11	14	33	66	92	108	130	44	8					
1	Typhoid and paratyphoid fever .....																									
2	Typhus fever .....																									
3	Smallpox .....																									
4	Scarlet fever .....																									
5	Dysentery .....																									
6	Whooping cough .....																									
7	Diphtheria .....																									
8	Influenza .....																									
9	Measles .....																									
10	Other forms of the respiratory system .....																									
11	Other forms of tuberculosis .....																									
12	Syphilis .....																									
13	Other febrile and parasitic diseases .....																									
14	Other .....																									
15	Cancer and other malignant tumors .....																									
16	Tumors, nonmalignant, or of which the nature .....																									
17	Chronic specific fevers and fevers .....																									
18	Diphtheria .....																									
19	Alcoholism (acute or chronic) .....																									
20	Alcoholism (general diseases and chronic intoxications) .....																									
21	Progressive diseases and chronic intoxications .....																									
22	Paralysis of the insane .....																									
23	Cerebral hemorrhage, cerebral embolism and thrombosis .....																									

23	Other diseases of the nervous system and of the organs of special sense .....	6	3	3																			
24	Diseases of the heart .....	100	86	80																			
25	Other diseases of the circulatory system .....	4	4	4																			
26	Chorea .....	2	2	2																			
27	Pneumonia .....	23	10	13																			
28	Other diseases of the respiratory system (tuberculosis excepted) .....	3	3	3																			
29	Diphtheria and enteritis .....	4	2	2																			
30	Amoebiasis .....	15	15	10																			
31	Diseases of the liver and biliary passages .....	15	5	10																			
32	Other diseases of the digestive system .....	7	5	10																			
33	Nephritis .....	25	18	12																			
34	Other diseases of the genitourinary system .....	7	6	12																			
35	Other diseases of pregnancy, childbirth and the puerperal state .....	4		4																			
36	Other diseases of the bones, joints, and cellular tissue, and of the sense organs .....	1	1	1																			
37	Other diseases of the bones, joints, and cellular tissue, and of the sense organs .....	1	1	1																			
38	Congenital debility and malformations, prematurity .....	13	6	7																			
39	Other diseases and other causes of early infancy .....	20	13	7																			
40	Scald .....	4	2	2																			
41	Stomach .....	2	2	2																			
42	Violent and accidental deaths (suicide and homicide excepted) .....	32	23	9																			
43	Causes of death not specified or ill-defined .....	1	1	1																			

Estimated population, 70,400. Total resident deaths, 532. Rate per 1,000 population, 7.5.





TABULATION OF DEATHS IN NEWARK CITY FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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	ALL CAUSES	4940	2747	2213	782	235	28	17	0	12	321	38	132	218	314	575	922	1108	903	954	80	
2	Typhoid and paratyphoid fever	2	1	1																		
3	Typhus fever																					
4	Scarlet fever																					
5	Diphtheria	7	3	4		5	2	1	3	7												
6	Whooping cough	2	1	1																		
7	Infantila	18	12	6		2	2	2	1	1	1	1	1	1	1	4	1	2	1	1		
8	Measles	504	176	321	126	1	1	1	5	10	10	17	31	41	59	4	30	10				
9	Plague	29	12	17		1			1	5	10	12	15	21	21	7	42	0	1	2		
10	Tuberculosis of the respiratory system	47	50	11	37																	
11	Scrophulous forms of tuberculosis																					
12	Malnutrition	17	6	8		4				2	1	3	5	23	85	102	124	31	2			
13	Other infectious and parasitic diseases																					
14	Cancer and other malignant tumors																					
15	Is not specified, or of which the nature is uncertain	90	0	21	10					2	8	6	7	2	2	2	2	8				
16	Chronic rheumatism and gout	7	3	4																		
17	Diphtheria mellitus and gangrene	156	49	107	11						2	5	7	42	0	1	2	2				
18	Diabetes mellitus	10	8	2																		
19	Chorea	1	1																			
20	Other general diseases and chronic poisonings	88	99	49	10	6	1	1		7	5	12	0	10	12	17	10	7	2			
21	Progressive locomotor ataxia and general paralysis of the lunatic	20	10	1	4					1	1	2	8	4	4	5						
22	Cerebral hemorrhage, cerebral embolism and thrombosis	325	183	172	37						1	3	8	8	20	57	104	90	33	8		

23	Other diseases of the nervous system and of the organs of special sense	58	29	29	8	3	2		1	6	4	5	3	9	10	10	10	7	2			
24	Disease of special sense	152	87	61	10				1	2	5	19	22	54	151	232	410	385	105	9		
25	Other diseases of the circulatory system	13	4	1						1	2	2	5	10	19	22	29	18	2			
26	Bronchitis	175	113	60						1	4	11	11	22	58	89	42	84	13	1		
27	Pneumonia	277	182	105	46	30	10	1	2	1	44	2	1	11	22	38	50	42	84	13	1	
28	Other diseases of the respiratory system (tuberculosis excepted)	34	28	11	6	4	3		1	2	1	2	4	6	6	5	6	4				
29	Diarrhea and enteritis	148	88	10	2	7	3		1	10	2	1	2	4	6	5	6	4				
30	Amebiasis	66	38	28	7				1	0	3	8	5	6	6	9	7	6	3	1		
31	Other diseases of the liver and biliary passages	115	60	58	2				8	2	1	0	2	7	20	40	28	18	4			
32	Other diseases of the digestive system	270	148	122	50	4	1		1	7	2	2	5	12	30	20	20	20	10	3		
33	Nephritis	69	50	19	14	1			1	2	1	6	4	6	6	14	10	13	2			
34	Other diseases of the genitourinary system	8		8	3				1	1	2			3								
35	Other diseases of pregnancy, childbirth and the puerperal state	10		10										3	0	1						
36	Diseases of the skin and cellular tissue, and venereal diseases	6	3	3	1				2	2	2	2	2	1								
37	Congenital debility and malformations, premature birth and other diseases of early infancy	170	80	90	33	174	1	2	1	178	1											
38	Senility	23	10	15	2																	
39	Stroke	29	40	20	6																	
40	Alcoholism	22	15	9	10																	
41	Homicide	22	19	6																		
42	Violent and accidental deaths (suicide and homicide excepted)	280	194	86	50	10	3	3	1	1	13	6	28	21	38	82	48	38	31	24	1	
43	Cause of death not specified or ill-defined	1																				

Estimated population, 451,800.

Total resident deaths, 4,940.

Rate per 1,000 population, 10.8.

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

Abridged International List Number	CAUSE OF DEATH	Sex		Color, if other than white	AGE PERIODS										90 and over							
		Male	Female		Under 1 year	1 year	2 years	3 years	4 yrs.	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		
1	ALL CAUSES	100	103	90	9	7	2	2	2	2	11	4	8	7	12	23	25	30	44	27	2	
2	Typhoid and paratyphoid fever	1	1	1								1										
3	Shigellosis																					
4	Shigellosis																					
5	Shigellosis																					
6	Shigellosis																					
7	Shigellosis																					
8	Influenza	2	1	1																		
9	Plague																					
10	Other forms of the respiratory system	11	11	11	1																	
11	Other forms of the respiratory system	1	1	1																		
12	Syphilis																					
13	Malaria																					
14	Tuberculosis (acute or chronic)	18	8	10																		
15	Cancer and other malignant tumors	4	2	2																		
16	Tumors, nonmalignant, or of which the nature is not specified	3	2	1																		
17	Diabetes mellitus	3	2	1																		
18	Diabetes mellitus	3	2	1																		
19	Alcoholism (acute or chronic)	1																				
20	Other general diseases and chronic poisonings	1																				
21	Paralysis of the lungs, trachea and general	1																				
22	Cerebral hemorrhage, cerebral embolism and thrombosis	10	8	8	2																	

23	Other diseases of the nervous system and of the organs of special sense	2	2	2																		
24	Disease of the eye	4	2	3	4																	
25	Other diseases of the circulatory system	4	5	5																		
26	Bronchitis	11	5	9	1																	
27	Pneumonia	1			1																	
28	Other diseases of the respiratory system (tuberculosis excepted)	1																				
29	Diarrhoea and enteritis	3	2	1																		
30	Appendicitis	2	2	1																		
31	Other diseases of the digestive passages	2	2	1																		
32	Other diseases of the digestive passages	14	7	7																		
33	Nephritis	2	2	1																		
34	Other diseases of the genitourinary system																					
35	Other diseases of the genitourinary system (other than venereal disease, gonorrhoea, and the puerperal state)																					
36	Diseases of the skin and cellular tissue, and venereal diseases	2		2																		
37	Conceit, debility and malformation	5	4	1	5																	
38	Conceit, debility and malformation	3	1	2																		
39	Stillbirth																					
40	Violent and accidental deaths (suicide and homicide)	12	8	4																		
41	Violent and accidental deaths (suicide and homicide)	4																				
42	Violent and accidental deaths (suicide and homicide)																					
43	Cause of death not specified or ill-defined	1																				

Estimated population, 25,400.

Total resident deaths, 190.

Rate per 1,000 population, 7.8.



TABULATION OF DEATHS IN SOUTH ORANGE VILLAGE FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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
	ALL CAUSES	141	62	79	8	4	4	1	2	4	4	10	17	33	35	21	2	.....
1	Typhoid and paratyphoid fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	Typhoid fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	Shigellosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	Shigellosis of the respiratory system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	Shigellosis of the circulatory system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	Shigellosis of the digestive system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	Shigellosis of other organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	Shigellosis of unspecified site	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	Shigellosis of the respiratory system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	Shigellosis of the circulatory system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	Shigellosis of the digestive system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	Shigellosis of other organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	Shigellosis of unspecified site	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	Malaria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	Other infectious and parasitic diseases	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	Cancer, not other malignant tumors	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	Tumors, nonmalignant, or of which the nature is not specified	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	Chronic inflammation and gout	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	Alcoholism (acute or chronic)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	Other general diseases and chronic poisonings	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	Progressive diseases of the sense organs and general	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	Cerebral hemorrhage, cerebral embolism and thrombosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

23	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	Diseases of the heart	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	Diseases of the circulatory system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	Bronchitis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	Pneumonia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	Other diseases of the respiratory system (infectious excepted)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Diphtheria and diphtheritic	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	Anthrax	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	Diseases of the liver and biliary passages	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32	Other diseases of the digestive system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
33	Other diseases of the genitourinary system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
34	Other diseases of the genitourinary system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
35	Other diseases of pregnancy, childbirth and puerperal septicemia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
36	Diseases of the skin and cellular tissues, and diseases of the hair and nails	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
37	Diseases of the bones and organs of locomotion	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
38	Congenital debility and malformations, pre-natal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
39	Stillbirth and other diseases of early infancy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40	Suicide	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	Homicide	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
42	Violent and accidental deaths (suicide and homicide excepted)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
43	Cause of death not specified or ill-defined	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Estimated population, 16,400.

Total resident deaths, 141.

Rate per 1,000 population, 8.5.

TABULATION OF DEATHS IN WEST ORANGE TOWN FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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
						2	17	2	1	1	1	21	1	8	10	25	40	54	51	27	5	.....
1	ALL CAUSES	244	132	112	2	17	2	1	1	1	21	1	8	10	25	40	54	51	27	5	.....	
1	Typhoid and paratyphoid fever	1	1																			
2	Typhus fever	1	1																			
3	Smallpox																					
4	Scarlet fever																					
5	Scabies																					
6	Whooping cough	3	2	1		5																
7	Diphtheria	1	1																			
8	Influenza	1	1																			
9	Measles	1	1																			
10	Other forms of tuberculosis	2	1	1		2																
11	Tuberculosis of the respiratory system	2	1	1		2																
12	Spillitis	1	1																			
13	Chondritis	1	1																			
14	Other infections and parasitic diseases	1	1																			
15	Cancer and other malignant tumors	30	10	20																		
16	Tumors, nonmalignant, or of which the nature is not specified	1	1																			
17	Gonorrhea	1	1																			
18	Diphtheria, melitensis and diphtheria	6	2	4																		
19	Alcoholism (acute or chronic)	1	1																			
20	Other general diseases and chronic poisonings	4	1	3		1																
21	Progressive thrombotic and general atherosclerosis																					
22	Cerebral hemorrhage, cerebral embolism and thrombosis	23	11	12																		
23	Other diseases of the nervous system and of the organs of special sense	70	50	20																		
24	Disease of the eye	3	1	2																		
25	Other diseases of the circulatory system	1	1																			
26	Brachitis	1	1																			
27	Pneumonia	14	8	6																		
28	Other diseases of the respiratory system (infective)	1	1																			
29	bercubule and enteritis																					
30	Disentery and enteritis	1	1																			
31	Ascenditis	1	1																			
32	Diseases of the liver and biliary passages	4	1	3																		
33	Other diseases of the digestive system	0	0	0																		
34	Nephritis	4	2	2																		
35	Other diseases of the genitourinary system	4	2	2																		
36	Other diseases of the genitourinary system	4	2	2																		
37	Other diseases of the genitourinary system (infective)	1	1																			
38	Diseases of the skin and cellular tissue, and of the head and organs of locomotion	13	10	3																		
39	Scalds and burns	7	4	3																		
40	Premature birth and other diseases of early infancy	1	1																			
41	Infantile	7	4	3																		
42	Violent and accidental deaths (suicide and homicide excepted)	1	1																			
43	Causes of death not specified or ill-defined	10	7	3																		
44	Causes of death not specified or ill-defined	10	7	3																		
45	Causes of death not specified or ill-defined	10	7	3																		

Estimated population, 28,100. Total resident deaths, 244. Rate per 1,000 population, 8.6.

DEPARTMENT OF HEALTH

BUREAU OF VITAL STATISTICS

TABULATION OF DEATHS IN GLOUCESTER COUNTY FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

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
ALL CAUSES	800	446	414	83	57	2	2	2	7	60	7	20	38	41	72	112	185	193	117	14	
1 Typhoid and paratyphoid fever																					
2 Typhus fever																					
3 Cholera																					
4 Measles																					
5 Whooping cough																					
6 Influenza																					
7 Pneumonia																					
8 Tuberculosis of the respiratory system																					
9 Other forms of tuberculosis																					
10 Syphilis																					
11 Leprosy																					
12 Other infectious and parasitic diseases																					
13 Cancer																					
14 Other infectious and parasitic diseases																					
15 Cancer																					
16 Unknown or of which the nature is not specified																					
17 Chronic rheumatism and gout																					
18 Alzheimers (acute or chronic)																					
19 Other general diseases and chronic poisonings																					
20 Progressive locomotor ataxia and general paralysis of the insane																					
21 Hemiplegia, paraplegia, cerebral embolism and thrombosis																					

23 Other diseases of the nervous system and of the organs of special sense	7	4	3	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1
24 Diseases of the heart	237	133	104	15	11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25 Other diseases of the circulatory system	18	8	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
26 Bronchitis	102	53	49	17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
27 Emphysema	65	34	31	17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
28 Other diseases of the respiratory system (tuberculosis excepted)	6	3	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29 Diphtheria and enteritis	3	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30 Diseases of the liver and biliary passages	14	0	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
31 Diseases of the liver and biliary passages	14	0	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
32 Other diseases of the digestive system	15	5	10	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
33 Nephritis	84	35	49	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
34 Other diseases of the genitourinary system	13	6	7	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
35 Other diseases of the genitourinary system (the puerperal state and cellular tissue, and gonorrhea excluded)	4	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
36 Other diseases of pregnancy, childbirth and the puerperal state	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
37 Diseases of the skin and cellular tissue, and congenital disability and malformations, premature birth and other diseases of early infancy	24	10	7	5	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
38 Stillborns	11	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
39 Suicide	18	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
40 Sudden death	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
41 Unknown	49	31	18	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
42 Violent and accidental deaths (suicide and homicide excepted)																						
43 Cause of death not specified or ill-defined																						

Total resident deaths, 800.

Estimated population, 80,700.

Rate per 1,000 population, 10.0.

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

Table with columns for Cause of Death, Sex (Male, Female), Color (White, Other), Age Periods (Under 1 year to 90+), and Total. Includes categories like ALL CAUSES, Typhoid, Tuberculosis, and various organ system diseases.

Estimated population, 717,000. Total resident deaths, 6,880. Rate per 1,000 population, 9.6.



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

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, If other than white	Under 1 year	AGE PERIODS												90 and over			
							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
	ALL CAUSES	693	308	295	89	46	7	8	2	1	68	0	24	34	41	89	186	181	82	35	5	Unknown
1	Typhoid and paratyphoid fever																					
2	Typhus fever																					
3	Scholix																					
4	Malaria																					
5	Meningeal fever																					
6	Yellow fever																					
7	Dysentery																					
8	Diphtheria																					
9	Influenza																					
10	Tracheobronchitis of the respiratory system	62	59	36	6																	
11	Other forms of tuberculae	6	2	4	2																	
12	Syphilis																					
13	Diphtheria, scarlet fever and toxic disease	3	3																			
14	Alcoholism (acute or chronic)	2	2																			
15	Alcoholism (habit or chronic)	2	2																			
16	Other general diseases and chronic poisonings	18	8	10	1																	
17	Progressive locomotor ataxia and general paresis	2	2																			
18	Cerebral hemorrhage, cerebral embolism and thrombosis	51	29	25	2																	
19	Chorea																					
20	Other diseases of the nervous system and of the organs of special sense	8	6	2	1																	
21	Diseases of the heart	130	88	65	8																	
22	Other diseases of the circulatory system	9	4	5	1																	
23	Pneumonia	38	25	13	3																	
24	Other diseases of the respiratory system (except diphtheria and enteritis)	1	1																			
25	Alcoholism	18	11	7	2																	
26	Diseases of the liver and biliary passages	9	7	2	2																	
27	Other diseases of the digestive system	37	18	19	4																	
28	Other diseases of the genitourinary system	6	5	1	1																	
29	Puerperal septicemia																					
30	Other diseases of pregnancy, childbirth and the puerperium	4	4																			
31	Diseases of the eye and ciliary muscles, and of the bones and organs of locomotion	6	4	2	1																	
32	Congenital debility and malformations, prematurity	30	19	11	1																	
33	Stillbirth and other diseases of early infancy	9	5	4	1																	
34	Suicide	1		1																		
35	Homicide	1		1																		
36	Violent and accidental deaths (suicide and homicide)	30	21	9	3																	
37	Cause of death not specified or ill-defined	8	6	2	1																	
38	Other diseases of the nervous system and of the organs of special sense	218	130	88	6																	
39	Diseases of the heart	9	4	5	1																	
40	Pneumonia	38	25	13	3																	
41	Other diseases of the respiratory system (except diphtheria and enteritis)	1	1																			
42	Alcoholism	18	11	7	2																	
43	Diseases of the liver and biliary passages	9	7	2	2																	
44	Other diseases of the digestive system	37	18	19	4																	
45	Other diseases of the genitourinary system	6	5	1	1																	
46	Puerperal septicemia																					
47	Other diseases of pregnancy, childbirth and the puerperium	4	4																			
48	Diseases of the eye and ciliary muscles, and of the bones and organs of locomotion	6	4	2	1																	
49	Congenital debility and malformations, prematurity	30	19	11	1																	
50	Stillbirth and other diseases of early infancy	9	5	4	1																	
51	Suicide	1		1																		
52	Homicide	1		1																		
53	Violent and accidental deaths (suicide and homicide)	30	21	9	3																	
54	Cause of death not specified or ill-defined	8	6	2	1																	

Estimated population, 84,500

Total resident death, 689.

Rate per 1,000 population, 7.3.

TABULATION OF DEATHS IN HARRISON TOWN FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, If other than white	AGE PERIODS												Unknown								
						Under 1 year						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			
						Under 1 year	1 year	2 years	3 years	4 years	5 years															
1	ALL CAUSES	158	84	74	1	1	7	1	1	1	0	0	2	3	9	4	22	25	40	38	8	8	1			
2	Typhoid and paratyphoid fever	1																								
3	Typhoid fever																									
4	Scarlet fever																									
5	Scarlet fever	2																								
6	Diphtheria																									
7	Diphtheria																									
8	Diphtheria																									
9	Diphtheria																									
10	Other infectious and parasitic diseases	4																								
11	Tuberculosis of the respiratory system	4																								
12	Tuberculosis of the respiratory system																									
13	Other infectious and parasitic diseases																									
14	Malaria																									
15	Other infectious and parasitic diseases	10	10	0	1																					
16	Other infectious and parasitic diseases																									
17	Chronic rheumatism and gout																									
18	Chronic rheumatism and gout																									
19	Chronic rheumatism and gout	7																								
20	Other general diseases and chronic poisonings	4	1	3																						
21	Progressive locomotor ataxia and general paresis of the insane																									
22	Cerebral hemorrhage, cerebral embolism and thrombosis	12	4	8																						
23	Other diseases of the nervous system and of the organs of sense	1																								
24	Diseases of the heart	5	10	21																						
25	Other diseases of the circulatory system	2	2	1																						
26	Ischaemic heart disease																									
27	Ischaemic heart disease	12	5	7																						
28	Other diseases of the circulatory system (thrombosis excepted)																									
29	Diarrhoea and enteritis	4	3	1																						
30	Diseases of the liver and biliary passages	6	4	2																						
31	Diseases of the liver and biliary passages	16	4	12																						
32	Other diseases of the digestive system	10	8	2																						
33	Other diseases of the digestive system	1		1																						
34	Other diseases of the genitourinary system	1																								
35	Other diseases of pregnancy, childbirth and the puerperal state																									
36	Other diseases of pregnancy, childbirth and the puerperal state																									
37	Other diseases of pregnancy, childbirth and the puerperal state																									
38	Congenital debility and malformations, premature birth and other diseases of early infancy	2	1	1																						
39	Other diseases of early infancy	1		1																						
40	Other diseases of early infancy	1	1	1																						
41	Other diseases of early infancy																									
42	Violent and accidental deaths (suicide and homicide excepted)	12	8	4																						
43	Other diseases of early infancy																									

Estimated population, 15,001.

Total resident deaths, 138.

Rate per 1,000 population, 10.1.

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

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, If other than white	AGE PERIODS												90 and over	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	70 to 79	80 to 89			
						6	4	3	2	2	41	4	12	28	39	80	100			150	110	36	1		
007	ALL CAUSES .....	336	251	85		1	4	5	4	3	2	2	4	4	12	28	39	80	100	150	110	36	1		
1	Typhoid and paratyphoid fever .....	1	1			1																			
2	Typhus fever .....	1	1																						
3	Smallpox .....	1	1																						
4	Scarlet fever .....	1	1																						
5	Measles .....	1	1																						
6	Whooping cough .....	1	1																						
7	Diphtheria .....	1	1																						
8	Influenza .....	1	1																						
9	Scarlet fever .....	1	1																						
10	Tuberculosis of the respiratory system .....	33	23	10		2	7	1	1	1	1	1	1	1	2	7	1	7	9	3	1	1			
11	Other forms of tuberculosis .....	7	6	1																					
12	Syphilis .....	1	1																						
13	Other diseases of the circulatory system .....	67	38	29																					
14	Other infectious and parasitic diseases .....	1	1																						
15	Cancer and other malignant tumors .....	2	1	1																					
16	Tumors, nonmalignant, or of which the nature is not specified .....	10	5	5																					
17	Diabetes mellitus .....	4	4																						
18	Diabetes mellitus .....	4	4																						
19	Alcoholism (acute or chronic) .....	9	9																						
20	Other general diseases and chronic poisonings .....	1	1																						
21	Paralysis of the brain, spinal cord, and general paralysis .....	1	1																						
22	Cerebral hemorrhage, cerebral embolism and thrombosis .....	29	15	14																					
23	Other diseases of the nervous system and of the sense organs .....	6	5	1																					
24	Diseases of the heart .....	110	74	36		1	1	1	1	1	1	1	1	1	2	5	25	5	25	65	55	20			
25	Other diseases of the heart .....	15	11	4																					
26	Other diseases of the circulatory system .....	36	21	15		1	6	1	2	1	1	1	1	1	1	4	4	1	1	11	11	11	11		
27	Bronchitis .....	36	21	15																					
28	Other diseases of the respiratory system (infectious) .....	8	8																						
29	Diphtheria .....	1	1																						
30	Whooping cough .....	1	1																						
31	Scarlet fever .....	1	1																						
32	Other diseases of the liver and biliary passages .....	15	13	2																					
33	Other diseases of the digestive system .....	25	13	12																					
34	Other diseases of the genitourinary system .....	1	1																						
35	Other diseases of pregnancy, childbirth and the puerperal state .....	3		3																					
36	Diseases of the bones and joints .....	2	1	1																					
37	Other diseases of the bones and joints .....	10	10																						
38	Congenital debility and malformations, premature birth and other diseases of early infancy .....	12	11	1																					
39	Other diseases of the nervous system .....	12	11	1																					
40	Stroke .....	12	11	1																					
41	Homicide .....	2	2																						
42	Violent and accidental deaths (suicide and homicide) .....	25	29	0																					
43	Cause of death not specified or ill-defined .....	1	1																						

Estimated population, 59,261. Total resident deaths, 607. Rate per 1,000 population, 10.2.

TABULATION OF DEATHS IN JERSEY CITY FOR 1908, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, If other than white	AGE PERIODS											50 and over	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	70 to 79	80 to 89	90 and over
1	ALL CAUSES	3431	1821	1610	219	170	211	27	18	6	246	38	81	131	201	437	648	789	600	220	29		
2	Typhoid and paratyphoid fever	5	1	4	2																		
3	Typhus fever																						
4	Smallpox	1		1																			
5	Schistosomiasis	5	3	2																			
6	Scarlet fever	4	2	2																			
7	Whooping cough	4	2	2																			
8	Diphtheria	15	9	6	1																		
9	Pneumonia	173	118	60	33																		
10	Tuberculosis of the respiratory system	18	9	9	3																		
11	Other forms of tuberculosis	25	14	11	6																		
12	Malaria	21	12	9	5																		
13	Other infectious and parasitic diseases	485	201	234	29																		
14	Cancer and other malignant tumors	23	1	2																			
15	any specific name, or of which the nature is not specified	101	53	70	4																		
16	Chronic rheumatism and gout	10	5	5																			
17	Diabetes mellitus	7	4	3																			
18	Epilepsy	10	5	5																			
19	Paralysis	23	11	12																			
20	Other general diseases and chronic poisonings	45	19	80	1																		
21	Progressive locomotor ataxia and general paralysis of the insane	2	2																				
22	Cerebral mortage, cerebral embolism and thrombosis	593	309	184	13																		
23	Other diseases of the nervous system and of the organs of special sense	1181	633	548	56																		
24	Diseases of the heart	83	31	32	2																		
25	Rheumatism	0	0	0	0																		
26	Other diseases of the circulatory system	220	123	97	29																		
27	Other diseases of the respiratory system (tuberculosis excepted)	15	9	6	2																		
28	Diphtheria and enteritis	21	14	9	2																		
29	Whooping cough	70	43	26	1																		
30	Diseases of the liver and biliary passages	73	47	28	2																		
31	Other diseases of the digestive system	150	68	62	6																		
32	Neuritis	38	25	13	1																		
33	Other diseases of the genitourinary system	0	0	0	0																		
34	Pharyngeal scintipomia	6	3	3																			
35	Other diseases of pregnancy, childbirth and the puerperal state	0	0	0	0																		
36	Other diseases of the genital tract, and of the bones and organs of locomotion	0	0	0	0																		
37	Other diseases of the bones and organs of locomotion	110	65	45	6																		
38	Congenital debility and malformations, premature birth and other diseases of early infancy	29	15	14	1																		
39	Scarlet fever	6	4	2																			
40	Stiff neck	2	2																				
41	Strangling of the neck	4	4																				
42	Homicide	0	0	0	0																		
43	Violent and accidental deaths (suicide and homicide)	204	144	60	0																		
44	Causes of death not specified or ill-defined	1		1																			

Estimated population, 324,900.

Total resident deaths, 8,431.

Rate per 1,000 population, 10.5.

TABULATION OF DEATHS IN KEARNY TOWN FOR 1888, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, if other than white	AGE PERIODS											90 and over	Unknown			
						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
						Under 1 year	1 year	2 years	3 years	4 years											
	ALL CAUSES	373	200	173	4	12	2	1	1	1	15	4	4	100	75	27	2				
1	Typhoid and paratyphoid fever																				
2	Dysentery and cholera																				
3	Smallpox																				
4	Measles																				
5	Scarlet fever																				
6	Diphtheria																				
7	Influenza																				
8	Plague																				
9	Other diseases of the respiratory system	10	7	3																	
10	Other diseases of the circulatory system	3	3																		
11	Other forms of tuberculosis	3	3																		
12	Malaria	2	2																		
13	Other infectious and parasitic diseases	62	32	30																	
14	Other infectious diseases, of which the nature is not specified	2	1	1																	
15	Tumors, nonmalignant, or of which the nature is not specified	16	6	10																	
16	Chronic rheumatism and gout	1																			
17	Alcoholism (acute or chronic)	1																			
18	Other general diseases and chronic poisonings	1																			
19	Progressive locomotor ataxia and general																				
20	Other general diseases and chronic poisonings																				
21	Progressive locomotor ataxia and general																				
22	Cerebral hemorrhage, cerebral embolism and thrombosis	23	8	17																	
23	Other diseases of the nervous system and of sense organs																				
24	Diseases of the eye	12	7	5																	
25	Diseases of the ear	3	1	2																	
26	Other diseases of the circulatory system	4	1	3																	
27	Bronchitis	17	11	6																	
28	Other diseases of the respiratory system (exclusive of tuberculosis)	9	1	8																	
29	Other diseases of the respiratory system (exclusive of tuberculosis)																				
30	Diarrhoea and enteritis	4	2	2																	
31	Dysentery and cholera	3	3																		
32	Other diseases of the liver and biliary passages	17	8	9																	
33	Nephritis	27	14	13																	
34	Other diseases of the genitourinary system	5	1	4																	
35	Other diseases of the genitourinary system																				
36	Other diseases of pregnancy, childbirth and the puerperal state																				
37	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion	1	1																		
38	Contaminated food and beverages																				
39	Scalds	8	6	2																	
40	Scalds	0	0	1																	
41	Violent and accidental deaths (suicide and homicide excepted)	1	1																		
42	Violent and accidental deaths (suicide and homicide excepted)																				
43	Cause of death not specified or ill-defined	14	10	4																	

Estimated population, 46,800.

Total resident deaths, 573.

Rate per 1,000 population, 7.0.

TABULATION OF DEATHS IN UNION CITY FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, if other than white	AGE PERIODS											50 and over	Unknown					
						Under 1 year						Under 5 years											
						Under 1 year	1 year	2 years	3 years	4 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	
ALL CAUSES																							
1	Typhoid and paratyphoid fever	1																					
2	Scarlet fever																						
3	Diphtheria																						
4	Whooping cough																						
5	Influenza																						
6	Pneumonia	15	10	5																			
7	Other forms of tuberculosis	15	10	5																			
8	Syphilis																						
9	Malaria																						
10	Other infectious and parasitic diseases	71	35	36																			
11	Tumors, nonmalignant, or of which the nature is not specified	7	6	1																			
12	Tumors, nonmalignant, or of which the nature is not specified	17	21	15																			
13	Diabetes mellitus	1	2	1																			
14	Alcoholism (acute or chronic)	1	2	1																			
15	Other general diseases and chronic poisonings	3	3																				
16	Fractures of the skull, face and neck	53	23	30																			
17	Cerebral hemorrhage, cerebral embolism and thrombosis																						
18	Other diseases of the nervous system and of the organs of special sense	9	7	2																			
19	Diseases of the heart	278	124	154																			
20	Other diseases of the circulatory system	2	1	1																			
21	Pneumonia	25	15	10																			
22	Other diseases of the respiratory system (tuberculosis excepted)	5	2	3																			
23	Other diseases of the respiratory system (tuberculosis excepted)	5	2	3																			
24	Apoplexias	17	9	8																			
25	Other diseases of the liver and biliary passages	13	7	6																			
26	Other diseases of the digestive system	6	2	4																			
27	Other diseases of the genitourinary system	6	2	4																			
28	Puerperal septicaemia	2		2																			
29	Other diseases of pregnancy, childbirth and puerperium	2		2																			
30	Diseases of the skin and cellular tissue and of the bones and organs of locomotion	14	6	8																			
31	Congenital debility and malformations, prematurity and other diseases of early infancy	2	2																				
32	Staccato	12	11	1																			
33	Violent and accidental deaths (suicide and homicide)	20	21	6																			
34	Cause of death not specified or ill-defined																						

Estimated population, 58,650.

Total resident deaths, 580.

Rate per 1,000 population, 102.

TABULATION OF DEATHS IN WEST NEW YORK TOWN FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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
						3	19	1	3	22	3	12	11	31	41	57	58	73	21	2		
1	ALL CAUSES	331	184	147	8	19	1	3	22	3	12	11	31	41	57	58	73	21	2			
2	Typhoid and paratyphoid fever	1	1																			
3	Typhus fever																					
4	Scarlet fever																					
5	Scarlet fever																					
6	Diphtheria																					
7	Diphtheria																					
8	Influenza	4	2	2	3	1																
9	Plague																					
10	Tuberculosis of the respiratory system	30	12	18	1																	
11	Tuberculosis of the respiratory system	10	4	6	1																	
12	Syphilis	1	1																			
13	Malaria	3	2	1																		
14	Other infectious and parasitic diseases	42	21	21	1																	
15	Other infectious and parasitic diseases	1																				
16	Tumors, nonmalignant, or of which the nature is not specified	11	6	5	8																	
17	Cerebral meningitis and gout	1	1																			
18	Alcoholism (acute or chronic)	11	3	8	8																	
19	Alcoholism (acute or chronic)	11	3	8	8																	
20	Other general diseases and chronic poisonings	11	3	8	8																	
21	Progressive locomotor ataxia and general paresis	1	1																			
22	Cerebral hemorrhage, cerebral embolism and thrombosis	20	13	11	11																	
23	Other diseases of the nervous system and of the organs of special sense	2	2																			
24	Disease of the heart	96	59	37	1																	
25	Disease of the heart	1	1																			
26	Bronchitis	1	1																			
27	Pneumonia	28	11	17	1	6																
28	Other diseases of the respiratory system (tuberculosis and emphysema)	1	1																			
29	Diarrhea and enteritis	4	2	2	3																	
30	Appendicitis	2	2																			
31	Disease of the liver and biliary passages	8	6	2																		
32	Other diseases of the digestive system	14	7	7																		
33	Nephritis	15	7	8																		
34	Other diseases of the genitourinary system	1	1																			
35	Puerperal septicemia	1		1																		
36	Other diseases of pregnancy, childbirth and the puerperal state	1		1																		
37	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion	2	2																			
38	Convulsions and other diseases of early infancy	6	4	2	6																	
39	Senility	1	1																			
40	Stroke	5	3	2																		
41	Violent and accidental deaths (suicide and homicide excepted)	1	1																			
42	Violent and accidental deaths (suicide and homicide excepted)	15	12	3	1	2	1	3	1	3	1	3	1	3	2	1	1	1	1	1		
43	Cause of death not specified or ill-defined																					

Estimated population, 40,200. Total resident deaths, 331. Rate per 1,000 population, 8.2.

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

Abridged International List Number	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 and paratyphoid fever	487	290	227	8	27	3	1	1	1	32	0	1	12	25	31	54	87	135	91	10	.....	
2	Typhus fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	Smallpox	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	Dysentery	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	Scarlet fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	Whooping cough	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	Diphtheria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	Epidemic typhus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	Plague	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	Tuberculosis of the respiratory system	14	8	6	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	Other forms of tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	Malaria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	Hemiplegia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	Other infectious and parasitic diseases	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	Cancer and other malignant tumors	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	Tumors, nonmalignant, or of which the nature is uncertain	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	Chronic rheumatism and gout	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	Diabetes mellitus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	Alcoholism (acute or chronic)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	Alcoholism (acute or chronic) - unspecified	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	Progressive locomotor ataxia and ataxias	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	Intoxication of the insane and cerebral hemorrhage, cerebral embolism and thrombosis	3	3	0	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
23	Other diseases of the nervous system and of the special senses	41	20	21	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	Diseases of the heart	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	Other diseases of the circulatory system	157	71	60	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	Bronchitis	16	10	6	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	Pneumonia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	Other diseases of the respiratory system (infectious excepted)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Diarrhoea and enteritis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	Dysentery	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	Diseases of the liver and biliary passages	15	10	5	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32	Other diseases of the digestive system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
33	Other diseases of the genitourinary system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
34	Puerperal septicemia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
35	Other diseases of pregnancy, childbirth and the puerperium	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
36	Diseases of the skin and cellular tissue	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
37	Diseases of the bones and organs of locomotion	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
38	Congenital debility and malformations, pre-natal and other diseases of early infancy	17	7	10	3	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
39	Stomach	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40	Stomach	16	14	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	Stomach	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
42	Non-suicidal self-inflicted deaths (suicide and homicide excepted)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
43	Cause of death not specified or ill-defined	24	12	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Total resident deaths, 487.

Estimated population, 85,500.

Rate per 1,000 population, 13.7.



TABULATION OF DEATHS IN MERCER COUNTY FOR 1888, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, If other than white	AGE PERIODS																					
						Under 1 year						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
						Under 1 year	1 year	2 years	3 years	4 years	Under 5 years																
1	ALL CAUSES	1084	1076	014	183	113	10	7	0	3	145	17	44	78	93	171	310	479	495	180	22	Unknown					
2	Typhoid and paratyphoid fever	1	1																								
3	Typhus fever																										
4	Smallpox																										
5	Scarlet fever	1	1																								
6	Whooping cough	2	1	1																							
7	Diphtheria	1	1																								
8	Measles	12	6	6	1																						
9	Plague																										
10	Tuberculosis of the respiratory system	70	40	30	11																						
11	Other forms of tuberculosis	17	13	4	10	1																					
12	Malaria	1	1																								
13	Other infectious and parasitic diseases	253	128	125	12	2																					
14	Cancer and other malignant tumors	8	4	4	1																						
15	Fracture, nonmalignant, or of which the nature is uncertain	5	4	1																							
16	Chronic rheumatism and gout	53	21	32																							
17	Diabetes mellitus	4	4																								
18	Alcoholism (acute or chronic)	4	4																								
19	Progressive locomotor ataxia and general paralysis of the insane	31	17	14	3	1																					
20	Cerebral hemorrhage, cerebral embolism and thrombosis	6	4	2																							
21	Stroke	140	61	85	30																						
22	Other diseases of the nervous system and of the organs of special sense	20	13	7	2																						
23	Disease of the heart	629	319	310	41																						
24	Other diseases of the circulatory system	39	32	7	6																						
25	Brucellosis	6	2	4																							
26	Pneumonia	185	79	56	22	30	0	6	1	1	46	5	1	4	8	0	18	28	11	4	1						
27	Other diseases of the respiratory system (tuberculosis excepted)	10	6	4	2	8	1	1	1	10	1	1	1	1	2	1	2	3	4	1							
28	Diphtheria	12	8	4	2	8	1	1	1	10	1	1	1	1	2	1	2	3	4	1							
29	Whooping cough	16	7	9	4																						
30	Scarlet fever	30	16	14																							
31	Diseases of the liver and biliary passages	32	30	2	15	3	1			4	1	3	2	0	12	17	42	4	22	1							
32	Other diseases of the digestive system	24	21	3	12	1				1	1	1	1	1	2	3	12	2	47	9	22						
33	Other diseases of the genitourinary system	6	6	0	1					1	1	1	1	1	1	1	1	1	1	1	1						
34	Puerperal septicemia	8		8	1																						
35	Other diseases of pregnancy, childbirth and puerperium	6		6	1																						
36	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion	61	30	31	19	61																					
37	Congenital debility and malformations, prematurity, and other diseases of early infancy	22	15	7	1																						
38	Scalds	4	4																								
39	Stichia	105	72	33	11																						
40	Homicide	1	1																								
41	Accidental deaths (suicide and homicide excepted)	1	1																								
42	Cause of death not specified or ill-defined	105	72	33	11																						
43	Rate per 1,000 population, 0.0																										

Total resident deaths, 1,984.

Estimated population, 100,000.

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

Abridged International List Number	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	
						74	9	2	4	2	91	0	31	46	66	117	215	330	277	102	13	.....	
1	ALL CAUSES	1298	701	597	126	74	9	2	4	2	91	0	31	46	66	117	215	330	277	102	13	.....	
2	Typhoid and paratyphoid fever	1	1																				
3	Typhus fever																						
4	Scarlet fever																						
5	Diphtheria																						
6	Whooping cough																						
7	Measles																						
8	Scarlet fever																						
9	Diphtheria																						
10	Whooping cough																						
11	Measles																						
12	Scarlet fever	60	30	24	11	1																	
13	Diphtheria	13	11	2	7	1																	
14	Whooping cough	13	11	2	7	1																	
15	Measles	154	75	79	8	2																	
16	Scarlet fever	15	4	11	2																		
17	Diphtheria	6	3	3	1																		
18	Whooping cough	3	3																				
19	Measles	40	18	24	1																		
20	Scarlet fever	3	2	1																			
21	Diphtheria	20	7	13	2																		
22	Whooping cough	4	2	2																			
23	Measles	84	34	50	6																		
24	Other diseases of the nervous system and of the organs of special sense	12	8	4																			
25	Diseases of the heart	421	230	191	28	1																	
26	Diseases of the circulatory system	28	21	7	6	1																	
27	Brucellosis	80	62	18	12	20	4	2	1														
28	Pneumonia	9	6	3																			
29	Other diseases of the respiratory system (infectious)	12	3	9	4																		
30	Diphtheria and scarlet fever	12	3	9	4																		
31	Appendicitis	23	16	7																			
32	Diseases of the liver and biliary passages	28	16	12																			
33	Diseases of the digestive system	48	27	21																			
34	Nephritis	20	14	6																			
35	Other diseases of the genitourinary system	4	2	2																			
36	puerperal septicemia	3		3																			
37	Diseases of pregnancy, childbirth and the puerperium	3		3																			
38	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion	2	2																				
39	Senility	40	22	18	11	40																	
40	Alcoholism	17	11	6																			
41	Violence	4	2	2																			
42	Violent and accidental deaths (suicide and homicide excepted)	62	43	19	6	1	1	1	1	1	3	1	7	4	4	8	7	12	8	7	1		
43	Cause of death not specified or ill-defined	1	1																				

Estimated population, 125,100.

Total resident deaths, 1,298.

Rate per 1,000 population, 10.3.

TABULATION OF DEATHS IN MIDDLESEX COUNTY FOR 1989, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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	ALL CAUSES	2020	1127	899	72	128	4	0	8	132	25	51	95	112	214	384	457	344	170	17		
1	Typhoid and paratyphoid fever	1		1																		
2	Typhus fever																					
3	Smallpox																					
4	Measles	2		2																		
5	Scarlet fever	1		1																		
6	Whooping cough	2		2																		
7	Diphtheria	1		1																		
8	Influenza	3		3																		
9	Influenza with primary pneumonia	4		4																		
10	Influenza of the respiratory system	73	41	32	6	1	4	15	11	11	10	0	4	2								
11	Other forms of tuberculosis	8	4	4	1	2	2	2	1	6	3	5	2									
12	Syphilis	19	17	2	11																	
13	Gonorrhea	15	9	6	0	1	2	2	3	1	3	14	31	77	89	47	10	2				
14	Other infectious and parasitic diseases	18	10	8																		
15	Tumors, nonmalignant, or of which the nature is not specified	260	165	121	4																	
16	Tumors, malignant, or of which the nature is not specified	11	3	8	1																	
17	Diabetes mellitus	8	4	4	1																	
18	Diabetes insipidus	1		1																		
19	Alcoholism (acute or chronic)	3	2	1																		
20	Other general diseases and symptoms	33	18	15	2																	
21	Other general diseases and symptoms, congenital	9	7	2	1																	
22	Cerebral hemorrhage, cerebral embolism and thrombosis	172	77	95	4																	

23	Other diseases of the nervous system and of the organs of special sense	30	20	10	1	3															
24	Diseases of the heart	570	324	253	15																
25	Other diseases of the circulatory system	38	17	21	2																
26	Ischemic heart disease	34	18	16	1																
27	Pneumonia	92	54	38	10	10	2	3	2	26											
28	Other diseases of the respiratory system (tuberculosis excepted)	14	8	6	1																
29	Bronchitis and emphysema	11	8	3	1																
30	Asthma	11	8	3	1																
31	Diseases of the liver and biliary passages	36	16	20	1																
32	Other diseases of the digestive system	36	20	16	1																
33	Other diseases of the genitourinary system	26	13	13	4																
34	Other diseases of the genitourinary system	26	13	13	1																
35	Fuoperal septicaemia	5		5																	
36	Other diseases of pregnancy, childbirth and the puerperal state and eclampsia	8		8																	
37	Other diseases of the circulatory system and of the bones and organs of locomotion	3	1	2																	
38	Congenital debility and malformations, prenatal	90	46	44	1	88	1			90											
39	Scour, birth and other diseases of early infancy	33	29	4	1																
40	Stillbirth	11	6	5	2																
41	Homicide	139	103	36	3																
42	Violent and accidental deaths (suicide and homicide excepted)	2		2																	
43	Cause of death not specified or ill-defined																				

Estimated population, 234,000.

Total resident deaths, 2,028.

Rate per 1,000 population, 8.6.



TABULATION OF DEATHS IN PERRH AMBOY CITY FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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	ALL CAUSES	381	222	159	8	20	1	1	2	2	20	1	3	9	18	27	50	78	104	48	20	.....
2	Typhoid and paratyphoid fever	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	Typhus fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	Scarlet fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	Whooping cough	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	Scarlet fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	Diphtheria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	Whooping cough	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	Diphtheria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	Tuberculosis of the respiratory system	14	8	6	0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	Other forms of tuberculosis	2	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	Malaria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	Other infectious and parasitic diseases	3	1	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	Cancer and other malignant tumors	30	31	22	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	Cancer and other malignant tumors, of which the nature is not specified	5	2	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	Chronic rheumatism and gout	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	Diabetes mellitus	17	4	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	Other diseases of the circulatory system	5	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	Other diseases of the circulatory system	3	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	Progressive locomotor ataxia and general paralysis of the insane	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	Cerebral hemorrhage, cerebral embolism and thrombosis	27	10	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

22	Other diseases of the nervous system and of the organs of special sense	4	3	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
23	Diseases of the heart and circulatory system	101	62	44	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	Coronary atherosclerosis	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	Bronchitis	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	Other diseases of the respiratory system (infectious)	10	13	8	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	Pneumonia	10	13	8	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	Other diseases of the respiratory system (infectious)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Diarrhea and dysentery	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	Appendicitis	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	Diseases of the liver and biliary passages	6	4	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32	Other diseases of the digestive system	20	12	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
33	Nephritis	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
34	Other diseases of the genitourinary system	7	4	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
35	Puerperal septicemia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
36	Other diseases of the urinary system, pregnancy, childbirth and the puerperium	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
37	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
38	Congenital debility and malformations, prunaceous and other causes of early infancy	18	11	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
39	Senility	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40	Suicide	6	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	Infanticide	5	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
42	Other accidental deaths (suicide and homicide excluded)	20	16	10	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
43	Cause of death not specified or ill-defined	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Estimated population, 44,800. Total resident deaths, 381. Rate per 1,000 population, 8.6.









TABULATION OF DEATHS IN RED BANK BOROUGH FOR 1933, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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	ALL CAUSES	108	83	83	20	4	4	4	4	4	4	3	4	0	17	31	35	30	22	4	4	
2	Typhoid and paratyphoid fever																					
3	Typhus fever																					
4	Malaria																					
5	Scarlet fever																					
6	Whooping cough																					
7	Diphtheria																					
8	Influenza																					
9	Plague																					
10	Tuberculosis of the respiratory system	8	3	5	0																	
11	Other forms of tuberculosis	3	2	1	3																	
12	Chorea																					
13	Malaria																					
14	Other infectious and parasitic diseases	25	10	15	5																	
15	Cancer and other malignant neoplasms of which the nature is not specified	1		1																		
16	Chronic rheumatism and gout																					
17	Diabetes mellitus																					
18	Alcoholism																					
19	Other diseases and chronic poisonings	1	1																			
20	Obstetrical diseases and general paralysis of the insane	2	1	1																		
21	Progressive locomotor ataxia and general paralysis of the insane																					
22	Cerebral hemorrhage, cerebral embolism and thrombosis	14	7	7	4																	

23	Other diseases of the nervous system and of the organs of special sense	2	2																			
24	Diseases of the heart	60	35	27	7																	
25	Other diseases of the circulatory system	4	1	3	4																	
26	Measles	9	4	5	1																	
27	Epidemic typhus																					
28	Other diseases of the respiratory system (tuberculosis excepted)																					
29	Diphtheria and enteritis																					
30	Appendicitis																					
31	Diseases of the liver and biliary passages																					
32	Other diseases of the digestive system																					
33	Other diseases of the genitourinary system	12	6	6	3																	
34	Other diseases of the respiratory system	4	2	2	1																	
35	Puerperal septicemia																					
36	Other diseases of pregnancy, childbirth and the puerperium																					
37	Disorders of the skin and cellular tissue, and of the bones and organs of locomotion																					
38	Congenital debility and malformations, prematurity, birth and other diseases of early infancy	2	2		2																	
39	Scalds and burns																					
40	Suicide																					
41	Homicide																					
42	Violent accidental deaths (suicide and homicide excepted)	13	9	4	1																	
43	Cause of death not specified or ill-defined																					

Estimated population, 12,700.

Total resident deaths, 108.

Rate per 1,000 population, 15.2.

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

Abridged International List Number	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	ALL CAUSES	1384	730	624	47	66	5	3	3	2	75	7	20	30	50	126	207	281	341	182	36	
2	Typhoid and paratyphoid fever	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Typhus fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Smallpox	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Scarlet fever	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Whooping cough	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Plague	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Tuberculosis of the respiratory system	82	22	10	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	Other forms of tuberculosis	11	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Malaria	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Other infectious and parasitic diseases	171	83	86	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	Tumors, neoplasms, or of which the nature is uncertain	6	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Chronic rheumatism and gout	37	9	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Diabetes mellitus	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Alcoholism (acute and chronic)	25	0	15	1	6	2	7	2	7	1	3	1	2	3	1	3	1	3	1	3	1
17	Progressive locomotor ataxia and general paralysis of the insane	3	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Cerebral hemorrhage, cerebral embolism and thrombosis	123	57	65	10	10	2	3	2	3	5	32	27	31	18	4	0	0	0	0	0	0

23	Other diseases of the nervous system and of the organs of special sense	21	15	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	Disease of the heart	407	225	184	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Other diseases of the circulatory system	27	16	10	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Bronchitis	6	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Pneumonia	67	42	25	4	10	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
28	Other diseases of the respiratory system (tuberculosis and enteritis)	19	0	4	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29	Appendicitis	12	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Disease of the liver and biliary passages	24	9	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Other diseases of the digestive system	137	61	73	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
32	Nephritis	29	14	15	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
33	Other diseases of the genitourinary system	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	Neuronal septicaemia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Other diseases of the respiratory, circulatory, and genitourinary systems	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Disease of the skin and cellular tissue, and of the bones and organs of locomotion	43	20	23	2	48	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Other diseases of the skin and cellular tissue, and of the bones and organs of locomotion	6	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	Stillbirth and other diseases of early infancy	22	15	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
39	Senility	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	Suicide	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	Violent and accidental deaths (suicide and homicide excepted)	76	59	17	2	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
42	Cause of death not specified or ill-defined	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
43	Cause of death not specified or ill-defined	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Estimated population, 122,600. Total resident deaths, 1,854. Rate per 1,000 population, 11.0.

TABULATION OF DEATHS IN DOVER TOWN FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Table with columns: Cause of Death, 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), Sex (Male, Female, Color, if other than white), and Total. Rows include ALL CAUSES, Typhoid and paratyphoid fever, Typhus fever, Cholera, Measles, Scarlet fever, Whooping cough, Diptheria, Influenza, Plague, Tuberculosis of the respiratory system, Other forms of tuberculosis, Malaria, Other infectious and parasitic diseases, Cancer and other malignant neoplasms, Chronic rheumatism and gout, Diabetes mellitus, Other general diseases and chronic poisonings, Progressive locomotor ataxia and general paralysis of the insane, Coronary atherosclerosis, cerebral embolism and thrombosis, Other diseases of the nervous system, Diseases of the heart, Other diseases of the circulatory system, Pneumonia, Other diseases of the respiratory system (Influenza excepted), Anemidictis, Diseases of the liver and biliary passages, Other diseases of the digestive system, Other diseases of the genitourinary system, Premenstrial dysmenorrhea, Diseases of pregnancy, childbirth and the puerperium, Diseases of the skin and cellular tissue, Congenital debility and malformations, Prenatal debility and malformations, Scalding, burns and other diseases of early infancy, Suicide, Accidental deaths (suicide and homicide), Violent deaths, Cause of death not specified or ill-defined.

Estimated population, 10,100.

Total resident deaths, 124.

Rate per 1,000 population, 12.2

TABULATION OF DEATHS IN MORRISTOWN TOWN FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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
						6	1	1	1	1	7	1	5	11	23	33	46	68	83	5	1	
1	ALL CAUSES	227	117	110	283	6	1	1	1	1	7	1	5	11	23	33	46	68	83	5	1	
1	Typhoid and paratyphoid fever																					
2	Smallpox																					
3	Scarlet fever																					
4	Measles																					
5	Scarlet fever																					
6	Diphtheria																					
7	Diphtheria																					
8	Influenza																					
9	Plague																					
10	Tuberculosis of the respiratory system	30	6	4	4																	
11	Tuberculosis of the respiratory system	4	2	1	1																	
12	Syphilis	4	2	1	1																	
13	Malaria																					
14	Other infectious and parasitic diseases	20	11	15	2																	
15	Other infectious and parasitic diseases	1	1	1	1																	
16	Tumors nonmalignant or of which the nature is not specified	11	1	1	1																	
17	Chronic rheumatism and gout	11	1	1	1																	
18	Alcoholism (acute or chronic)	10	2	10	1																	
19	Alcoholism (acute or chronic)	3	2	1	1																	
20	Other general diseases and chronic poisonings	8	2	1	1																	
21	Progressive locomotor ataxia and general paresis	2	2	2	2																	
22	Cerebral hemorrhage, cerebral embolism and thrombosis	23	13	10	7																	
23	Other diseases of the nervous system and of the organs of special sense	1	1	1	1																	
24	Diseases of the heart	72	38	30	4																	
25	Diseases of the circulatory system	7	5	2	1																	
26	Bronchitis	1	1	1	1																	
27	Pneumonia	1	4	3	5																	
28	Other diseases of the respiratory system (tuberculosis excepted)	1	1	1	1																	
29	Diarrhoea and enteritis	1	1	1	1																	
30	Appendicitis	2	2	1	1																	
31	Diseases of the liver and biliary passages	1	1	1	1																	
32	Diseases of the digestive system	1	1	1	1																	
33	Nephritis	10	5	2	2																	
34	Other diseases of the genitourinary system	1	1	1	1																	
35	Puerperal septicemia	6	1	5	2																	
36	Other diseases of pregnancy, childbirth and the puerperal state	1	1	1	1																	
37	Diseases of the skin and cellular tissue and of the bones and organs of locomotion	6	4	2	1																	
38	Complications of pregnancy, puerperal, and other diseases of the female sex	6	4	2	1																	
39	Senility	2	1	2	6																	
40	Stroke	5	1	2	1																	
41	Violent and accidental deaths (suicide and homicide excepted)	8	8	1	1																	
42	Violent and accidental deaths (suicide and homicide excepted)	1	1	1	1																	
43	Cause of death not specified or ill-defined	1	1	1	1																	

Estimated population, 16,400. Total resident deaths, 227. Rate per 1,000 population, 13.8.

TABULATION OF DEATHS IN OCEAN COUNTY FOR 1933, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, if other than white	AGE PERIODS										90 and over	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	70 to 79	80 to 89
						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		
	ALL CAUSES .....	535	289	246	17	20	1	1	1	1	81	1	0	10	20	30	82	118	125	75	16					
1	Typhoid and paratyphoid fever .....																									
2	Dysentery .....																									
3	Shigellosis .....																									
4	Measles .....																									
5	Scarlet fever .....																									
6	Diphtheria .....																									
7	Whooping cough .....																									
8	Influenza .....	6	3	3																						
9	Pneumonia .....	10	11	9																						
10	Tuberculosis of the respiratory system .....	4	4																							
11	Other forms of tuberculosis .....	4	4																							
12	Syphilis .....																									
13	Malaria .....																									
14	Other infectious and parasitic diseases .....	80	42	41																						
15	Cancer into other malignant tumors .....																									
16	Tumors, nonmalignant, or of which the nature is not specified .....	18	0	12																						
17	Diabetes mellitus and gout .....	1	1																							
18	Alcoholism (acute or chronic) .....	1	1																							
19	Other general diseases and chronic poisonings .....	2	2																							
20	Progressive diseases of the brain, spinal cord and general peripheral nervous system .....	1	1																							
21	Progressive diseases of the heart and general peripheral nervous system .....	1	1																							
22	Cerebral hemorrhage, cerebral embolism and thrombosis .....	20	22	17																						
23	Other diseases of the nervous system and of the organs of special sense .....	1	1																							
24	Diseases of the circulatory system .....	162	92	70																						
25	Other diseases of the circulatory system .....	12	5	7																						
26	Bronchitis .....	42	20	22																						
27	Pneumonia .....	2	2																							
28	Pneumonia of the respiratory system (infectious excepted) .....	4	2	2																						
29	Diarrhoea and enteritis .....	4	5	3																						
30	Alimentic disorders of the alimentary passages .....	6	6																							
31	Other diseases of the alimentary passages .....	27	14	13																						
32	Other diseases of the digestive system .....	7	5	2																						
33	Nephritis .....	1	1																							
34	Other diseases of the genitourinary system .....	2	2																							
35	Suppurative infectious diseases of the genitourinary system .....	2	2																							
36	Other infectious diseases of the genitourinary system .....	2	2																							
37	Diseases of the skin and cellular tissue, and of the mucous membrane .....	1	1																							
38	Accidents of the bones and organs of locomotion .....	10	10	9																						
39	Senility .....	12	10	2																						
40	Stroke .....	1	1																							
41	Violent and accidental deaths (suicide and homicide excepted) .....	28	17	11																						
42	Violent and accidental deaths (suicide and homicide excepted) .....	2	2																							
43	Cause of death not specified or ill-defined .....	1	1																							

Estimated population, 87,800.

Total resident deaths, 535.

Rate per 1,000 population, 14.1.

TABULATION OF DEATHS IN FABSAIC COUNTY FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, If other than white	AGE PERIODS														30 and over	Unknown		
						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	
1	ALL CAUSES	2974	1625	1349	114	189	18	9	12	2	180	25	50	103	100	815	511	697	629	265	33	.....	
1	Typhoid and paratyphoid fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	Typhus fever	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	Smallpox	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	Measles	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	Diphtheria	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	Whooping cough	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	Diphtheria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8	Influenza	16	6	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	Scarlet fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	Whooping cough	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	Other forms of tuberculosis	130	74	56	14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	Phthisis of the respiratory system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13	Miliary tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	Other forms of tuberculosis	28	21	7	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15	Phthisis of the respiratory system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	Other forms of tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	Other forms of tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	Other forms of tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	Other forms of tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	Other forms of tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	Other forms of tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	Other forms of tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
23	Other diseases of the nervous system and of the organs of special sense	24	14	10	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	Other diseases of the nervous system and of the organs of special sense	861	475	386	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
33	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
34	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
35	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
36	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
37	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
38	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
39	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
42	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
43	Other diseases of the nervous system and of the organs of special sense	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Estimated population, 320,000.

Total resident deaths, 2,974.

Rate per 1,000 population, 9.2.

## DEPARTMENT OF HEALTH

TABULATION OF DEATHS IN CLIFTON CITY FOR 1981, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total		Male		Female		Color, if other than white	AGE PERIODS										
		200	100	100	50	Under 5 years													
						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	ALL CAUSES	200	100	4	25	2	32	4	6	11	22	40	71	70	64	29	2	.....	
1	Typhoid and paratyphoid fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
2	Typhus fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
3	Smallpox	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
4	Measles	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
5	Scarlet fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
6	Whooping cough	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
7	Diphtheria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
8	Influenza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
9	Pneumonia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
10	Other forms of tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
11	Other forms of tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
12	Syphilis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
13	Malaria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
14	Other infectious and parasitic diseases	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
15	Other infectious and parasitic diseases	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
16	Tumors, nonmalignant, or of which the nature is not specified	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
17	Tumors, nonmalignant, or of which the nature is not specified	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
18	Tumors, malignant, or of which the nature is not specified	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
19	Alcoholism (acute or chronic)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
20	Other general diseases and chronic poisonings	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
21	Other general diseases and chronic poisonings	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
22	Paralysis of the brain	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
23	Cerebral hemorrhage, cerebral embolism and thrombosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

## BUREAU OF VITAL STATISTICS

25	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
33	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
34	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
35	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
36	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
37	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
38	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
39	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
42	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
43	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
44	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
45	Other diseases of the nervous system and of the sense organs	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Estimated population, 65,800.

Total resident deaths, 862.

Rate per 1,000 population, 0.4.

TABULATION OF DEATHS IN PASSAIC CITY FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, if other than white	AGE PERIODS															
						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
						Under 1 Year	1 Year	2 Years	3 Years	4 Years											
1	ALL CAUSES	534	317	217	24	27	1	14	33	27	65	106	115	100	40	1					
2	Typhoid and paratyphoid fever																				
3	Typhus fever																				
4	Sinhalox																				
5	Scarlet fever																				
6	Stenoseptic fever																				
7	Whooping cough																				
8	Diphtheria																				
9	Measles																				
10	Tuberculosis of the respiratory system	17	10	7	4	1	1	1	0	6	7	6	2	1	1						
11	Other forms of tuberculosis	2	1	1						1	2	1	1								
12	Syphilis																				
13	Other infectious and parasitic diseases	57	31	26	1	2		2	3	6	20	15	8	4							
14	Cancer and other malignant tumors																				
15	Tumors, nonmalignant, or of which the nature																				
16	Chronic rheumatism and gout																				
17	Diabetes mellitus																				
18	Alcoholism (acute or chronic)	18	9	9	0					1	3	2	1								
19	Alcoholism (chronic) and alcoholic poisoning	9	4	5						2	1	3	2	1							
20	Progressive locomotor ataxia																				
21	Paralysis of the tongue	2	2																		
22	Cerebral hemorrhage, cerebral embolism and thrombosis	30	21	18				1	1	1	4	6	11	8	8						
23	Other diseases of the nervous system and of the organs of special sense	0	4	2																	
24	Disease of the eye	157	88	69	7																
25	Other diseases of the circulatory system	0	3	3																	
26	Bronchitis	3	1	2																	
27	Pneumonia	31	17	14	2	4															
28	Pneumonia of the respiratory system (infectious, excepted)																				
29	Bacillary dysentery	4	2	2																	
30	Diarrhoea and enteritis																				
31	Appendicitis	6	6	6																	
32	Inflammation of the liver and biliary passages	14	9	5																	
33	Other diseases of the digestive system	32	20	12	1	1															
34	Nephritis	1	1	1																	
35	Other diseases of the genitourinary system																				
36	Other diseases of pregnancy, childbirth and the puerperal state																				
37	Diseases of the skin and subcutaneous tissue, and diseases of the nails																				
38	Congenital debility and malformations, premature birth and other diseases of early infancy	1	1	0	1	17															
39	Senility	14	12	2																	
40	Violent and accidental deaths (suicide and homicide excepted)	2	2	1																	
41	Violent and accidental deaths (suicide and homicide excepted)	34	20	14	3	1	1	5	4	1	3	10	4	5	1						
42	Violent and accidental deaths (suicide and homicide excepted)																				
43	Violent and accidental deaths (suicide and homicide excepted)																				
44	Violent and accidental deaths (suicide and homicide excepted)																				
45	Violent and accidental deaths (suicide and homicide excepted)																				

Estimated population, 62,000. Total resident deaths, 354. Rate per 1,000 population, 5.4.



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

Abridged International List Number	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	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	ALL CAUSES .....	1398	849	763	77	59	9	26	46	97	108	266	400	300	300	140	21					
1	Typhoid and paratyphoid fever .....	1	1																			
2	Scarlet fever .....																					
3	Shingles .....																					
4	Measles .....																					
5	Scarlet fever .....																					
6	Diphtheria .....																					
7	Whooping cough .....																					
8	Influenza .....																					
9	Plague .....																					
10	Other diseases of the respiratory system .....	53	40	35	8																	
11	Other forms of tuberculosis .....	15	9	6	4																	
12	Malaria .....																					
13	Other infectious and parasitic diseases .....	6	5	1																		
14	Tumors, neoplasms, or of which the nature is not specified .....	228	101	127	5	2	1	4	17	25	62	70	80	40	30							
15	Chronic rheumatism and gout .....	10	8	7	2	1	1	2	3	1	1	1	2	1								
16	Other diseases of the circulatory system .....	1																				
17	Other general diseases and chronic poisonings .....	1	20	14	2																	
18	Progressive locomotor ataxia and general paralysis of the insane .....	28	12	10	1	1	2	3	4	5	7	2										
19	Cerebral embolism and thrombosis .....	3	1	2																		
20	Cerebral embolism and thrombosis .....	142	77	63	6																	
21	Other diseases of the nervous system and of the organs of special sense .....	10	6	4	1																	
22	Disease of the heart .....	97	57	49	3																	
23	Other diseases of the circulatory system .....	42	24	20	2																	
24	Myocardial infarction .....	6	4	2																		
25	Pneumonia .....	87	52	35	7	10	2	1	1	1	14	1										
26	Other diseases of the respiratory system (in- fluenza, bronchitis, etc.) .....	7	4	3																		
27	Diarrhoea and enteritis .....	2																				
28	Amebiasis .....	2																				
29	Diseases of the liver and biliary passages .....	40	24	16	12																	
30	Nephritis .....	52	50	42	7																	
31	Other diseases of the genitourinary system .....	23	21	8	1																	
32	Puerperal septicemia, septicemia, cellulitis and other diseases of the puerperal state .....	3		3																		
33	Diseases of the skin and cellular tissue, and of the bones, joints and soft tissues .....	4	2	2	1																	
34	Complications of pregnancy, childbirth, and puerperium .....	41	21	20	4																	
35	Scalds and burns .....	29	20	9	4																	
36	Violent and accidental deaths (suicide and homicide excepted) .....	8	4	4	2																	
37	Causes of death not specified or ill-defined .....	83	51	32	4																	
38	Causes of death not specified or ill-defined .....	5	2	1																		

Estimated population, 139,700.

Total resident deaths, 1,598.

Rate per 1,000 population, 11.4.

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

Abridged International List Number	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		
						20	4	4	3	40	5	11	24	20	20	40	00	88	04	85	11			
1	ALL CAUSES	404	201	203	75	20	4	4	3	40	5	11	24	20	20	40	00	88	04	85	11			
2	Typhoid and paratyphoid fever																							
3	Typhus fever																							
4	Scarlet fever																							
5	Measles																							
6	Whooping cough																							
7	Diphtheria																							
8	Influenza																							
9	Plague																							
10	Tuberculosis of the respiratory system	15	10	5	1	1	1	1	1	1		4	4	1	1	1	1	1	1	1	1	1	1	
11	Other forms of tuberculosis	2	1	1																				
12	Syphilis	2	2																					
13	Malaria	2	2																					
14	Other infectious and parasitic diseases	42	17	25	5	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
15	Ischemic heart disease	4	1	3	1																			
16	Pneumonia, not specified or of which the nature is not specified	10	4	6	2																			
17	Chronic rheumatism and gout	1		1																				
18	Alcoholism (acute or chronic)	2		2																				
19	Other general diseases and chronic poisonings	2		2																				
20	Progressive degenerative ataxia and general	2		2																				
21	Cerebral hemorrhage, cerebral embolism and thrombosis	39	16	23	9							1	1	1	2	8	10	17	5	1				
22	Other diseases of the nervous system and of the organs of special sense	9	1	8	1																			
23	Other diseases of the circulatory system	139	77	62	17							1	2	9	23	34	29	24	5					
24	Myocardial infarction	14	5	9	1																			
25	Other diseases of the circulatory system	25	13	12	6							2	8	2	3	1	5	2	1					
26	Pneumonia of the respiratory system (infectious, not specified)	2	2																					
27	Other diseases of the respiratory system (infectious, excepted)	2	2																					
28	Diarrhea and enteritis	2	2																					
29	Appendicitis, the liver and biliary passages	2	2																					
30	Other diseases of the digestive system	10	7	3	1								1	4	2	3	2	1						
31	Nephritis	33	24	9	7								1	3	1	3	1	5	9	12				
32	Other diseases of the genitourinary system	19	1	18	1								1	1	1	1	1	1	1	1	1	1	1	
33	Other diseases of pregnancy, childbirth and the puerperal state	9		9																				
34	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion	10	12	7	2	10																		
35	Other diseases of the circulatory system	4	0	4																				
36	Severely injured	4	0	4																				
37	Violent and accidental deaths (suicide and homicide excepted)	41	1	40	1																			
38	Violent and accidental deaths (suicide and homicide excepted)	42	30	12	5	1	1	1	1	3	1	4	0	5	3	6	8	3	3					
39	Causes of death not specified or ill-defined																							

Estimated population, 37,000. Total resident deaths, 484. Rate per 1,000 population, 12.5.

TABULATION OF DEATHS IN SOMERSET COUNTY FOR 1888, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, if other than white	AGE PERIODS																				
						Under 1 year					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
						Under 1 year	1 year	2 years	3 years	4 years	Under 5 years															
1	ALL CAUSES	684	368	316	27	41	4	6	4	8	56	0	10	22	36	57	96	154	143	90	12					
2	Typhoid and paratyphoid fever																									
3	Typhoid fever																									
4	Smallpox																									
5	Measles																									
6	Scarlet fever																									
7	Diphtheria																									
8	Croup																									
9	Influenza																									
10	Plague																									
11	Other infectious diseases of the respiratory system																									
12	Whooping cough																									
13	Syphilis																									
14	Malaria																									
15	Other infectious and parasitic diseases																									
16	Tumors, nonmalignant, or of which the nature is not specified																									
17	Other neoplasms																									
18	Diphtheria and diphtheritic conditions																									
19	Alcoholism (acute or chronic)																									
20	Other general diseases and chronic poisonings																									
21	Progressive locomotor ataxia and general paralysis																									
22	Cerebral hemorrhage, cerebral embolism and thrombosis																									
23	Other diseases of the nervous system and of the organs of special sense																									
24	Diseases of the heart																									
25	Diseases of the circulatory system																									
26	Brachitis																									
27	Pneumonia																									
28	Other diseases of the respiratory system (tuberculosis excepted)																									
29	Diphtheria and diphtheritic conditions																									
30	Anthrax																									
31	Diseases of the liver and biliary passages																									
32	Diseases of the digestive system																									
33	Nephritis																									
34	Other diseases of the genitourinary system																									
35	Puerperal septicemia																									
36	Other diseases of pregnancy, childbirth and puerperium																									
37	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion																									
38	Concussion, laceration and malformations, prematurity and other diseases of early infancy																									
39	Scalds																									
40	Starvation																									
41	Starvation																									
42	Violence, accidental deaths, homicide and suicide																									
43	Violence, accidental deaths, homicide and suicide																									
44	Violence, accidental deaths, homicide and suicide																									
45	Cause of death not specified or ill-defined																									

Estimated population, 72,000.

Total resident deaths, 684.

Rate per 1,000 population, 9.4.





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

Abridged International List Number	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	
						87	5	2	2	3	99	11	34	46	74	142	208	229	212	02	12		
1	ALL CAUSES	1136	622	634	77	87	5	2	2	3	99	11	34	46	74	142	208	229	212	02	12		
1	Typhoid and paratyphoid fever																						
2	Typhus fever																						
3	Smallpox																						
4	Meningitis																						
5	Scarlet fever																						
6	Diphtheria																						
7	Diphtheria																						
8	Influenza																						
9	Pneumonia																						
10	Other forms of the respiratory system																						
11	Other forms of tuberculosis																						
12	Syphilis																						
13	Malaria																						
14	Other infectious diseases																						
15	Other infectious diseases, of which the nature is not specified																						
16	Tumors, nonmalignant, or of which the nature is not specified																						
17	Tumors, nonmalignant, or of which the nature is not specified																						
18	Tumors, nonmalignant, or of which the nature is not specified																						
19	Diabetes mellitus																						
20	Alcoholism (acute or chronic)																						
21	Other general diseases and chronic poisonings																						
22	Paralysis of the limbs																						
23	Cerebral hemorrhage, cerebral embolism and thrombosis																						
24	Other diseases of the nervous system and of the organs of special sense																						
25	Diseases of the heart																						
26	Other diseases of the circulatory system																						
27	Pneumonia																						
28	Other diseases of the respiratory system (tuberculosis excepted)																						
29	Appendicitis																						
30	Other diseases of the digestive system																						
31	Diseases of the liver and biliary passages																						
32	Other diseases of the digestive system																						
33	Other diseases of the genitourinary system																						
34	Other diseases of the genitourinary system																						
35	Other diseases of pregnancy, childbirth and the puerperium																						
36	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion																						
37	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion																						
38	Congenital debility and malformations, prematurity and other diseases of early infancy																						
39	Senility																						
40	Starvation																						
41	Homicide																						
42	Accidental deaths (suicide and homicidal excepted)																						
43	Causes of death not specified or ill-defined																						

Estimated population, 122,800. Total resident deaths, 1,166. Rate per 1,000 population, 9.4.

TABULATION OF DEATHS IN LINDEN CITY FOR 1981, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

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
1 ALL CAUSES	148	81	67	8	0	2	2	1	8	15	2	7	12	29	26	33	14	6	1	.....
2 Typhoid and paratyphoid fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3 Typhus fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4 Shigellosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5 Menses	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6 Meningitis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7 Whooping cough	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8 Diphtheria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9 Influenza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10 Tuberculosis of the respiratory system	16	6	4	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11 Other forms of tuberculosis	2	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12 Syphilis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13 Other infectious and parasitic diseases	11	.....	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14 Adverse effects of drugs and medicaments	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15 Cancer and other malignant tumors	2	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16 Tumors, nonmalignant, or of which the nature is uncertain	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17 Chronic rheumatism and gout	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18 Diabetes mellitus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19 Diabetes insipidus	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20 Other general locomotor ataxia and general paralysis of the insane	5	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21 Cerebral hemorrhage, cerebral embolism and thrombosis	5	2	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22 Other diseases of the nervous system and of the organs of special sense	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
23 Other diseases of the circulatory system	17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24 Bronchitis	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25 Pneumonia	7	4	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26 Other diseases of the respiratory system (tuberculosis excepted)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27 Tuberculosis of the respiratory system (tuberculosis excepted)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28 Diarrhoea and enteritis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29 Appendicitis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30 Diseases of the liver and biliary passages	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31 Other diseases of the digestive system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32 Nephritis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
33 Other diseases of the genitourinary system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
34 Overperal septicemia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
35 Other peral septicemia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
36 Diseases of the perinatal state, pregnancy, childbirth and the puerperal state	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
37 Diseases of the skin and cellular tissue, and of the hair and nails	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
38 Diseases of the heart and organs of locomotion	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
39 Diseases of the ear, nose and throat	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40 Suicide	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41 Homicide	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
42 Violent and accidental deaths (suicide and homicide excepted)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
43 Cause of death not specified or ill-defined	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
44 Cause of death not specified or ill-defined	10	8	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
45 Cause of death not specified or ill-defined	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Estimated population, 26,800.

Total resident deaths, 148.

Rate per 1,000 population, 5.5.

23 Other diseases of the nervous system and of the organs of special sense  
 24 Other diseases of the circulatory system  
 25 Pneumonia  
 26 Other diseases of the respiratory system (tuberculosis excepted)  
 27 Tuberculosis of the respiratory system (tuberculosis excepted)  
 28 Diarrhoea and enteritis  
 29 Appendicitis  
 30 Diseases of the liver and biliary passages  
 31 Other diseases of the digestive system  
 32 Nephritis  
 33 Other diseases of the genitourinary system  
 34 Overperal septicemia  
 35 Other peral septicemia  
 36 Diseases of the perinatal state, pregnancy, childbirth and the puerperal state  
 37 Diseases of the skin and cellular tissue, and of the hair and nails  
 38 Diseases of the heart and organs of locomotion  
 39 Diseases of the ear, nose and throat  
 40 Suicide  
 41 Homicide  
 42 Violent and accidental deaths (suicide and homicide excepted)  
 43 Cause of death not specified or ill-defined

TABLETATION OF DEATHS IN PLAINFIELD CITY FOR 1988, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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
						21	8	2	.....	20	1	9	21	17	30	71	80	80	48	6		
1	ALL CAUSES	404	206	195	40	21	8	2	.....	20	1	9	21	17	30	71	80	80	48	6	.....	
2	Typhoid and paratyphoid fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
3	Typhus fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
4	Smallpox	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
5	Scarlet fever	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
6	Whooping cough	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
7	Diphtheria	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
8	Influenza	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
9	Pneumonia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
10	Tuberculosis of the respiratory system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
11	Other forms of tuberculosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
12	Syphilis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
13	Other infectious and parasitic diseases	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
14	Other infectious and parasitic diseases is not specified	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
15	Cancer and other malignant tumors	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
16	Tumors, nonmalignant, or of which the nature is not specified	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
17	Diabetes mellitus and gout	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
18	Alcoholism (acute or chronic)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
19	Other general diseases and chronic poisonings	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
20	Fractures, dislocations and general paralysis of the insane	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
21	Fractures, dislocations and general paralysis of the insane	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
22	Cerebral hemorrhage, cerebral embolism and thrombosis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

23	Other diseases of the nervous system and of the organs of special sense	7	2	5	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
24	Diseases of the heart	124	67	57	14	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	Diseases of the circulatory system	3	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	Bronchitis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	Pneumonia	14	9	11	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	Other diseases of the respiratory system (tuberculosis excepted)	0	4	2	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	Diarrhoea (excepted)	4	3	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	Appendicitis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
31	Diseases of the liver and biliary passages	16	7	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
32	Diseases of the digestive system	6	4	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
33	Neuritis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
34	Other diseases of the genitourinary system	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
35	Puerperal septicemia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
36	Other diseases of pregnancy, childbirth and puerperium	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
37	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
38	Congenital debility and malformations, prematurity	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
39	Semility	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40	Stillbirth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
41	Abortions (spontaneous and induced)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
42	Violence and accidental deaths (suicide and homicide excepted)	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
43	Causes of death not specified or ill-defined	33	21	12	4	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Estimated population, 37,400. Total resident deaths, 404. Rate per 1,000 population, 10.8.



TABULATION OF DEATHS IN RAHWAY CITY FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, If other than white	AGE PERIODS							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																				
						Under 1 year	1 year	2 years	3 years	4 years																																		
						Under 1 year	1 year	2 years	3 years	4 years																																		
<b>ALL CAUSES</b>																							169	87	82	26	14	7	2	2	11	11	2	1	6	12	37	30	40	10	2			
1	Typhoid and paratyphoid fever																																											
2	Dysentery																																											
3	Shigellosis																																											
4	Scarlet fever																																											
5	Diphtheria																																											
6	Whooping cough																																											
7	Scarlet fever																																											
8	Diphtheria																																											
9	Whooping cough																																											
10	Influenza																																											
11	Pharyngitis																																											
12	Tuberculosis of the respiratory system																																											
13	Tuberculosis of other organs																																											
14	Scrophulous tuberculous																																											
15	Malaria																																											
16	Other infectious and parasitic diseases																																											
17	Tumors, nonmalignant, or of which the nature is not specified																																											
18	Cerebral hemorrhage and softening																																											
19	Alcoholism (acute or chronic)																																											
20	Other general diseases and chronic poisonings																																											
21	Progressive locomotor ataxia and general paresis																																											
22	Cerebral thrombosis, cerebral embolism and thrombosis																																											
23	Other diseases of the nervous system and of the organs of special sense																																											
24	Other diseases of the circulatory system																																											
25	Other diseases of the circulatory system (infectious)																																											
26	Bacterial endocarditis																																											
27	Nonbacterial endocarditis																																											
28	Pneumonia (of unspecified nature)																																											
29	Other diseases of the respiratory system (infectious)																																											
30	Other diseases of the respiratory system (noninfectious)																																											
31	Pneumonia (of unspecified nature)																																											
32	Other diseases of the urinary system																																											
33	Other diseases of the digestive system																																											
34	Other diseases of the genitourinary system																																											
35	Other diseases of the genitourinary system (noninfectious)																																											
36	Other diseases of the skin and cellular tissue, and of the bones and organs of locomotion																																											
37	Other diseases of the skin and cellular tissue, and of the bones and organs of locomotion (infectious)																																											
38	Other diseases of the skin and cellular tissue, and of the bones and organs of locomotion (noninfectious)																																											
39	Stomach cancer																																											
40	Stomach cancer (specify site)																																											
41	Stomach cancer (specify site)																																											
42	Stomach cancer (specify site)																																											
43	Other diseases of the digestive system (noninfectious)																																											

Estimated population, 18,200.

Total resident deaths, 109.

Rate per 1,000 population, 5.2.

TABULATION OF DEATHS IN SUMMIT CITY FOR 1889, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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
						4	2	1	1	1	8	2	1	0	21	20	30	30	20	20	21	2
1	ALL CAUSES	1524	82	70	13	4	2	1	1	1	8	2	1	0	21	20	30	30	20	21	2	
2	Typhoid and paratyphoid fever																					
3	Typhus fever																					
4	Smallpox																					
5	Scarlatina																					
6	Measles																					
7	Whooping cough																					
8	Diphtheria																					
9	Influenza																					
10	Meningitis																					
11	Other forms of the respiratory system																					
12	Syphilis																					
13	Actinomyces																					
14	Other parasitic diseases																					
15	Cancer and other malignant tumors																					
16	Tumors, nonmalignant, or of which the nature is not specified																					
17	Chronic rheumatism and gout																					
18	Dropsy																					
19	Alcoholism (acute or chronic)																					
20	Other general diseases and chronic poisonings																					
21	Progressive locomotor ataxia and general paresis																					
22	Cerebral hemorrhage, cerebral embolism and thrombosis																					

23	Other diseases of the nervous system and of the organs of special sense																						
24	Diseases of the heart																						
25	Other diseases of the circulatory system																						
26	Bronchitis																						
27	Pneumonia																						
28	Other diseases of the respiratory system (tuberculosis and enteritis)																						
29	Diarrhoea and enteritis																						
30	Appendicitis																						
31	Diseases of the liver and biliary passages																						
32	Other diseases of the digestive system																						
33	Nephritis																						
34	Other diseases of the genitourinary system																						
35	Puerperal septicemia																						
36	Other diseases of pregnancy, childbirth and the puerperal state																						
37	Diseases of the skin and cellular tissue, and of the bones and organs of locomotion																						
38	Convulsions and other diseases of early infancy																						
39	Senility																						
40	Strangles																						
41	Violent and accidental deaths (suicide and homicide excepted)																						
42	Violent and accidental deaths (suicide and homicide excepted)																						
43	Causes of death not specified or ill-defined																						

Estimated population, 16,500.

Total resident deaths, 162.

Rate per 1,000 population, 9.2.

TABULATION OF DEATHS IN WESTFIELD TOWN FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH	Total	Male	Female	Color, if other than white	AGE PERIODS																
						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
						Under 1 year	1 year	2 years	3 years	4 years	Under 5 years											
1	ALL CAUSES .....	108	104	94	22	4	1	2	1	8	4	5	11	0	21	40	43	30	21	3		
2	Typhoid and paratyphoid fever .....																					
3	Typhus fever .....																					
4	Smallpox .....																					
5	Measles .....	1	1																			
6	Whooping cough .....																					
7	Diphtheria .....	2	1	1	2																	
8	Infuenza .....																					
9	Tuberculosis of the respiratory system .....	3	2	1	1																	
10	Other forms of tuberculosis .....	1	1																			
11	Other infectious and parasitic diseases .....	1	1																			
12	Syphilis .....																					
13	Other neoplasms .....	1	1																			
14	Cancer and other malignant tumors .....	81	11	20	4																	
15	Tumors, nonmalignant, or of which the nature .....	2	1	1																		
16	Other infectious and parasitic diseases .....	2	1	1																		
17	Chronic rheumatism and gout .....	1	1																			
18	Diabetes mellitus .....	6	2	3																		
19	Alcoholism (acute or chronic) .....	6	2	3																		
20	Other general diseases and chronic poisonings .....	4	2	2																		
21	Paralysis of the larynx, trachea, and general .....	4	2	2																		
22	Cerebral hemorrhage, cerebral embolism and .....	13	6	9																		
23	Thrombosis .....																					

23	Other diseases of the nervous system and of .....	1	3	2																		
24	Diseases of the special sense .....	73	45	28	3																	
25	Diseases of the heart .....	1	1	1																		
26	Diseases of the circulatory system .....	7	8	4	1																	
27	Bronchitis .....																					
28	Pneumonia .....	1	1																			
29	Other diseases of the respiratory system (tu- .....	1	1																			
30	Diarrhoea and enteritis .....																					
31	Appendicitis .....	1	1																			
32	Diseases of the liver and biliary passages .....	1	1																			
33	Diseases of the digestive system .....	14	4	10	5																	
34	Nephritis .....	6	2	3																		
35	Other diseases of the genitourinary system .....	6	2	3																		
36	Preperitoneal septicemia .....	1	1																			
37	Other diseases of the perinatal state, childbirth, and .....	4	3	1	1																	
38	Diseases of the skin and cellular tissue, and .....	4	3	1	1																	
39	Of the bones and organs of locomotion .....	4	2	2																		
40	Of the eye .....	4	2	2																		
41	Of the ear, nose, and throat .....	4	2	2																		
42	Violent and accidental deaths (suicide, and .....	14	10	4	2																	
43	Causes of death not specified or ill-defined .....	2	1	1	1																	

Estimated population, 13,700.

Total resident deaths, 198.

Rate per 1,000 population, 10.5.

TABULATION OF DEATHS IN WARREN COUNTY FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	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	
						27	1	1	1	1	31	4	12	10	22	41	91	103	161	83	11	1	
1	ALL CAUSES	615	322	293	0	27	1	1	1	1	31	4	12	10	22	41	91	103	161	83	11	1	
2	Typhoid and paratyphoid fever	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	Smallpox	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	Measles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	Scarlet fever	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Influenza	3	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	Plague	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Pneumonia of the respiratory system	13	6	7	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	Other forms of tuberculosis	5	3	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12	Syphilis	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13	Malaria	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14	Malaria, malaria and parasitic diseases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	Tumors, nonmalignant, or of which the nature is not specified	6	3	3	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Tumors and other malignant tumors	37	27	10	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	Chorea	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	Chorea, chorea and gout	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	Diphtheria mellitus and gout	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	Alcoholism (acute or chronic)	10	2	8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	Other general diseases and chronic poisonings	13	8	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Paralysis of the brain, spinal cord, and general paralysis of the insane	4	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	Cerebral hemorrhage, cerebral embolism and thrombosis	60	29	31	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0

24	Other diseases of the nervous system and of the organs of special sense	3	1	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	Other diseases of the circulatory system	112	60	52	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Bronchitis	11	6	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
27	Pneumonia	42	23	19	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	Pneumonia of the respiratory system (tuberculosis excepted)	10	7	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	Diarrhoea and enteritis	4	2	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	Appendicitis	3	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
31	Other diseases of the alimentary passages	20	9	11	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
32	Other diseases of the blood	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	Neuritis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34	Other diseases of the genitourinary system	7	5	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	Other diseases of pregnancy, childbirth and the puerperal state	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	Diseases of the skin and cellular tissue, and diseases of the nails and mucous membranes	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
37	Concussional debility and mental depression	14	6	8	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	Concussional debility and mental depression at birth and other diseases of early infancy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	Senility	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	Intoxication	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	Violent and accidental deaths (suicide and homicide excepted)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42	Violent and accidental deaths (suicide and homicide excepted)	33	23	10	0	1	1	1	1	1	8	6	3	1	8	0	1	6	8	1	0	3	1
43	Cause of death not specified or ill-defined	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Estimated population, 51,200. Total resident deaths, 615. Rate per 1,000 population, 12.0.

TABULATION OF DEATHS IN PHILIPSBURG TOWN FOR 1938, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List Number	CAUSE OF DEATH		AGE PERIODS										Color, if other than white	Female	Male	Total							
	List Number	Cause of Death	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
			10	1	1	1	1	1	1	1	1	1					1	1	1	1	1	1	1
1	ALL CAUSES	216	110	106	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
2	Typhoid and paratyphoid fever	1																					
3	Smallpox	1																					
4	Measles	1																					
5	Scarlet fever	1																					
6	Diphtheria	1																					
7	Influenza	2																					
8	Plague	1																					
9	Other forms of the respiratory system	4																					
10	Other forms of tuberculosis	3																					
11	Malaria	2																					
12	Other infectious and parasitic diseases	20	14	12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
13	Tumors, neoplasms, or of which the nature is not specified	1																					
14	Chronic rheumatism and gout	1																					
15	Alcoholism (acute or chronic)	1																					
16	Other general diseases and chronic intoxications	8	7	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
17	Progressive locomotor ataxia and general paresis	1																					
18	Cerebral hemorrhage, cerebral embolism and thrombosis	17	7	10																			
19	Other diseases of the nervous system and of the special sense organs	1																					
20	Other diseases of the circulatory system	42	31	31																			
21	Phthisis	18	10	8	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2		
22	Other diseases of the respiratory system (tuberculosis excepted)	2																					
23	Aneurysm and aneuritis	2																					
24	Other diseases of the liver and biliary passages	5	3	3																			
25	Other diseases of the digestive system	2																					
26	Other diseases of the genitourinary system	4																					
27	Puerperal septicemia	1																					
28	Other diseases of pregnancy, childbirth and the puerperal state	1																					
29	Other diseases of the bones and organs of locomotion	1																					
30	Congenital debility and malformations, prematurity	5	4	5																			
31	Other diseases of early infancy	2																					
32	Suicide	2																					
33	Homicide	1																					
34	Violence and accidental deaths (suicide and homicide excepted)	4	5	5																			
35	Other causes of death not specified or ill-defined	1																					

Estimated population, 20,300.

Total resident deaths, 210.

Rate per 1,000 population, 10.0.

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