

FORTY-FOURTH
ANNUAL REPORT

OF THE

Department of Health

OF THE

STATE OF NEW JERSEY

1921



TRENTON, N. J.
PUBLISHED BY THE STATE

1921

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Department of Health of the State of New Jersey.

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

TRENTON, N. J., June 30, 1921.

To His Excellency Edward I. Edwards, Governor of New Jersey:

Sir: I am transmitting herewith the Forty-fourth Annual Report of the Department of Health of the State of New Jersey for the year ending June 30, 1921, in accordance with chapter 288, of the Laws of 1915.

Very respectfully,

J. C. PRICE, *Director.*

Report of the Director.

No material change has occurred in the personnel of the Department during the past year. The various bureaus continue their activities along similar lines and in a manner which we trust meets public approval.

The Legislature of 1920 passed a new Vital Statistics Act under which the chief of that Bureau became the State Registrar, and is given direct supervision over all local registrars, and the Act makes it mandatory that local registrars shall conform to such rules and regulations as are adopted by the Department. In order to increase the efficiency of the Department many circulars and letters were issued informing them of the necessity of promptly reporting all births. This had a very salutary effect, and a marked improvement was recognized. A few, however, on account of indifference and neglect, were removed and their places filled by others. As a result of this, New Jersey has at last achieved that position for which she has been striving, admission into the United States Registration Area for Births, which comprises those States having proven that ninety per cent. of all births occurring in the State are promptly reported. Special agents of the Government conducted the test covering months of exacting work and tabulating results. This proved that New Jersey had a birth registration rate properly recorded of approximately ninety-five per cent. Every newborn child receives a

handsome certificate of birth and anxious mothers are made happy. All children born in New Jersey are in a sense wards of the State, and it becomes the duty of the State to properly care for its wards. It must know who they are, where they are, and how many there are. To care for its people the State must frequently take stock of its population. It is essential to know their ages, as there are certain limitations for crime for certain ages. It must know the number of children it must educate, it must know accurately ages for graduation from the schools for entrance into certain trades. The only legal way to establish this is the records in the care of the Health Department. There are a few practitioners and drugless healers who refuse to comply with the law. These willful violators place themselves in the criminal class and are worthy of little consideration. The physician who protects his patients at the expense of the community is a bad citizen. Quarantine has its unpleasant and annoying features. The same may be said of taxes and other municipal improvements, but they are burdens which ultimately are beneficial to community life.

The Bureau of Food and Drugs, with the approval of the Department, enforces the Food and Drug Laws, and the milk laws relating to adulteration. It has jurisdiction over cold storage warehouses in order to prevent violation, and also relating to slaughterhouses. Inspectors of this Bureau collect or purchase samples which are analyzed by chemists of the laboratory, and if found to be impure, adulterated, or below the standard requirements of the State, these are referred to the Attorney General for prosecution. There are in the State approximately 10,000 dairies, 175 creameries, 25 cold storage warehouses, and 225 slaughterhouses. These are frequently inspected, and the work is time-consuming. When the Congress was discussing cold storage law for the Federal Government President Wilson called attention to the New Jersey statute as a model one. Foods in cold storage are limited to a period of twelve months. In a few instances extensions have been made for a short period provided the goods are found in a perfect state of preservation. Frequent inspections made have shown

these cold storage plants sanitary and well equipped. The time was extended for the following goods for the year 1920:

<i>Amount of Foods.</i>	<i>Kind of Food.</i>	<i>Period of Exp.</i>
15 bbls.,	Olive Oil,	One month
20 bbls.,	Olive Oil,	One month
189 boxes,	Rabbits,	Three weeks
140 bbls.,	Tongues,	Two months
107 bbls.,	Condensed Milk,	Two weeks
27 tubs,	Pot Cheese,	Two weeks
40 bbls.,	Condensed Milk,	Two weeks
72 bbls.,	Condensed Milk,	Two weeks
30 tubs,	Butter,	Ten days
660 lbs.,	Fish,	Two weeks

The canning factories of this State are under the jurisdiction of this Bureau, and during the past year representatives of the Federal Bureau of Chemistry accompanied our inspectors on a special investigation. From knowledge obtained it is recommended that these factories be licensed by this Department. At the close of the canning season a note from the Chief of the Bureau of Chemistry reads as follows:

"It is particularly gratifying to note the improvements in the industry in your State over conditions which we all know existed a number of years ago, and which improvements are due directly to your Department."

The work in the Laboratory of Hygiene, while similar to that of previous years, has increased by leaps and bounds. The most notable growth has been the increase in the number of Wasserman Specimens which arrive by every post, and at the present rate will number over 12,000 annually. Besides this work there are quantities of food and drug and water samples which require analysis to determine their purity. Diphtheria specimens in increasing numbers are received and examined. The Laboratory is called upon to make examinations for typhoid bacilli from specimens of stools and urine of persons suspected of being typhoid carriers. This is the only way to detect such, and without which they would carry with them pathogenic germs for distribution and inoculation.

Ice cream samples are collected and examined to ascertain the chemical composition and to determine whether they contain other than butter fats.

By an Act of the Legislature of 1921 the Laboratory was requested to examine samples of liquor which are referred to the Department by the Courts, and if found pure and unadulterated they are upon request turned over to the various State institutions. There are other manifold duties which have so handicapped the Laboratory, due to lack of floor space, that it seems impossible to render adequate service to the physicians in the State.

The manner of procuring water samples from public supplies throughout the State has proven very unsatisfactory. These were collected and shipped by express, but their arrival was very uncertain and oftentimes in such condition as to render analysis impossible. They are now secured by one of our inspectors and with the aid of an automobile are delivered in proper shape and at less expense to the State.

It has been said that practically every community may have the degree of healthfulness which it desires to secure and with which it is satisfied. This applies to every branch of the service, but to none more directly than to local health officials. These are appointed by the governing body of the municipality except in townships where the township committee and the assessor constitute the Health Board by virtue of their office. After preparing the town budget and every necessity has been provided for a paltry sum is usually allowed for health work, provided there is anything left of the appropriation, and yet the members of this board are primarily responsible for the health of the community that they are supposed to represent. It is not the men we wish to condemn, but the system, and we can hope for little improvement while the local Boards of Health are constituted as at present. There is a growing tendency for labor boards and boards of education to in a manner supplant in a small way Boards of Health. This is productive of a divided authority and is not conducive to progress.

During the past year there have occurred in New Jersey 339 cases of smallpox, and this is bound to prevail so long as people

are so indifferent and so deaf to the warning that vaccination is the only safeguard. Let the people of New Jersey remember that an unvaccinated community is not immune from the more virulent form. Employers of labor should insist that every employee who has not a satisfactory scar shall be vaccinated, and boards of education should refuse to admit every teacher and every scholar who has not a perfect scar. Must public sentiment be aroused to accomplish the desired result? Public sentiment is what rid San Francisco of the bubonic plague. It assisted New Orleans to free itself of yellow fever. Must New Jersey be aroused from her lethargy in order that her citizens be protected from communicable disease?

One of the purposes of good government is to better the condition of our fellow-citizens, to build up the weak, to prolong life, and to insure sanitary surroundings. Such is the ideal work of the Health Department. To accomplish this, cordial relations must exist—federal State and local. Then let us extend our activities to the highways and particularly to the byways. May our mission be carried to the humble, the homeless, the houseless, and the hopeless. Brushing aside every obstacle, surmounting all difficulties, and achieving success through the cultivation of every element, every virtue that adorns and embellishes humanity.

The charts and tables in reference to births, marriages and deaths which follow are for the calendar year 1920.

During that year the Bureau of Vital Statistics of the State Department of Health received 40,820 certificates of death; 76,431 certificates of birth; 31,327 certificates of marriage, and 3,221 certificates of still-births, a total of 151,799.

Population.—The total estimated mid-year population of New Jersey for 1920 was 3,187,767.

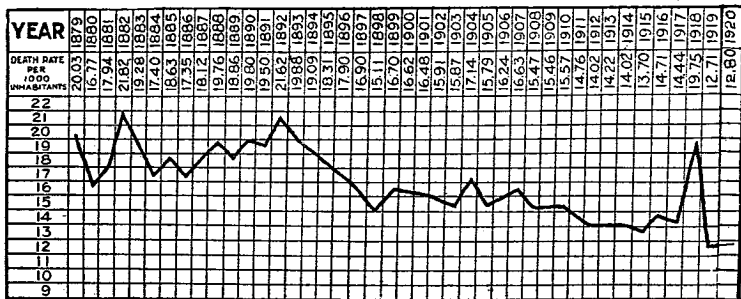
Deaths.—The death-rate for 1920 was 12.80, which is the lowest since 1879, with the exception of the previous year when the rate was 12.71.

Births.—The birth-rate for 1920 was 23.97, which is one point less than those years which were not affected by the war.

Comparative Death-Rate of White and Colored Inhabitants.—The death-rate among the whites for the year 1920 was 12.51, and among the colored inhabitants for the same year 19.78.

Marriages.—The number of marriages recorded for 1920 was 31,327, a decided increase over the previous year. The marriage-rate was 19.65, as compared with 18.61 for 1919.

CHART SHOWING TOTAL DEATHS PER 1,000 POPULATION FOR 47-YEARS.



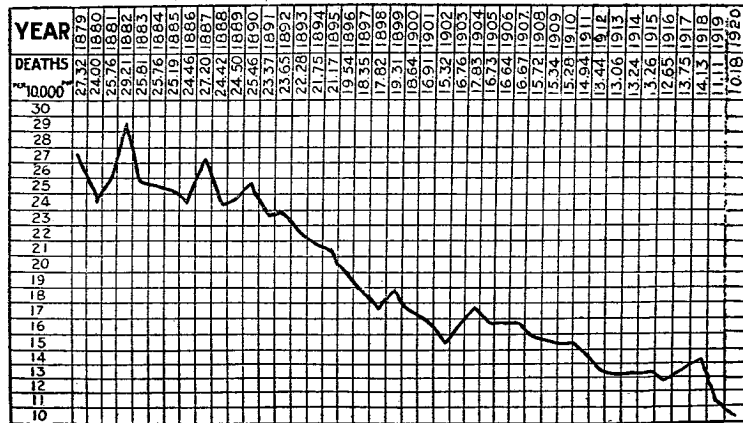
BIRTHS REPORTED, DEATHS UNDER ONE YEAR OF AGE AND DEATHS UNDER ONE YEAR PER 1,000 LIVING BIRTHS.

YEAR.	Births reported.	Deaths under 1 year of age.	Infant mortality rates.
1906	42,677	7,773	182.1
1907	44,651	7,732	173.2
1908	47,405	7,823	165.2
1909	47,508	7,658	161.2
1910	53,942	8,352	154.8
1911	58,133	7,642	131.4
1912	60,073	7,457	124.1
1913	61,432	7,542	122.7
1914	65,403	7,431	113.6
1915	66,476	7,077	106.1
1916	70,211	7,348	104.7
1917	75,309	7,582	100.7
1918	74,549	8,372	112.3
1919	70,935	6,111	86.1
1920	76,431	6,672	87.2

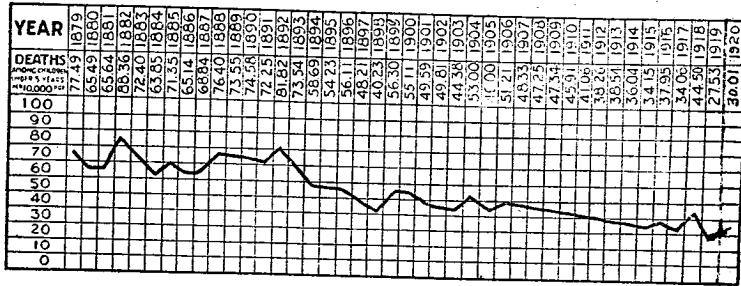
AVERAGE ANNUAL DEATH-RATES, PER 10,000 POPULATION, FROM ALL CAUSES AND FROM TUBERCULOSIS OF LUNGS FOR 42 YEARS, COMPARED WITH RATES FOR 1920.

COUNTIES.	Average annual death-rate from all causes.	Death-rate from all causes, 1920.	Average annual death-rate from tuberculosis of lungs.	Death-rate from tuberculosis of lungs, 1920.
Atlantic County,	159.4	142.3	14.33	10.29
Bergen County,	105.7	108.9	11.58	6.94
Burlington County,	156.5	132.2	15.92	8.96
Camden County,	179.1	138.4	19.32	10.46
Cape May County,	133.7	130.1	11.74	5.65
Cumberland County,	100.1	152.5	17.13	9.56
Essex County,	171.7	127.2	21.50	11.16
Gloucester County,	146.6	143.2	15.45	10.04
Hudson County,	186.0	129.0	21.43	11.01
Hunterdon County,	140.8	150.6	13.68	10.35
Mercer County,	163.8	130.7	20.17	11.38
Middlesex County,	160.2	120.0	14.79	9.04
Monmouth County,	153.2	145.0	14.41	9.86
Morris County,	119.7	134.6	16.93	8.42
Ocean County,	141.3	134.6	16.99	13.95
Passaic County,	163.6	115.0	17.36	9.41
Salem County,	149.3	141.9	16.33	7.01
Somerset County,	141.8	114.9	13.29	7.01
Sussex County,	130.9	151.1	12.68	5.24
Union County,	137.9	121.0	14.41	9.10
Warren County,	144.7	131.1	13.00	10.53
The State,	163.9	128.0	18.03	10.18

DEATHS FROM TUBERCULOSIS OF LUNGS PER 10,000 POPULATION FOR 47-YEARS.

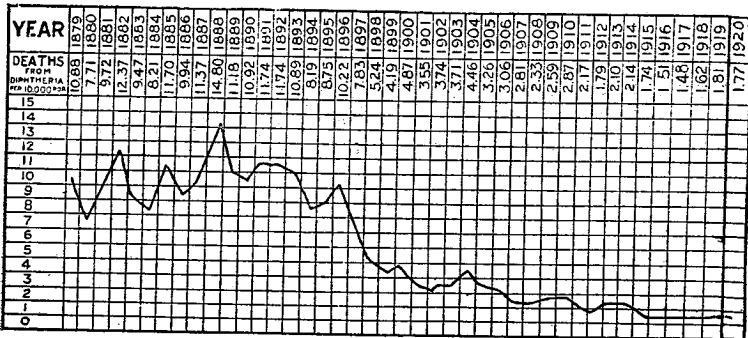


DEATHS UNDER FIVE YEARS OF AGE PER 10,000 POPULATION FOR 44 YEARS.



Diphtheria.—The death-rate from diphtheria for the year 1920 was 1.77, which is almost identical with the 1919 rate, which was 1.81. Deaths in the State during 1920 from that disease, by age periods, follow: Under 1 year, 40; 1 year, 102; 2 years, 77; 3 years, 73; 4 years, 61; 5 to 9 years, 154; 10 to 19 years, 43; 20 to 29 years, 4; 30 to 39 years, 5; 40 to 49 years, 4; 50 to 59 years, 2; 80 to 89 years, 1. Total, 566.

DEATHS FROM DIPHTHERIA PER 10,000 POPULATION FOR 44 YEARS.



Typhoid Fever.—The number of deaths from this disease in New Jersey during 1920 was 101. Of these, 55 were males and 46 females, and 9 belonged to the colored race.

The death rate from this disease for the year 1920 is exactly one-tenth of the rate for 1879, which is the first year of which

there is a record. Deaths by age periods follow: Three years, 1; 4 years, 1; 5 to 9 years, 9; 10 to 19 years, 22; 20 to 29 years, 25; 30 to 39 years, 21; 40 to 49 years, 10; 50 to 59 years, 8; 60 to 69 years, 4. Total, 101.

The following list shows the counties of New Jersey in which deaths from typhoid fever occurred, with the number of such deaths for each. It should be borne in mind that both birth and death statistics published by this Department, are figured according to the actual residence of the deceased; or of the parents of a new born child. Atlantic, 1; Bergen, 4; Burlington, 4; Camden, 8; Cumberland, 2; Essex, 12; Gloucester, 10; Hudson, 23; Hunterdon, 1; Mercer, 7; Middlesex, 4; Monmouth, 3; Morris, 3; Ocean, 1; Passaic, 3; Salem, 3; Somerset, 2; Sussex, 1; Union, 9.

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

	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	Average for ten years.
Registration area of United States...	2.35	2.10	1.65	1.79	1.54	1.24	1.33	1.34	1.23	0.92	1.55
New Jersey,	1.55	1.29	1.22	1.00	0.78	0.65	0.66	0.64	0.52	0.29	0.86

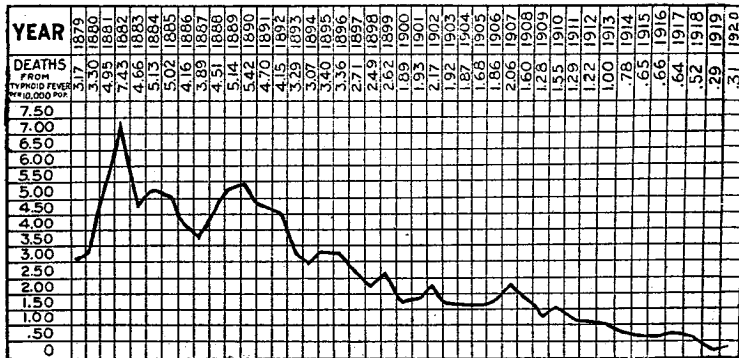
DEATHS FROM TYPHOID FEVER, BY COUNTIES, PER 10,000 POPULATION, FOR 10 YEARS.

COUNTIES.	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	Average for ten years.
Atlantic County,	2.15	1.06	1.14	1.47	0.59	1.59	0.77	0.43	0.42	0.11	1.06
Bergen County,	0.69	0.72	1.00	0.36	0.41	0.63	0.72	0.27	0.16	0.18	0.51
Burlington County,	1.33	3.36	1.59	1.28	1.13	1.11	1.65	1.50	0.94	4.48	1.43
Camden County,	1.23	1.46	1.85	1.20	0.86	1.53	1.08	0.88	0.52	0.40	1.10
Cape May County,	0.40	0.48	1.42	0.22	0.43	1.26	0.41	0.79	.....	.....	0.62
Cumberland County,	1.43	1.06	0.88	1.39	1.04	1.94	1.03	1.88	0.51	0.32	1.03
Essex County,	1.03	0.81	0.66	0.58	0.35	0.43	0.37	0.30	0.20	0.18	0.48
Gloucester County,	3.43	2.60	1.28	1.01	1.49	1.47	0.73	0.95	0.47	0.20	1.36
Hudson County,	0.97	0.72	0.83	0.76	0.63	0.55	0.36	0.30	0.16	0.36	0.56
Hunterdon County,	0.20	1.73	1.37	3.00	0.90	0.30	0.91	0.61	.....	0.30	0.74
Mercer County,	3.89	3.28	1.86	1.45	0.85	0.48	0.61	0.46	0.65	0.43	1.39
Middlesex County,	1.19	1.73	0.96	1.09	0.83	0.51	0.93	0.70	0.67	0.24	0.82
Monmouth County,	2.91	2.87	1.62	1.50	1.68	1.46	1.35	1.71	1.31	0.28	1.66
Morris County,	0.92	0.78	0.25	1.12	0.38	0.37	0.61	0.48	0.36	0.36	0.56
Ocean County,	1.40	1.40	2.32	0.46	0.90	0.90	0.45	.....	0.44	0.45	0.87
Passaic County,	0.76	0.65	0.63	0.52	0.37	0.39	0.35	0.34	0.18	0.11	0.50
Salem County,	2.58	1.10	1.09	0.36	1.08	1.43	1.06	1.06	.....	.....	1.06
Somerset County,	3.32	0.25	.....	0.24	0.24	0.47	1.86	0.69	.....	0.41	0.74
Sussex County,	0.73	0.36	.....	.....	0.36	0.35	0.35	0.69	.....	0.40	0.62
Union County,	0.53	1.61	1.86	0.88	0.62	0.42	0.47	0.52	0.17	0.44	0.83
Warren County,	0.50	0.68	0.59	0.66	1.69	.....	0.42	0.41	.....	0.37	0.87
The State,	1.29	1.22	1.00	0.78	0.65	0.66	0.64	0.52	0.29	0.31	0.73

DEATHS FROM TYPHOID FEVER IN URBAN AND RURAL DISTRICTS FOR 1920.

	Aggregate population.	Deaths from typhoid fever.	Deaths from typhoid fever per population, 10,000.
1920.			
State,	8,187,767	101	0.31
Cities of 5,000 population and above,	2,830,328	67	0.28
Remainder of State,	531,489	34	0.39

DEATHS FROM TYPHOID FEVER PER 10,000 POPULATION FOR 42 YEARS.

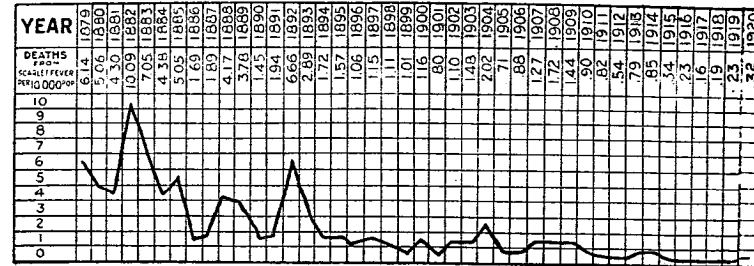


Whooping Cough.—The number of deaths from whooping cough in New Jersey during the year 1920 was 391, a decided increase over the previous year.

The deaths from this disease by ages, were; under 1 year, 205; 1 year, 108; 2 years, 38; 3 years, 19; 4 years, 13; 5 to 9 years, 7; 80 to 89 years, 1.

Scarlet Fever.—The total number of deaths from scarlet fever for 1920 was 103, a slight increase over the previous year. Deaths by age periods follow: Under 1 year, 4; 1 year, 8; 2 years, 17; 3 years, 9; 4 years, 11; 5 to 9 years, 29; 10 to 19 years, 11; 20 to 29 years, 8; 30 to 39 years, 5; 40 to 49 years, 1. Total, 103.

DEATHS FROM SCARLET FEVER PER 10,000 POPULATION FOR 42 YEARS.



Measles.—The number of deaths from measles during 1920 was 297; during the previous year only 58 persons died from this disease. Deaths by age periods follow: Under 1 year, 79; 1 year, 127; 2 years, 35; 3 years, 25; 4 years, 9; 5 to 9 years, 16; 10 to 19 years, 4; 20 to 29 years, 2. Total, 297.

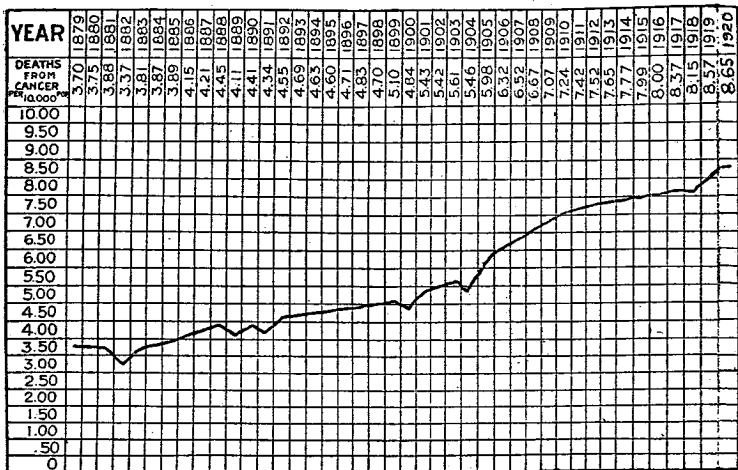
Malarial Fever.—Only 5 deaths occurred from this disease during 1920. The figures which follow and which cover a period of 42 years, show the excellent results obtained by those who have been combating the carrier of the malarial parasite.

1879,	268	1890,	195	1901,	50	1912,	29
1880,	293	1891,	180	1902,	36	1913,	11
1881,	431	1892,	198	1903,	40	1914,	10
1882,	379	1893,	148	1904,	47	1915,	17
1883,	290	1894,	162	1905,	21	1916,	10
1884,	230	1895,	144	1906,	33	1917,	5
1885,	209	1896,	119	1907,	29	1918,	13
1886,	243	1897,	132	1908,	30	1919,	2
1887,	217	1898,	82	1909,	35	1920,	5
1888,	264	1899,	96	1910,	25		
1889,	203	1900,	84	1911,	25		

Smallpox.—No deaths from smallpox occurred in New Jersey during 1920, although mild cases of this disease occurred in various parts of the State.

Cancer.—The number of deaths from cancer and other malignant tumors during 1920 was 2,760. While this figure is only 63 more than the number in 1919, the disease continues to show a gradually increasing rate.

CHART SHOWING DEATHS FROM CANCER PER 10,000 POPULATION FOR 41 YEARS.



DEATHS FROM CANCER AND OTHER MALIGNANT TUMORS IN NEW JERSEY BY ORGAN AFFECTED, 1920.

CANCER AND OTHER MALIGNANT TUMORS.	AGE PERIODS.											Total.								
	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 and over.	
Buccal Cavity.				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	92
Stomach, liver.		1	1																	1001
Peritoneum, intestines, rectum.			1	1	4	6	12	32	47	42	9	9	9	9	6	23	26	7	1	406
Female genital organs.				1	4	6	11	30	45	33	37	114	152	304	205	44	29	29	1	406
Breast.						1	8	19	19	26	33	59	42	33	43	12	12	12	1	403
Skin.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	291
Other organs or organs not specified.	8	1	1	1	4	6	11	13	20	26	54	51	140	107	33	3	3	3	1	77
Total.	9	2	2	12	29	50	110	168	241	314	356	753	527	1000	16	2760				

Suicide.—It is gratifying to note that there was a decrease of deaths by this means from the previous year of 28.

DEATHS BY SUICIDE IN NEW JERSEY, 1920.

MODE OF DEATH.	AGE PERIODS.											Total.								
	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 and over.		
Poison.				2	4	6	6	2	5	3	4	1	4	4	4	4	4	4	1	37
Asphyxia.				4	6	6	7	4	4	10	10	6	13	11	13	14	13	13	1	100
Strangulation.				1	2	2	7	4	7	2	2	2	4	4	5	6	10	1	1	55
Drowning.				1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	22
Firearms.		1	1	4	13	9	25	25	4	4	4	7	12	1	17	6	6	6	1	91
Cutting instruments.					1	2	2	2	1	1	2	2	4	2	5	5	5	1	1	23
Precipitation from height.						2	2	2	2	2	2	2	2	2	2	2	2	2	2	14
Crushing.						1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
Others.						1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
Total.	1	1	12	32	33	27	26	40	28	43	28	52	19	6	1	849				

Bright's Disease.—The deaths attributed to this disease occurring during the year 1920, were 3,369. This number is slightly in excess of the figure for 1919, but is still much lower than previous years, which is probably a reflection of the low death rate now prevailing.

J. C. PRICE,
Director.

Report of Bureau of Administration.

CHARLES J. MERRELL, CHIEF.

The Department has on its payroll, June 30, 1921, a total of 169 employees. These are classified under the various Bureaus as shown below. No money was appropriated by the Federal Government for the work of the Bureau of Venereal Disease Control for the year beginning July 1, 1921, and therefore this Bureau, which has heretofore been maintained in part by Federal funds, will, during the coming year, be supported entirely by State funds, and it will become one of the regular State Bureaus of the Department.

For the purpose of uniformity the Department, at its meeting on January 18, 1921, decided that the Division of General Administration should hereafter be designated as the Bureau of Administration.

Bureau of Administration.—Chief, 6 clerks and stenographers, 1 office boy.

Bureau of Child Hygiene.—Consultant, 1 supervisor of institutions, 3 assistant supervisors, 14 district supervisors, 58 teachers of Child Hygiene, 1 manager of exhibits, 9 clerks and stenographers.

Bureau of Food and Drugs.—Chief, 8 inspectors, 2 clerks and stenographers.

Bureau of Engineering.—Chief, 4 assistant engineers, 1 chemist, 1 inspector, 3 clerks and stenographers.

Bureau of Local Health Administration.—Chief, 2 assistant epidemiologists, 1 district health officer, 1 district health nurse, 8 clerks and stenographers.

Bureau of Venereal Disease Control.—Chief, 1 assistant chief, 1 medical assistant, 1 educational director, 1 field agent, 1 multigraph operator, 2 clerks and stenographers.

Bureau of Vital Statistics.—Chief, 10 clerks and stenographers.

Laboratory of Hygiene.—Chief, 2 bacteriologists, 3 chemists, 6 laboratory technicians, 2 laboratory assistants, 1 motorboat captain, 4 clerks and stenographers.

In addition to the employees noted above the Department has one special ice cream inspector, and a chief of the Bureau of

Medical Supervision who serves as editor of the Public Health News, the monthly bulletin issued by the Department.

On July 1, 1920, Mr. William H. Chew, who had served the Department as a member since July 1, 1908, and as president since 1915, retired, and J. Oliver McDonald, M.D., of Trenton, was elected in his place as president of the Department. Henry Spence, M.D., of Jersey City, was elected vice-president. Mr. Chew rendered the Department most efficient and faithful service during his term of office, and has been greatly missed during the past year. In appreciation of the valuable service rendered by him the Department at its meeting on July 6, 1920, adopted the following resolution:

WHEREAS, William H. Chew, after many years of excellent, intelligent and unselfish labor, has retired as a member of this Department,

Therefore be it Resolved, That we record the great service which he has rendered the State by his practical, untiring and successful Public Health work, and be it further

Resolved, That this Board particularly express regret at the loss of a leader who was always courteous, tactful and effective, and that we remember kindly his fine personality, his genial presence and his loyalty.

Under the provisions of an Act passed at the last session of the Legislature, Chapter 11 of the Laws of 1921, the membership of the Department is increased from eight to ten, and it is provided that the two new members shall be women. The Governor, however, thus far has failed to name those new members.

For the work of the Department during the year beginning July 1, 1920, the Legislature appropriated the total sum of \$401,380.00. This includes an appropriation of \$4,000.00 for legal expenses incurred in the prosecution of the State cases and an appropriation of \$5,000.00 for a sewage investigation to be carried on jointly with the New Jersey Agricultural Experiment Station, pursuant to Chapter 126 of the Laws of 1920. The total amount of the appropriation granted the Department for the year ending June 30, 1920, was \$358,906.22.

The routine work of the Bureau, which will be carried on during the coming year much the same as last year, will be increased by the enlarged appropriation granted the Department, and by the fact that the work of the Bureau of Venereal Disease

Control will hereafter be conducted entirely through this Bureau instead of in conjunction with the Federal Government.

During the year an inventory of all supplies and equipment belonging to the State in the custody of the Department, in the offices and elsewhere throughout the State, has been made, and a report of the same placed on file.

The Bureau has suffered a great loss in the resignation of Edmund R. Outcalt, who has served most efficiently and faithfully as first assistant for over nine years. Mr. Outcalt resigned on June 1 to devote his entire time to the profession of music.

The program of the Eleventh Annual Conference of State and local health officials, which conference was held in the State House, Trenton, on February 25 and 26, 1921, proved very interesting, and the meetings were well attended. Papers were presented or addresses made on the following named subjects: The Work of the District Health Officer, by I. W. Knight, M.D., District Health Officer, Woodbury; Modern Methods for the Control of Epidemics of Diphtheria, by Abraham Zingher, M.D., D.P.H., Assistant Director Research Laboratory, Department of Health, New York City; The Protection of Public Water Supplies, by C. G. Wigley, C.E., New York City; Publicity and Health Work, by E. G. Routzahn, Associate Director Department surveys and Exhibits, Russell Sage Foundation, New York City; The Broader Health Aspects of the Tuberculosis Problem, by Philip P. Jacobs, Assistant Secretary National Association for the Study and prevention of Tuberculosis, New York City; The Proper Allotment of Health Work to the Public Health Service, State Department of Health and Local Boards of Health, by Allen McLaughlin, M.D., Assistant Surgeon General, United States Public Health Service, Washington, D. C.

The Annual Meeting of the Health Officers' Association was held on February 26 following the conference, at which time Mr. Joseph K. Clickenger, of Irvington, was elected president of the Association for the coming year.

On March 2, 1920, William H. MacDonald and Harry P. Croft of the State Department of Health, and Dr. A. C. Bene-

dict representing the Health Officers' Association of New Jersey, were appointed as a Board of Examiners of Health Officers and Sanitary Inspectors for the coming year. Mr. Croft, on account of the pressure of other duties, resigned on January 18, 1921, and Dr. A. C. Benedict resigned at the end of the year. On March 1, 1921, William H. MacDonald was reappointed for the coming year, and Dr. A. Clark Hunt of the Department was appointed a member with Mr. B. H. Obert, of Asbury Park, who represents the Health Officers' Association.

Four examinations have been held during the year ending June 30, 1921. One hundred twenty-seven applicants have been examined, and licenses issued to fifty-five of this number. This includes applicants for license as sewage and water plant operators, as well as health officers, sanitary inspectors of the first, second and third classes, plumbing inspectors, food and drug inspectors, meat inspectors, etc.

The Board upon presenting its yearly report in February, 1921, called attention to the large number of applicants who failed to pass the examinations and the need of a course of study of some character which will enable applicants to properly prepare themselves for the examinations and for the duties of the positions which they seek to secure. This matter has also been taken up by the Health Officers' Association, and a committee of this association together with representatives of the Department is now working on the proposition of establishing either a correspondence course to be carried on through the Department, or a short course of study at one of the educational institutions of the State.

Chapter 10 of the State Sanitary Code containing regulations governing the conduct of camps in the State was adopted by the Department on July 6, 1920. Under its provisions camps are required to be kept and left in a clean and sanitary condition, and it becomes the duty of local health officials to inspect any camp or temporary living quarters within their jurisdiction and to examine into the sanitary conditions of the same.

Chapter 15 of the Laws of 1920 authorizes the State Department of Health to adopt rules and regulations which shall govern the production, distribution and sale of certified milk, and it fixes

standards of purity and quality of said milk. Such regulations when adopted become a part of the State Sanitary Code. In accordance with the provisions of said Act, the Department on November 9, 1920, adopted Chapter 11 of the State Sanitary Code containing regulations governing the production, distribution and sale of certified milk.

Application of John Groot and others for reversal of the decision of the local authorities of the township of Lodi in granting permission to St. Michael's Church of the United Catholic Rite of Passaic to locate a cemetery in said township was presented to the Department on January 4, 1921, together with a report of an inspection of the proposed site of the cemetery made by a representative of this Department. A public hearing was given by the Department on January 18, 1921, to interested persons, at which Michael Dunn, Esq., of Paterson, represented the applicants, and Harry H. Weinberger, Esq., of Passaic, represented the Church. Following this hearing a further investigation of the matter and inspection of the proposed site of the cemetery was made by a member of the Department. A further hearing was later given to Mr. Dunn and to representatives of Lodi Township, following which, in view of the fact that no evidence was brought to the attention of the Department to the effect that the public health of citizens of the State would be endangered by the establishment of the cemetery in question, and as it appeared from reports of representatives of the Department that the site selected was a suitable one for the location of the cemetery in question, the application for reversal of the decision of the Board of Health and Township Committee of Lodi Township in granting permission for the location of this cemetery was unanimously denied by the Department.

In June, 1921, application was made to the Department by the Crematorium Company of America, Inc., the principal office of the company being at 128 Market Street, Newark, for permission to erect and maintain a crematory for the incineration of dead human bodies on a plot of ground adjacent to Fairview Cemetery, on Fairview Avenue, Fairview, Bergen County. A report of an inspection of the proposed site for the erection of the crematory made by a representative of this Department was pre-

sented at a meeting held on June 21, 1921, and it was decided to take up the matter further with the officials of Fairview to learn if there are any objections to the granting of this application. The application is, therefore, pending before the Department at this time.

Legislative bills concerning the following named subjects were approved by the Department for introduction at the 1921 session of the Legislature:

SUGGESTED BILLS.

- Relative to the Pasteurization of Milk.
- To Provide for Standards for Ice Cream.
- To Provide for License of Factories Located on Watersheds.
- To Amend Law Requiring Closing of Toilets on Railroad Trains while Crossing Watersheds.
- To Enable the Department to Make Rules and Regulations Regarding Water Supplies.
- To Amend Law Relating to the Operation of Sewage Treatment Plants.
- To Require Approval of Plans and Specifications for Changes and Improvements Made in Sewerage Systems and Sewage and Water Treatment Plants.
- To Amend Act to Secure Purity of Public Water Supplies in the State.
- To Regulate Discharge of Effluents from Sewage Systems into Potable Water Supplies.

All of the above-named bills became laws except the bill relative to the pasteurization of milk, and the bill to provide for standards of ice cream. Strong opposition developed against both of these bills, but the act providing for standards for ice cream passed both Houses of the Legislature at the last session of the Legislature. The Governor, however, vetoed the same. It is probable that both bills will be introduced at the next session of the Legislature, and it seems quite possible that the bill relating to ice cream at least will become a law.

In addition to the Act above referred to, the following laws of interest to health officials were enacted: Chapter 89, fixing fee for certificate of record of marriage, and making certificate prima facie evidence in court; and Chapter 90, increasing fee to local registrars for transmitting vital statistics records to the State Department; Chapter 96, amending the law relative to filing burial permits by undertakers in counties under 10,000

population; Chapter 79, prohibiting the granting of marriage licenses where either party is affected with certain communicable diseases (Venereal Disease Act); Chapter 71, prohibits altering or destroying labels on packages showing time food was placed in cold storage; and Chapter 262, providing that local health officers and inspectors shall be removed only for cause after five years' consecutive service.

Report of Bureau of Medical Supervision.

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

This Bureau has for its objective the establishment and maintenance of co-operative relations between the State Department of Health and the medical profession of the State. It is also charged with the editing of the Public Health News, and has representation on the Board of Examiners for Health Officers and Sanitary Inspectors.

The medical profession of the State during the past year has by the appointment of an active legislative committee and the attendance of many physicians at legislative hearings gained the recognition of the Legislature, and is now in a position to effectively oppose harmful legislation on medical or sanitary subjects, and aid in the adoption of constructive laws on these subjects. At many of the meetings last year the representative of the State Department of Health was assured that the medical men were desirous of aiding the Board in the passage of laws for the improvement of health conditions throughout the State and would use their influence in securing the adoption of the laws which were favored by the Department. Under the present arrangement we can be assured in the future of the hearty co-operation of the medical fraternity which has always desired to assist although severely handicapped by lack of proper organization.

The Public Health News, which is the official organ of the Department, has been published each month with one or two exceptions. The increased cost of paper and labor has almost doubled the cost of printing the News, and toward the end of the fiscal year it became necessary to combine two monthly numbers in one number that the cost might come within the appropriation.

The News has been well received, and letters from interested readers would indicate that it has a value as the disseminator of

information which is appreciated by the public. The policy of the News throughout has been to inform the people of the State of the various activities of the Department and to present leading articles on subjects of timely interest to sanitarians and local boards of health. This policy will be continued and an effort made to secure more material relating to the actual experiences and accomplishment of local boards of health.

The State Board of Examiners of health officers and sanitary inspectors is constituted under an act of the Legislature which forbade the appointment of anyone to the employ of local boards of health without a certificate from the State Department of Health, the only exception being in the case of clerical assistants.

The Board of Examiners has been in existence for many years, and although there has been a slight improvement in the class of men appointed to act as health officers and sanitary inspectors, the progress in this direction has been far from satisfactory. The number of applicants failing to pass the examinations is large owing to the lack of preparation by a study of the subject, and the fact that there is no available course of instruction in our State on the subjects relating to sanitary science.

From its experience during the past year the Board of Examiners concludes that if the number of applicants for licenses who appear for examination and are successful is to be increased, one of three possible courses may be followed:

1. The examinations may be made more simple. The Board is, however, of the opinion that this should not be done. The examinations as given have been fair and sufficiently simple. If the examinations are made still more simple, the knowledge and ability of the applicant will not really be tested, and the quality of the public health work carried on throughout the State will thereby suffer.

2. The positions should be made to appeal to better trained persons. It is the very decided opinion of the Board that herein is the true solution of the problem. As has been stated, it is also felt that the one thing which will do most toward bringing this about is an increase in the amount of the compensation allowed generally to health officers and sanitary inspectors. That much

difficulty will be encountered before this is accomplished is fully realized, and it may necessitate a change from the present method of employment of health officers and perhaps in the organization of local boards of health and the size of sanitary districts.

3. A correspondence course for the assistance of applicants should be conducted.

Meantime, as an expedient, until such time as better trained individuals are attracted to positions of health officer and sanitary inspector, there should be available to any applicant a correspondence course of instruction. The course should be as fundamental as possible in character, and it should be sufficiently comprehensive to include both general principles, and the method of applying these principles to a few concrete cases. This course should extend over about eight weeks and should be divided into certain general groups of subjects, one group to be taken up each week, and there should be a quiz each week on the subjects considered that week, and in the final week, there should be given a general quiz to cover the entire course of study.

Report of the Bureau of Local Health Administration.

D. C. BOWEN, CHIEF.

Since one of the main duties of the Bureau of Local Health Administration is to co-operate with officials of local boards of health in solving their problems and enforcing the regulations of the State Sanitary Code, and since these regulations have to do with nearly every phase of administrative health work, and there are more than five hundred such boards in the State, it is obvious that the Bureau has many diversified problems presented to it for solution during the course of a year. In fact with but four field workers in addition to the Bureau Chief, it has not been possible on all occasions during the past year to respond as promptly as we should like to requests that local officials have made for assistance of this kind.

While the law requires that the State Board of Health shall enact a State Sanitary Code, the duty of enforcing the regulations which it contains devolves on local health officials. However, it rests with the State Department of Health, through the Director, to see to it that local health officials perform their duty in this respect. This is one of the most difficult tasks that is given to the Bureau of Local Health Administration to perform, and one in which it most frequently fails, mainly because of the inefficiency of local boards of health in townships and in many small municipalities throughout the State.

If the increasing frequency with which officials of these Boards apply for assistance from the State Department of Health, particularly for aid in the control of epidemics and in preventing the spread of communicable diseases from localized outbreaks and sporadic cases, could be taken as proof positive of an actual improvement in the quality and amount of work that they are doing, it could be truthfully said that much improvement is being

made in this direction, for the number of such requests has steadily increased during recent years. However, no such deduction is warranted. That greater activity on the part of many local health officials is being shown is undoubtedly true, but this does not necessarily mean a corresponding improvement in the quality of work that is being done, although this naturally should and doubtless will follow in due time. This improvement cannot be expected until some decided changes have been made in our present health laws that will place all local health administrative work on a scientific basis.

The awakened interest that is being shown by local health officials in the small municipalities may be attributed, in part at least, to a keener realization on the part of the public that the morbidity and mortality rates from preventable diseases can and should be substantially lowered by the proper functioning of local health departments. This is indicated at least by the increasing frequency with which private citizens lodge complaints with the State Department of Health alleging neglect on the part of local health officials. The alleged neglect consisting mainly of failure on the part of the local board to establish proper isolation or quarantine or to abate nuisances supposedly prejudicial to health, and in most instances the complaints are well founded.

With public support to stimulate the activities of local health officials, it might be assumed that there would be less demand for the State Department of Health to participate in matters that should be handled locally. On the contrary, the reverse is true, and in all probability will continue to be true until a more efficient system for conducting local administrative health work in townships and in the numerous smaller municipalities through-out the State has been established.

During the calendar year 1920, 105,311 cases of illness due to diseases classified as preventable were reported to the State Department of Health, resulting in 11,668 deaths. No inconsiderable amount of this sickness might have been prevented through an earnest and wisely directed effort on the part of local boards of health. This would have resulted in a corresponding reduction in the mortality from these causes. Nearly seven thousand cases of diphtheria reported, and five hundred sixty-eight deaths at-

tributable to this disease alone during the calendar year 1920, can hardly be regarded as a creditable record, and especially so since it is now relatively a simple matter to identify those who are susceptible to this disease and to render such persons immune by vaccination. Over six hundred reported cases and one hundred deaths from typhoid fever during the year is also a testimonial to the fact that the measures applicable to the prevention of this disease have not been applied by local health officials with a degree of thoroughness and understanding that they should have been. Measles, whooping cough, and scarlet fever, from which the combined morbidity totaled 40,124 reported cases, and resulted in 794 deaths during the year, are likewise preventable to a degree that warrants the judicious expenditure of more time and money than has been devoted to this purpose. The same is true in respect to several other endemic diseases. However, as already pointed out this control is not likely to be exercised by local health organizations as now constituted in a considerable majority of the municipalities in the State, principally because of the fact that they are not large enough to finance a health department having the personnel and equipment that is necessary to do effectual work.

By the provisions of Chapter 68, Laws of 1887, each political subdivision of the State constitutes a separate sanitary district. Each district is required to have a local board of health or other executive body invested with the power and charged with the duty of enforcing regulations for the prevention of disease and promotion of the public health. In incorporated municipalities, except in a comparatively small number of those under commission form of government, and in which the commissioners take unto themselves the functions of a local board of health, health laws and sanitary regulations can only be enforced by a local board of health appointed by the governing body of the municipality. The members of these boards serve without pay. They cannot, therefore, be expected to give their time and personal attention to the performance of daily routine work connected with an efficiently managed health department, even if possessed of the technical training and experience to enable them to do so. In townships, members of the township committee together with

the assessor and one physician appointed by the township committee, constitute the local board of health. Therefore, irrespective of its territorial size or the number of its inhabitants, each political division of the State constitutes a separate sanitary district, in which district, if the mandates of the law are complied with, there must exist a local board of health or body charged with putting into operation the provisions of the statutes relating to the health of the inhabitants of the State. However, there is quite a difference between a local board of health and a local health department. These terms are not synonymous, as is so often taken for granted. A health department might get along very well without a board, but the board can accomplish little toward carrying out the purposes for which it was created without first providing itself with the organization and equipment that is necessary to do the actual work. It is with the officials that constitute these local boards of health that this Bureau has to deal in performing many of the duties placed upon it, particularly those relating to the enforcement of laws and the regulations of the State Sanitary Code.

There are but few municipalities in the State having a population of 25,000 or under in which sufficient money is appropriated for public health purposes to defray the cost of maintaining an efficient health organization. In fact there are many with a population greatly in excess of these figures in which this holds true. Granting that all municipalities in the State having 25,000 inhabitants or more were maintaining health organizations capable of applying modern scientific methods for the prevention of disease and promotion of the public health, there would then be four hundred and ninety-one sanitary districts in which the populations are too small to support a public health program modelled along broad and comprehensive lines, on a per capita appropriation that would not be regarded as excessive. By reference to the following Table it will be seen that nearly one-half of the population of the State is distributed in Townships and incorporated municipalities having less than 25,000 population:

TABLE I.

TABLE SHOWING THE NUMBER OF LOCAL SANITARY DISTRICTS IN NEW JERSEY, CLASSIFIED ACCORDING TO POPULATION GROUPS, TOGETHER WITH THE ESTIMATED POPULATION IN EACH GROUP.

<i>Incorporated Municipalities.</i>	<i>No. in Groups.</i>	<i>Population.</i>	<i>Totals.</i>
Over 100,000,	5	1,083,759	
50,000—100,000,	6	405,818	
25,000—50,000,	10	312,932	
	—	21	1,802,509
15,000—25,000,	9	166,939	
10,000—15,000,	14	176,048	
5,000—10,000,	54	363,303	
	—	77	706,290
4,000—5,000,	19	84,933	
3,000—4,000,	30	103,043	
2,000—3,000,	63	156,080	
1,000—2,000,	147	213,171	
Less than 1,000,	155	85,167	
	—	414	642,394
Totals,	512		3,151,193

How to extend to the inhabitants of the smaller communities and rural districts relatively the same degree of public health protection that is enjoyed by those who dwell in the larger municipalities that are maintaining well equipped and smoothly functioning health organizations is a public health problem that calls for solution. That a real need exists for such service is obvious from a study of morbidity and mortality statistics, as well as from the actual sanitary conditions that exist in rural districts, and likewise in some urban communities. It is doubtful if a satisfactory solution of this problem will be found short of doing away with the small sanitary district and establishing in its stead districts large enough to make the employment of full-time health officials an economically sound proposition.

While it is permissible under the present law for adjacent municipalities to join in the employment of the same health officer, very few municipalities have embraced the opportunity to improve matters by co-operating in this manner, principally because of the many petty difficulties that are encountered. To do this successfully would probably necessitate amending the

present statute laws under which local boards of health are organized. Whatever the remedy, this is a matter that should receive careful consideration by those who desire to see health work in small communities and rural districts throughout the State conducted in an efficient and economic manner.

District Health Officers.—In the annual report of this Bureau for the year ending June 30, 1920, there appeared a somewhat detailed account of the work conducted during the preceding nine months in Sanitary District No. 1. This means of co-operating with local health officers had proven so satisfactory that a recommendation was made that this district should not only be continued but that other Sanitary Districts be established throughout the State as soon as funds could be secured for that purpose. A careful study of the results accomplished in District No. 1 during the present year, as set forth in detailed monthly reports submitted by our District Health Officer, will confirm the wisdom of that recommendation.

By dividing the State into six districts, it was estimated that about \$36,000 would defray the expense of extending this service to the entire State, thereby making it possible for the Department to carry on much of its work more efficiently and relatively more economically. As you are aware, when submitting an estimate of the amount believed to be necessary to properly carry on the work of this Bureau during the fiscal year beginning July 1, 1921, this item was included. In the Department's summary of budget requests for appropriation for the fiscal year 1921-1922 that was submitted to the Governor, it apparently failed to receive favorable action at the hands of the Budget Committee. There was allowed for this work, however, a sufficient sum to take care of the Health District already established, plus \$3,000 for the salary of one additional District Health Officer. This money became available on July 1, 1921.

In addition to the regular routine work carried on in Sanitary District No. 1 during the past year, special efforts were made to lower the morbidity and mortality rates from diphtheria which was unduly prevalent throughout the State during the fall and winter months. This included more extended use of the laboratory by physicians in making diagnoses in suspected

or doubtful cases and for identifying carriers of virulent diphtheria bacillus among school children, particularly when dealing with outbreaks in the public schools; the taking of cultures to determine the period of isolation for known cases of diphtheria, and in popularizing the Schick Reaction and Immunization with toxin anti-toxin which together undoubtedly constitute the greatest advance that has been made in the control of diphtheria since the introduction of antitoxin as a therapeutic remedy in the treatment of this disease.

In co-operation with local boards of health and boards of education in the control of outbreaks of diphtheria last year, the Schick Test and Immunization with toxin anti-toxin was offered in three public schools in Sanitary District No. 1. Seven hundred and two individuals applied for and were given the test and 430 who showed a positive reaction were given toxin anti-toxin. An effort will be made during the coming school year to have this work taken up in other schools by local boards of health and public school officials, with such necessary assistance as we may be able to give.

District Health Nurse.—Failing to procure additional district health officers last year, a District Health Nurse was continued in Burlington County to co-operate with local health officials by aiding in the enforcement of sanitary regulations in the territory that was formerly known as "Camp Dix extracantonment zone." The character of the work that this nurse has been doing has more closely conformed to that required of a District Health Officer than it formerly did. Until such time as it will be possible to include Burlington County in a district supervised by a full-time District Health Officer, it is my judgment that this nurse should not be removed.

Epidemic Diseases.—To participate in field investigations concerning the prevalence of communicable diseases and to take charge of epidemics being foremost among the duties placed upon the Bureau of Local Health Administration, work of this character is always given precedence over other activities. During the past year the Bureau has assisted local health officials in the control of outbreaks and epidemics of greater or less magnitude

in eighty-nine separate municipalities. In many of these municipalities assistance of this nature has been rendered on repeated occasions.

Smallpox has been unusually prevalent during the year, cases having been reported in twenty municipalities, in fourteen of which officers from this Bureau have assisted local health officials in making epidemiological investigations, establishing diagnoses in disputed or doubtful cases and in carrying out measures of control. Without exception these outbreaks and epidemics were due to the prevailing mild form of smallpox from which the fatality rate is practically nil, and that is now endemic in many parts of the United States and is likely to become so in New Jersey unless vaccination becomes more popular with the general public than it has been in recent years. That no deaths resulted from the three hundred thirty-nine cases of smallpox that are known to have occurred in New Jersey since the beginning of the fiscal year ending June 30, 1921, is not at all surprising, considering they were all due to this mild strain of infection.

Owing to the frequency with which errors in diagnosis are made, particularly in the early stages of the eruption in this mild type of smallpox, the infection not infrequently becomes wide-spread in communities in which it appears before the existence of the disease is brought to the attention of the local health authorities. When this occurs in a densely populated district, eradication of the disease is a rather tedious and costly matter, owing to the many new foci of infection that are established by cases that escape early detection. Where the population is congested, this mild type of infection is more difficult to control than is virulent smallpox, in which the high mortality rate usually acts as a strong incentive in determining persons to voluntarily seek vaccination, thus reducing the number of susceptible persons in the community to a point where the disease dies out of its own accord.

The most extensive of the outbreaks of smallpox that occurred during the past twelve months was restricted to what is known as the Metropolitan District in the northern part of the State, adjacent to New York City. In this epidemic two hundred ninety-

one cases were investigated by this Bureau. These were located in twelve municipalities in Hudson and Bergen Counties. It is quite probable that other cases occurred that were overlooked by our investigators and of which no official record has been made. There was also a number of cases reported in New York City from infections alleged to have been contracted in New Jersey. The onset of the earliest case in this epidemic, of which a clear history was obtained, was December 8, 1920, and the last case gave the date of onset as May 21, 1921.

Of the two hundred ninety-one cases investigated one hundred sixty-nine occurred in residents of West New York where the epidemic appears to have started as far back as December, 1920. The infection gradually spread to other municipalities and the epidemic increased in severity until March 15, when the State Department of Health first took an active part in the enforcement of preventive measures. Following the week ending March nineteenth, during which thirty-nine cases are known to have developed within the infected area, there was a steady diminution in the number of new cases reported from week to week until the epidemic was over.

The chief factors in bringing about this result were: First, the thoroughness with which boards of education in most of the infected municipalities enforced the provisions of the school law which provides that unvaccinated scholars and teachers shall be excluded from the public schools. The parochial schools in these municipalities responded quite as promptly as did the public schools when the State Board of Health recommended and strongly urged boards of education to enforce the school law in this respect; Second, free vaccination clinics established by local boards of health expressly to meet this emergency, and the active campaign that was carried on to induce as many persons as possible to go to their own physician and be vaccinated; Third, the exhaustive and thorough epidemiological work that was done by the temporary organization which was gotten together with the emergency appropriation made by the State House Commission. If the request that was made for this appropriation had not been granted there is little doubt but

that the epidemic would have gained much larger proportions than it did before local health organizations in the infected districts would have been able to check it, and smallpox would most probably have become endemic over a large area in the most densely populated section of the State.

The vaccinal status of the patient was secured in two hundred eighty-eight of the two hundred ninety-one cases of smallpox that was studied in this epidemic. Of these two hundred eighty-eight cases only fourteen (4.9%) had ever been vaccinated. The shortest length of time elapsing between the date vaccination was performed and the date of onset was 13 years and the longest 60 years.

In addition to the epidemic prevalence of smallpox in Hudson and Bergen Counties, isolated cases and small localized outbreaks have been reported from six other counties during the year. In these outbreaks a total of fifty cases are known to have occurred. While the infection causing a number of these cases was shown to have been contracted in other States, the majority of them are believed to have been due to infections contracted from undiscovered sources in New Jersey, indicating that smallpox has been more prevalent in the State during the past year than appears from officially reported cases.

Typhoid Fever.—Outbreaks of typhoid fever were investigated in twenty-two municipalities during the year. In seventeen cases that occurred in Hillsdale Township and the Borough of Westwood, the vector of infection was definitely traced to milk produced on a dairy on which one of the dairy workers was ill with typhoid fever for a week or more before a definite diagnosis was established. Two of these cases proved fatal. Six cases that occurred in Chatham and Livingston Townships were likewise traced to the consumption of raw milk produced on a small dairy on which a chronic typhoid carrier was located. Fourteen cases investigated in the Training School at Vineland were believed to have been due to food infected by a worker in one of the kitchens who proved to be a urinary carrier. Contact infection is believed to have been responsible for seventeen cases

that occurred in the New Jersey State Institution for Feeble-Minded at Vineland.

The average indicated case incidence for typhoid fever in New Jersey for the years 1916-1920 inclusive, was 29.6 per 100,000 population, against a yearly average of 61.7 for the preceding five years. The average yearly death rate from this disease for the years 1916-1920 inclusive, was 4.8 per 100,000 population, against 9.7 for the preceding five year period. This substantial diminution in the case incidence and death rate from typhoid fever in recent years is probably very largely due to the following factors: (a) closer supervision over public water supplies, (b) the more extensive pasteurization of market milk, (c) keeping recognized cases of typhoid fever under observation until laboratory examinations of bodily discharges indicate that the patient is no longer infectious.

Insanitary privies in rural districts and in unsewered urban communities constitute one of the important factors in the spread of typhoid fever in New Jersey today. While the maintenance of such a privy is in direct violation of a Regulation contained in the State Sanitary Code, adopted in 1917, and which it is the duty of all local health officials to enforce, little real progress has been made in bringing about this much needed sanitary reform in rural districts. And there is not much indication that unsanitary privies that abound in rural districts will give way very rapidly to safer methods of disposal of human feces through any pressure that township boards of health are likely to bring to bear on those who maintain them.

Next to improper disposal of fecal matter, the chronic typhoid carrier has probably been responsible for more typhoid fever cases in New Jersey during recent years than any other one factor. No practical method of dealing with this most difficult problem in the control of this disease has yet been found.

TABLE II.

REPORTED CASES AND DEATHS FROM TYPHOID FEVER IN NEW JERSEY FROM 1919 TO 1920, INCLUSIVE; REPORTED CASES AND DEATHS PER 100,000 POPULATION, AND THE INDICATED FATALITY RATE BASED ON REPORTED CASES AND DEATHS.

Year.	Cases.	Deaths.	Cases per Deaths per		
			100,000	100,000	Per Cent.
			Pop.	Pop.	Fatality.
1919,	1,268	301	53.9	12.7	23.73
1910,	1,134	392	40.7	15.4	34.56
1911,	1,617	337	61.8	12.9	20.84
1912,	2,024	306	75.3	11.3	15.11
1913,	1,825	276	65.9	9.9	15.12
1914,	1,604	222	56.4	7.8	13.84
1915,	1,425	207	50.0	7.2	14.52
5-year average,	1,699	269	61.7	9.7	15.83
1916,	1,390	194	47.1	6.5	13.97
1917,	1,151	191	38.1	6.3	16.59
1918,	739	162	23.9	5.2	21.92
1919,	617	92	19.5	2.9	14.91
1920,	657	100	20.7	3.2	15.22
5-year average,	910	148	29.6	4.8	16.24

Infectious Diseases on Dairy Premises.—Investigations were made during the year on ninety-six dairy premises upon which infectious diseases transmissible through milk were reported to the State Department of Health. Cases were reported on dairies located in fifty-eight separate municipalities and eighteen counties. The total daily production of milk on these dairies amounted to 9,952 quarts. The diseases reported were: diphtheria, forty clinical cases and one carrier; scarlet fever, seventy-one cases; typhoid fever, eight cases; tuberculosis, six cases. Prohibition of the sale of milk or other dairy products was found necessary on only eight of these premises. Insofar as is known, no case of contagious disease was contracted through the use of milk produced on any of the dairies subsequent to the arrival on the premises of an epidemiologist from the Bureau of Local Health Administration, although a rather serious outbreak of typhoid fever was caused by the consumption of raw milk that was produced on one of them before our epidemiologist arrived.

Co-operation with Local Health Officials.—In the last annual report, it was pointed out that the Bureau would be unable to

expand its activities until additional field workers were provided. It was hoped that the personnel of the Bureau would be increased by the employment of several district health officers at the beginning of the last fiscal year. As stated in the opening paragraphs of this report, local health officials as well as private citizens are appealing to the State Department of Health for advice and assistance in handling local health problems with increasing frequency. Many of these problems that are referred to this Bureau are of a character that makes it necessary to send an expert into the field. The volume of this kind of work increased during the past year to a point where the Bureau was at times unable to meet the demands made upon it. Under these circumstances, we have been obliged at times to refrain from extending such aid in many cases where it was not only proper but highly desirable that it should have been given. In doing this, discretion was exercised in determining what particular work should have the preference. It is quite probable, however, that our decision was not always wise, since in some cases it is not possible to determine which piece of work is of the most importance from the standpoint of public health until it has been completed.

Morbidity Reports for the Calendar Year 1920.—During the calendar year 1920 a total of 105,465 reports of cases of reportable diseases were received and tabulated in the Bureau of Local Health Administration. This was an increase of nearly 31,000 over the preceding year. Although the number of morbidity reports showed this large increase, the number of deaths recorded from the same diseases for 1920 showed a decrease of about 600 over the preceding year.

The following diseases showed an increased prevalence, as indicated by the case rate per 1,000 population, for the calendar year 1920 over the year 1919: Scarlet fever, typhoid fever, measles, whooping-cough, influenza and pneumonia. Diseases showing a decreased prevalence during 1920 were diphtheria, chickenpox and smallpox. Rates for cerebrospinal meningitis and malaria for 1920 were identical with those for 1919.

Diphtheria.—There were 6,931 cases and 568 deaths from diphtheria reported in 1920, showing a decrease from 1919,

the figures for which were 7,270 cases and 572 deaths. However, the indicated fatality rate increased from 7.86 in 1919 to 8.19 in 1920.

Chickenpox.—During 1920 there were 5,146 cases and 3 deaths from chickenpox reported against 6,245 cases and 8 deaths in 1919.

Scarlet Fever.—The year 1920 was marked by an increase in the prevalence of scarlet fever, and also an increase in the indicated fatality rate. However, as this disease was widely prevalent throughout the State in a mild form it is believed that the increase in fatality is more apparent than real, many mild cases being unreported.

There were 4,782 cases and 103 deaths from scarlet fever reported during 1920, and 4,240 cases and 70 deaths in 1919. The morbidity rate per 1,000 population in 1920 was 1.51 against 1.34 in 1919 and the indicated fatality rate in 1920 was 2.15 against 1.65 in 1919.

Measles.—Measles took place during 1920 as the most prevalent of all reportable communicable diseases except influenza. The case rate per 1,000 population was 8.75 following a low rate of 1.51 in 1919. Although this disease showed a large increase in prevalence the indicated fatality rate dropped to 1.07 from 1.15 in 1919. There were 27,642 cases and 297 deaths recorded in 1920 against 4,774 cases and 55 deaths in 1919.

German Measles.—German measles were slightly more prevalent in 1920 than in 1919, a total of 457 cases and no deaths being reported in 1920 against 351 cases and 3 deaths in 1919.

Whooping Cough.—Whooping cough showed a large increase in prevalence during 1920, the morbidity rate per 1,000 population being 2.43 against 0.59 in 1919. There were 7,700 cases with 394 deaths reported in 1920 against 1889 cases and 89 deaths in 1919. The indicated fatality rate increased from 4.71 in 1919 to 5.11 in 1920.

Influenza.—During the year 1920 there were 29,110 cases and 1,173 deaths from influenza reported. In 1919 there were 22,544 cases and 2,483 deaths reported. It will be noted that although more cases were reported in 1920 than in 1919 there were fewer deaths charged to influenza in 1920 than in 1919.

Rates based on reported cases of this disease are obviously of little value.

Pneumonia.—There were more cases and deaths from pneumonia reported in 1920 than in 1919, the figures being as follows: 1920, cases 9401, deaths 5050; 1919, cases 7017, deaths 4545.

Meningitis, Epidemic Cerebrospinal.—In the calendar year 1920 there were 134 cases and 100 deaths reported from epidemic cerebrospinal meningitis, against 149 cases and 82 deaths for 1919. The fatality rate in 1920 was 74.62 and 55.03 in 1919.

Typhoid Fever.—For the first time since 1912 typhoid fever shows an increase in the number of reported cases and deaths. There were 657 cases and 100 deaths from typhoid fever reported in 1920 against 617 cases and 92 deaths for 1919. The indicated fatality rate for 1920 was 15.22 and for 1919 it was 14.91. The case rate per 1,000 population for 1920 was 0.20 a slight increase over 0.19, the rate for 1919.

Smallpox.—During the calendar year 1920 there were 182 cases and no deaths from smallpox reported, an increase of 73 cases over the number reported during the previous year, which was 109. Owing to the mild type of the disease which prevails many cases are not reported.

Malaria.—There were 106 cases and 5 deaths from malaria reported during 1920 against 124 cases and 2 deaths in 1919. Field investigations made of the prevalence of this disease indicate that many cases are not reported.

Tuberculosis.—During 1920 there were 6,055 cases and 3,625 deaths from tuberculosis reported, giving an indicated fatality rate of 59.86 against a rate of 51.20 in 1919 in which year there were 7,460 cases and 3,829 deaths from this disease recorded. The case rate per 1,000 population for 1920 was 1.91 against a rate of 2.36 for 1919.

Standard Morbidity and Mortality Tables showing the number of cases and deaths from the several communicable diseases by months, by age groups, and sex, and also Tables showing the morbidity rates per 1,000 population, and indicated fatality rates for such diseases by counties and for the State as a whole are appended to this report.

REPORTED CASES OF CHICKENPOX IN NEW JERSEY

For the Calendar Year 1920 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,	191	25	10	14	27	22	6	3	2	6	14	36	
1 year,	239	39	19	23	27	19	29	10	7	5	11	20	28
2 years,	315	40	25	24	37	24	30	16	8	1	19	29	56
3 years,	342	61	31	29	31	30	31	13	7	4	17	32	59
4 years,	403	82	32	32	30	31	38	8	5	9	20	57	59
Under 5 years,	1493	256	117	121	152	130	150	53	30	21	73	152	238
5 to 9 years,	2029	453	253	288	234	282	212	60	10	18	177	365	577
10 to 14 years,	488	66	44	59	40	56	31	10	3	4	15	67	102
15 to 19 years,	91	18	8	5	5	11	4	...	...	...	4	10	20
20 to 24 years,	44	9	3	6	9	6	2	1	...	...	2	4	2
25 to 34 years,	53	12	7	7	6	4	5	2	...	...	1	3	6
35 to 44 years,	18	...	5	5	2	1	...	2	1	...	1	...	1
45 to 54 years,	3	...	...	1	...	1	...	...	...	...	...	1	...
55 to 64 years, .....	...	...	...	...	...	...	...	...	...	...	...	...	...
65 years and over, .....	...	...	...	...	...	...	...	...	...	...	...	...	...
Unknown age,	27	5	7	1	2	1	1	...	...	...	5	3	2
Total,	5146	819	444	484	450	486	412	132	44	45	277	605	948

REPORTED CASES AND DEATHS FROM CHICKENPOX IN NEW JERSEY

For the Calendar Year 1920 By Age Groups and Sex.

AGE GROUPS.	Male		Female		Sex Not Stated.	Total	
	Cases.	Deaths.	Cases.	Deaths.		Cases.	Deaths.
Under 1 year,	105	1	85	1	1	191	2
1 year,	130	1	109	...	...	239	1
2 years,	163	...	155	...	...	318	...
3 years,	165	...	177	...	...	342	...
4 years,	209	...	194	...	...	403	...
Under 5 years,	772	2	720	1	1	1493	3
5 to 9 years,	1499	...	1430	...	...	2929	...
10 to 14 years,	243	...	240	...	...	483	...
15 to 19 years,	43	...	48	...	...	91	...
20 to 24 years,	29	...	18	...	...	44	...
25 to 34 years,	31	...	22	...	...	53	...
35 to 44 years,	14	...	4	...	...	18	...
45 to 54 years,	1	...	2	...	...	3	...
55 to 64 years, .....	...	...	...	...	...	...	...
65 years and over, .....	...	...	...	...	...	...	...
Age unknown,	17	...	9	...	1	27	...
Total,	2651	2	2493	1	2	5146	3

REPORTED CASES OF DIPHTHERIA IN NEW JERSEY

For the Calendar Year 1920 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,	98	12	7	9	12	7	1	4	1	10	6	10	19
1 year,	312	44	43	37	26	17	16	14	14	10	16	31	44
2 years,	334	67	55	48	48	43	36	15	13	31	46	68	64
3 years,	667	96	51	49	41	32	45	34	24	41	66	83	83
4 years,	667	73	43	58	46	42	46	37	32	35	56	108	91
Under 5 years,	2278	292	199	201	173	161	144	104	84	127	190	302	301
5 to 9 years,	2623	290	137	133	155	169	96	100	162	356	489	496	496
10 to 14 years,	944	94	46	52	45	65	65	39	23	45	127	175	163
15 to 19 years,	312	39	33	30	15	27	13	12	6	10	21	41	54
20 to 24 years,	217	37	22	9	25	12	9	6	10	10	16	10	42
25 to 34 years,	307	35	25	37	29	20	18	14	9	10	20	49	41
35 to 44 years,	134	26	8	9	11	9	5	7	5	1	6	23	24
45 to 54 years,	33	5	3	2	3	...	...	3	3	1	4	3	6
55 to 64 years,	13	4	...	1	1	1	...	...	...	...	3	1	2
65 years and over,	4	...	...	1	...	...	...	...	1	1	1	...	...
Unknown age,	66	9	7	6	5	4	3	4	1	...	5	11	11
Total,	6931	812	480	484	490	454	427	288	247	367	749	1113	1050

REPORTED CASES AND DEATHS FROM DIPHTHERIA IN NEW JERSEY

For the Calendar Year 1920 By Age Groups and Sex.

AGE GROUPS.	Male		Female		Sex Not Stated.	Total	
	Cases.	Deaths.	Cases.	Deaths.		Cases.	Deaths.
Under 1 year,	60	21	38	19	...	98	40
1 year,	169	58	143	44	...	312	102
2 years,	308	41	231	36	...	534	77
3 years,	568	45	299	23	...	867	73
4 years,	546	35	321	26	...	867	61
Under 5 years,	1246	200	1032	153	...	2278	353
5 to 9 years,	1307	79	1316	75	...	2623	154
10 to 14 years,	441	14	503	21	...	944	35
15 to 19 years,	129	2	183	6	...	312	8
20 to 24 years,	72	1	145	1	...	217	2
25 to 34 years,	88	1	219	3	...	307	4
35 to 44 years,	46	2	88	2	...	134	4
45 to 54 years,	13	1	20	2	...	33	3
55 to 64 years,	4	1	9	1	...	13	2
65 years and over,	2	1	2	...	...	4	1
Age unknown,	28	...	35	...	...	66	...
Total,	3376	302	3552	264	3	6931	566

REPORTED CASES OF DYSENTERY IN NEW JERSEY

For the Calendar Year 1920 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,	3				1			1			1		
1 year,								1		1			
2 years,	3							2					
3 years,	2												
4 years,	1	1											
Under 5 years,	9	1				2	3	1	1	1		1	
5 to 9 years,	2											1	
10 to 14 years,	2	1											
15 to 19 years,													
20 to 24 years,	1							1					
25 to 34 years,	3						2	1					
35 to 44 years,	2												
45 to 54 years,													
55 to 64 years,													
65 years and over,													
Unknown age,													
Total,	19	2				2	9	3	1	1	1		

REPORTED CASES AND DEATHS FROM DYSENTERY IN NEW JERSEY

For the Calendar Year 1920 By Age Groups and Sex.

AGE GROUPS.	Male		Female		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 1 year,	1	9	2	3	3	12
1 year,		1		4		5
2 years,	3			2	3	2
3 years,		1		2		1
4 years,				1		1
Under 5 years,	4	11	5	9	9	20
5 to 9 years,	1		1		2	
10 to 14 years,	2				2	
15 to 19 years,						
20 to 24 years,				1		
25 to 34 years,	2		1		3	
35 to 44 years,	2	1		2	2	3
45 to 54 years,		1		1		2
55 to 64 years,		3		1		4
65 years and over,		5		7		12
Age unknown,						
Total,	11	21	8	20	19	41

REPORTED CASES OF GERMAN MEASLES IN NEW JERSEY

For the Calendar Year 1920 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,	23	4	4	1	3	5	1	2			1	1	1
1 year,	30	4	2	4	4	2	6	2	1			3	2
2 years,	32	1	3	4	3	10	4	2				2	3
3 years,	34	6	5	2	11	2	3					1	4
4 years,	35	5	3		8	4	5	4					3
Under 5 years,	134	20	17	11	29	23	19	10	1			1	10
5 to 9 years,	207	28	18	18	29	35	26	7	1	3	7	7	30
10 to 14 years,	50	4	4	3	5	14	7			1	2	2	4
15 to 19 years,	15	3		1	1	5	1				2	1	1
20 to 24 years,	11	1	1	1	1	3	2						2
25 to 34 years,	6												1
35 to 44 years,	2						1						1
45 to 54 years,							1						
55 to 64 years,													
65 years and over,													
Unknown age,	10	1		4	1	2	1						1
Total,	457	57	38	39	69	82	59	17	3	5	13	23	52

REPORTED CASES AND DEATHS FROM GERMAN MEASLES IN NEW JERSEY

For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 1 year,	14		9		23	
1 year,	20		10		30	
2 years,	17		15		32	
3 years,	13		21		34	
4 years,	22		13		35	
Under 5 years,	86		68		154	
5 to 9 years,	107		100		207	
10 to 14 years,	17		31		50	
15 to 19 years,	7		8		15	
20 to 24 years,	2		9		11	
25 to 34 years,			6		6	
35 to 44 years,	1		1		2	
45 to 54 years,	1		1		2	
55 to 64 years,						
65 years and over,						
Age unknown,	7		3		10	
Total,	280		227		457	

REPORTED CASES OF INFLUENZA IN NEW JERSEY
 For the Calendar Year 1920 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,	212	46	185	20	1	1	1	1	1	1	4	3	
1 year,	387	118	230	28	1	1	1	1	1	2	3	4	
2 years,	591	159	391	28	4	1	1	1	1	2	3	3	
3 years,	576	166	366	37	1	1	1	1	1	2	4	1	
4 years,	628	187	397	37	1	1	1	1	1	1	1	3	
Under 5 years,	2394	676	1822	150	6	1	2	1	1	7	15	14	
5 to 9 years,	2531	855	1537	111	6	2	1	2	6	11	6	11	
10 to 14 years,	1479	483	919	55	3	3	1	4	1	2	9	9	
15 to 19 years,	1694	637	856	65	7	1	1	2	2	2	8	8	
20 to 24 years,	2793	1094	1539	82	10	3	1	2	1	2	3	6	
25 to 34 years,	7441	2868	4243	233	21	10	2	2	3	6	11	13	31
35 to 44 years,	4086	1413	2456	159	13	1	8	1	8	9	11	13	
45 to 54 years,	2296	727	1418	107	12	5	3	3	4	2	4	14	
55 to 64 years,	970	276	631	40	6	1	1	1	2	2	5	6	
65 years and over,	463	122	292	37	5	1	1	1	1	1	1	6	
Unknown age,	1743	935	786	20	1	1	1	1	1	1	1	1	
Total,	*27899	10104	16349	1059	90	25	13	8	8	23	37	63	120

* This figure does not include 1211 cases reported by letter. Adding these cases gives a total 29110 cases.

REPORTED CASES AND DEATHS FROM INFLUENZA IN NEW JERSEY
 For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Sex Not Stated.		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 1 year,	117	50	94	41	1	212	91	
1 year,	212	25	172	29	3	387	53	
2 years,	301	11	289	11	1	591	22	
3 years,	295	8	281	6	1	578	14	
4 years,	332	1	296	8	1	628	9	
Under 5 years,	1257	95	1132	94	5	2394	189	
5 to 9 years,	1353	14	1174	11	4	2531	25	
10 to 14 years,	751	9	725	10	3	1479	19	
15 to 19 years,	845	27	847	13	2	1694	40	
20 to 24 years,	1215	36	1878	43	2	2793	79	
25 to 34 years,	3547	148	3891	143	3	7441	291	
35 to 44 years,	2163	96	1922	68	1	4086	184	
45 to 54 years,	1162	63	1133	58	4	2296	121	
55 to 64 years,	473	48	491	45	1	970	93	
65 years and over,	212	72	253	81	1	463	153	
Age unknown,	790	.....	818	.....	137	1745	.....
Total,	13773	608	13964	566	162	*27899	1174	

* This figure does not include 1211 cases reported by letter. Adding these figures gives a total of 29,116.

REPORTED CASES OF MALARIA IN NEW JERSEY
 For the Calendar Year 1920 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 year, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2 years, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3 years,	3	.....	.....	1	1	1	.....	.....	.....	.....	.....	.....	.....
4 years,	3	.....	.....	1	.....	.....	.....	.....	1	1	.....	.....	.....
Under 5 years,	6	.....	.....	1	1	1	.....	.....	1	1	.....	.....	.....
5 to 9 years,	10	.....	.....	1	2	.....	.....	.....	2	3	.....	.....	.....
10 to 14 years,	8	.....	.....	.....	1	3	.....	.....	1	.....	.....	.....	.....
15 to 19 years,	8	1	.....	1	1	1	3	.....	1	.....	.....	.....	.....
20 to 24 years,	12	.....	.....	1	1	1	1	2	.....	1	1	.....	.....
25 to 34 years,	12	2	1	1	1	.....	.....	.....	1	2	.....	.....	.....
35 to 44 years,	7	1	.....	.....	1	2	1	.....	1	.....	.....	.....	.....
45 to 54 years,	3	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....
55 to 64 years,	4	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
65 years and over,	3	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Unknown age,	*29	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Total,	106	4	3	5	9	8	10	11	8	4	10	2	6

* Total of Age Unknown includes 26 case reports received, on which the months were not stated.

REPORTED CASES AND DEATHS FROM MALARIA IN NEW JERSEY
 For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 1 year, .....	.....	.....	.....	.....	.....	.....
1 year, .....	.....	.....	.....	.....	.....	.....
2 years, .....	.....	.....	.....	.....	.....	.....
3 years,	3	.....	.....	.....	3	.....
4 years,	2	.....	.....	1	3	.....
Under 5 years,	5	.....	1	.....	6	.....
5 to 9 years,	6	.....	4	1	10	1
10 to 14 years,	3	.....	5	.....	8	.....
15 to 19 years,	7	.....	1	.....	8	.....
20 to 24 years,	11	.....	5	.....	16	.....
25 to 34 years,	10	.....	2	.....	12	.....
35 to 44 years,	3	.....	4	.....	7	.....
45 to 54 years,	2	.....	1	.....	3	.....
55 to 64 years,	3	2	1	.....	4	2
65 years and over,	2	2	1	.....	3	2
Age unknown,	18	.....	11	.....	29	.....
Total,	70	4	36	1	106	5

REPORTED CASES OF MEASLES IN NEW JERSEY
 For the Calendar Year 1920 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,	619	71	62	97	114	87	85	36	17	10	6	12	22
1 year,	1910	105	235	272	389	385	267	95	31	7	14	16	34
2 years,	2513	224	303	383	521	456	387	120	23	12	8	15	31
3 years,	2342	270	284	406	338	511	346	118	18	4	15	11	21
4 years,	2884	272	352	429	617	591	494	136	19	9	9	21	25
Under 5 years,	10468	1002	1236	1587	2179	2060	1459	905	108	42	52	75	133
5 to 9 years,	14261	1639	2043	2503	2895	2899	1590	351	40	14	43	90	154
10 to 14 years,	1670	177	221	297	366	350	229	37	9	1	8	18	26
15 to 19 years,	843	30	46	73	63	46	37	5	1	3	1	5	34
20 to 24 years,	183	17	20	32	29	38	20	3	1	1	1	2	20
25 to 34 years,	202	28	26	35	34	44	18	10	1	1	1	2	4
35 to 44 years,	87	16	22	13	8	14	5	5	1	1	1	1	3
45 to 54 years,	25	2	6	3	5	3	2	2	1	1	1	1	1
55 to 64 years,	12	2	3	2	3	1	1	1	1	1	1	1	1
65 years and over,	3	1	1	1	1	1	1	1	1	1	1	1	1
Unknown age,	376	32	47	81	45	53	21	7	1	1	26	60	22
Total,	27642	2946	3667	4630	5566	5511	3411	928	161	62	131	253	376

REPORTED CASES AND DEATHS FROM MEASLES IN NEW JERSEY
 For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Sex Not Stated.		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 1 year,	205	46	321	33	3	619	79	
1 year,	976	68	934	59	1910	127		
2 years,	1235	18	1278	17	2513	35		
3 years,	1301	14	1241	11	2542	25		
4 years,	1504	7	1380	2	2884	9		
Under 5 years,	5311	153	5154	122	3	10468	273	
5 to 9 years,	7264	10	6966	6	1	14261	16	
10 to 14 years,	799	1	880	2	1679	3		
15 to 19 years,	163	1	173	1	343	1		
20 to 24 years,	88	1	97	1	185	2		
25 to 34 years,	72	1	131	1	203	1		
35 to 44 years,	34	1	53	1	87	1		
45 to 54 years,	11	1	14	1	25	1		
55 to 64 years,	4	1	8	1	12	1		
65 years and over,	1	1	2	1	3	1		
Age unknown,	217	1	148	1	16	376	1	
Total,	13966	165	13856	132	20	27642	297	

REPORTED CASES OF CEREBRO SPINAL MENINGITIS IN NEW JERSEY
 For the Calendar Year 1920 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,	22	1	1	1	1	3	1	8	2	2	2	2	2
1 year,	16	1	3	2	1	2	2	2	2	2	2	2	1
2 years,	7	3	1	1	1	3	1	1	1	1	1	1	1
3 years,	12	3	1	1	1	2	1	1	1	3	2	1	1
4 years,	7	1	1	1	1	1	1	1	1	2	1	2	1
Under 5 years,	64	3	5	4	3	8	6	10	2	10	7	3	1
5 to 9 years,	28	3	2	3	3	4	1	1	2	3	2	2	2
10 to 14 years,	14	1	2	3	1	3	1	2	2	2	1	1	2
15 to 19 years,	7	1	2	2	2	2	1	2	2	2	1	1	2
20 to 24 years,	3	3	1	1	1	1	1	1	1	1	1	1	1
25 to 34 years,	7	1	3	1	1	2	1	1	1	1	1	1	1
35 to 44 years,	8	1	2	1	1	1	1	1	1	1	1	1	1
45 to 54 years,	3	1	1	1	1	1	1	1	1	1	1	1	1
55 to 64 years,	1	1	1	1	1	1	1	1	1	1	1	1	1
65 years and over,	1	1	1	1	1	1	1	1	1	1	1	1	1
Unknown age,	1	1	1	1	1	1	1	1	1	1	1	1	1
Total,	134	13	14	11	11	17	7	13	7	16	14	8	3

REPORTED CASES AND DEATHS FROM CEREBRO SPINAL MENINGITIS
 IN NEW JERSEY

AGE GROUPS.	Male		Female		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 1 year,	10	15	12	9	22	24
1 year,	7	7	9	3	16	10
2 years,	4	3	3	5	7	8
3 years,	7	3	5	3	12	6
4 years,	2	1	5	3	7	3
Under 5 years,	30	28	34	23	64	51
5 to 9 years,	15	9	16	4	28	13
10 to 14 years,	5	4	9	7	14	11
15 to 19 years,	4	6	3	1	7	7
20 to 24 years,	3	2	1	1	3	2
25 to 34 years,	3	5	4	2	7	7
35 to 44 years,	6	2	2	2	8	4
45 to 54 years,	3	3	1	1	3	3
55 to 64 years,	1	1	1	1	1	1
65 years and over,	1	1	1	1	1	1
Age unknown,	1	1	1	1	1	1
Total,	72	60	62	40	134	100

REPORTED CASES OF PARATYPHOID FEVER IN NEW JERSEY
For the Calendar Year 1920 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 year, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2 years, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4 years,	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Under 5 years,	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
5 to 9 years,	4	.....	.....	.....	.....	1	2	1	.....	.....	.....	.....	.....
10 to 14 years,	3	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	1
15 to 19 years,	3	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
20 to 24 years,	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25 to 34 years, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
35 to 44 years,	1	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
45 to 54 years,	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
55 to 64 years, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
65 years and over, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Unknown age, .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total,	15	.....	.....	.....	.....	1	4	4	2	4	.....	.....	.....

REPORTED CASES AND DEATHS FROM PARATYPHOID FEVER IN NEW JERSEY
For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 1 year, .....	.....	.....	.....	.....	.....	.....
1 year, .....	.....	.....	.....	.....	.....	.....
2 years, .....	.....	.....	.....	.....	.....	.....
3 years, .....	.....	.....	.....	.....	.....	.....
4 years,	1	.....	.....	.....	1	.....
Under 5 years,	1	.....	.....	.....	1	.....
5 to 9 years,	3	.....	1	.....	4	.....
10 to 14 years,	3	.....	.....	.....	3	.....
15 to 19 years,	1	.....	2	.....	3	.....
20 to 24 years,	1	.....	.....	.....	1	.....
25 to 34 years, .....	.....	.....	.....	.....	.....	.....
35 to 44 years, .....	.....	.....	1	.....	1	.....
45 to 54 years, .....	.....	.....	1	.....	1	.....
55 to 64 years, .....	.....	.....	.....	.....	.....	.....
65 years and over, .....	.....	.....	.....	.....	.....	.....
Age unknown, .....	.....	.....	.....	.....	.....	.....
Total,	9	.....	6	1	15	1

REPORTED CASES OF PNEUMONIA IN NEW JERSEY
For the Calendar Year 1920 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,	731	96	173	93	86	63	35	23	7	22	24	46	63
1 year,	897	131	229	98	82	72	65	29	14	20	23	47	87
2 years,	657	87	173	82	75	43	39	18	8	15	22	29	68
3 years,	417	63	103	58	45	27	18	13	5	5	9	27	39
4 years,	331	46	88	44	30	24	14	6	2	8	14	23	32
Under 5 years,	3033	428	766	373	318	229	171	87	36	70	92	172	289
5 to 9 years,	1630	169	248	113	102	57	53	24	8	16	34	79	97
10 to 14 years,	317	47	89	50	27	23	7	9	1	8	8	13	35
15 to 19 years,	367	92	146	30	27	17	7	2	3	4	9	13	17
20 to 24 years,	493	113	222	52	26	16	6	4	4	4	5	16	20
25 to 34 years,	1305	303	669	101	47	44	21	10	3	15	18	30	42
35 to 44 years,	945	211	433	66	48	34	20	10	6	14	18	33	52
45 to 54 years,	588	120	229	55	32	33	12	6	3	8	11	23	36
55 to 64 years,	397	88	146	42	31	19	10	3	1	.....	.....	.....	.....
65 years and over,	496	103	160	57	31	41	10	5	3	9	10	28	39
Unknown age,	201	37	96	19	8	6	1	1	.....	1	2	2	8
Total,	*9172	1738	3193	960	717	551	318	163	68	149	224	428	661

* Total does not include 229 cases reported by letter. With these included total is 9401 cases.

REPORTED CASES AND DEATHS FROM PNEUMONIA IN NEW JERSEY
For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Sex Not Stated.	Total	
	Cases.	Deaths.	Cases.	Deaths.		Cases.	Deaths.
Under 1 year,	421	606	310	463	.....	731	1069
1 year,	461	272	435	258	1	897	830
2 years,	363	100	294	67	.....	657	167
3 years,	229	33	188	46	.....	417	79
4 years,	187	23	144	26	.....	331	49
Under 5 years,	1661	1034	1371	860	1	3033	1894
5 to 9 years,	574	60	456	58	.....	1030	118
10 to 14 years,	168	19	149	23	.....	317	42
15 to 19 years,	241	59	126	47	.....	367	103
20 to 24 years,	233	85	239	89	1	493	174
25 to 34 years,	686	313	619	317	.....	1305	630
35 to 44 years,	559	281	386	195	.....	945	476
45 to 54 years,	338	248	250	166	.....	588	414
55 to 64 years,	306	218	169	186	.....	397	404
65 years and over,	197	336	239	420	.....	496	755
Age unknown,	79	.....	89	.....	23	201	.....
Total,	4944	2652	4203	2361	25	*9172	5013

* Total does not include 229 cases reported by letter. With these included total is 9,401.

REPORTED CASES OF ACUTE ANTERIOR POLIOMYELITIS IN NEW JERSEY

For the Calendar Year 1920 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,	3						1		2				
1 year,	9						2	2	3	1	1		
2 years,	3	1						1	1				
3 years,	10				1		2	2	3	1			
4 years,	2							1	1				
Under 5 years,	27	1			1		4	4	9	6	2		
5 to 9 years,	12		1		1			2	2	3	1	2	
10 to 14 years,	7		1		1				1	3			
15 to 19 years,	1								1				
20 to 24 years,													
25 to 34 years,	1									1			
35 to 44 years,	1									1			
45 to 54 years,													
55 to 64 years,													
65 years and over,													
Unknown age,	2									2			
Total,	51	1	2		2	1	5	7	15	13	3	2	

REPORTED CASES AND DEATHS FROM ACUTE ANTERIOR POLIOMYELITIS IN NEW JERSEY

For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 1 year,	2	1	1		3	1
1 year,	4	3	5	1	9	4
2 years,	2	1	1	2	3	3
3 years,	6	2	4	1	10	3
4 years,	2				2	
Under 5 years,	16	7	11	4	27	11
5 to 9 years,	5	1	7	1	12	2
10 to 14 years,	3		4		7	2
15 to 19 years,	1				1	
20 to 24 years,						
25 to 34 years,	1			1	1	1
35 to 44 years,	1			1	1	1
45 to 54 years,						
55 to 64 years,						
65 years and over,						
Age unknown,	2				2	
Total,	29	9	22	7	51	16

REPORTED CASES OF SCARLET FEVER IN NEW JERSEY

For the Calendar Year 1920 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,	22	3	1	2	2	...	2	1	2	1	...	3	5
1 year,	80	11	6	18	7	6	5	4	1	1	2	14	11
2 years,	204	26	22	20	29	14	10	9	5	5	17	22	25
3 years,	315	51	29	42	28	23	13	11	6	9	14	41	48
4 years,	380	49	36	29	32	32	30	15	12	20	33	45	65
Under 5 years,	1026	140	94	111	98	75	60	40	26	36	66	128	152
5 to 9 years,	2153	239	172	204	150	178	160	63	54	93	178	273	371
10 to 14 years,	930	102	74	101	92	109	72	16	18	31	57	85	163
15 to 19 years,	278	25	38	34	38	36	16	2	...	4	8	23	54
20 to 24 years,	154	33	13	20	16	10	9	6	6	2	6	14	20
25 to 34 years,	135	20	17	16	13	9	3	6	2	4	6	7	32
35 to 44 years,	48	8	5	6	8	7	1	1	...	...	...	4	8
45 to 54 years,	7	2	...	1	...	1	...	...	...	...	...	1	1
55 to 64 years,	5	...	...	1	...	1	...	...	...	...	...	1	1
65 years and over,	2	...	...	2	...	...	...	...	...	...	...	...	...
Unknown age,	44	8	4	3	4	7	4	1	1	3	4	1	4
Total,	4782	597	417	496	422	430	326	134	107	173	327	547	806

REPORTED CASES AND DEATHS FROM SCARLET FEVER IN NEW JERSEY

For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Sex Not Stated.	Total Cases.	Total Deaths.
	Cases.	Deaths.	Cases.	Deaths.			
Under 1 year,	14	2	8		2	22	4
1 year,	49	4	37	4		86	8
2 years,	91	7	113	10		204	17
3 years,	174	2	141	7		315	9
4 years,	204	5	185	6		389	11
Under 5 years,	532	20	494	29		1026	49
5 to 9 years,	977	15	1175	14	1	2153	29
10 to 14 years,	416	3	513	5	1	930	8
15 to 19 years,	131	...	147	3		278	3
20 to 24 years,	56	1	98	5		154	6
25 to 34 years,	43	1	92	6		135	7
35 to 44 years,	27	1	21	...		48	1
45 to 54 years,	3	...	4	...		7	...
55 to 64 years,	1	...	4	...		5	...
65 years and over,	2	...	...	...		2	...
Unknown age,	24	...	19	...	1	44	...
Total,	2212	41	2567	62	3	4782	103

REPORTED CASES OF SMALLPOX IN NEW JERSEY

For the Calendar Year 1920 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,	2					1	1						
1 year,	3			1									
2 years,	2		1			1							
3 years,	3			2			1						
4 years,	2				1	1							
Under 5 years,	12		1	3	1	3	4						
5 to 9 years,	47	2	2	16	4	2	18	1					
10 to 14 years,	33			12	8	4	8					1	
15 to 19 years,	17	2		6	8		1		1				
20 to 24 years,	13	3	2		5	1	1						
25 to 34 years,	21	3		3	5	3	2	3	1				1
35 to 44 years,	21	4	1	6	1	3	3	1	1				1
45 to 54 years,	12	2	1	2	1	3	1	1	1				
55 to 64 years,	4		1		1								2
65 years and over,	1												1
Unknown age,	1												1
Total,	182	10	7	46	37	17	13	35	5		1		5

REPORTED CASES AND DEATHS FROM SMALLPOX IN NEW JERSEY

For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 1 year,			2		2	
1 year,			2		2	
2 years,	2				2	
3 years,	1		2		3	
4 years,			2		2	
Under 5 years,	4		8		12	
5 to 9 years,	18		29		47	
10 to 14 years,	16		17		33	
15 to 19 years,	7		10		17	
20 to 24 years,	8		5		13	
25 to 34 years,	10		11		21	
35 to 44 years,	10		11		21	
45 to 54 years,	9		3		12	
55 to 64 years,	1		3		4	
65 years and over,	1		1		1	
Age unknown,					1	
Total,	84		98		182	

REPORTED CASES OF TUBERCULOSIS IN NEW JERSEY

For the Calendar Year 1920 By Age Groups and Months.

AGE GROUPS.	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year,	29	1	3	2	1	2	2	1	5	4	1	3	4
1 year,	47	3	8	7	4	3	3	3	2	5	3	2	4
2 years,	35	5	5	1	3	5	2	1	3	1	4	2	3
3 years,	38	4	2	7	6	2	3	1	3	5	3	2	3
4 years,	29	2	2	4		6	2	1	5	4			
Under 5 years,	178	15	20	21	14	18	12	7	18	17	11	9	16
5 to 9 years,	257	16	14	32	26	17	19	22	14	56	14	11	16
10 to 14 years,	331	41	22	42	26	19	16	30	19	46	15	22	33
15 to 19 years,	472	53	27	46	50	34	50	52	28	48	28	36	25
20 to 24 years,	814	94	64	94	70	72	66	69	47	78	47	46	67
25 to 34 years,	1681	198	150	168	133	144	131	136	104	142	132	112	131
35 to 44 years,	1130	118	81	114	97	94	99	88	86	99	101	72	81
45 to 54 years,	695	75	55	68	61	58	58	45	56	70	36	45	62
55 to 64 years,	306	32	27	34	31	18	37	22	17	28	13	19	28
65 years and over,	149	16	8	11	12	13	18	11	11	16	8	4	21
Unknown age,	42	3	5	3	1	5	3	4	1	2	4	5	6
Total,	8035	661	473	633	521	492	509	486	401	603	409	381	486

REPORTED CASES AND DEATHS FROM TUBERCULOSIS IN NEW JERSEY

For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 1 year,	16	38	13	29	29	67
1 year,	27	30	20	25	47	55
2 years,	21	16	14	12	35	28
3 years,	20	16	18	11	38	27
4 years,	15	7	14	3	29	10
Under 5 years,	99	107	79	80	178	187
5 to 9 years,	116	27	141	39	257	66
10 to 14 years,	163	27	168	53	331	80
15 to 19 years,	206	85	272	182	472	267
20 to 24 years,	548	161	488	310	814	471
25 to 34 years,	900	425	781	437	1681	862
35 to 44 years,	710	442	420	290	1130	732
45 to 54 years,	515	369	180	173	695	542
55 to 64 years,	222	169	84	87	306	256
65 years and over,	95	97	84	63	149	180
Age unknown,	21		21		42	
Total,	8387	1909	2688	1714	6055	3623

REPORTED CASES OF TYPHOID FEVER IN NEW JERSEY
For the Calendar Year 1920 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								1				
1 year,	3									3			
2 years,	4	1				1		1		1			
3 years,	12				2	1		1	4	1	1	2	
4 years,	9			1		1		1	1	1		3	1
Under 5 years,	29	1		1		4	1	2	3	9	1	4	3
5 to 9 years,	91	2	3	1	6	5	7	5	6	21	9	17	9
10 to 14 years,	89	2	6	2	3	5	5	5	12	20	13	10	11
15 to 19 years,	98	5	2	5	4	4	5	8	14	22	17	9	3
20 to 24 years,	99	7	3	4	6	11	1	9	22	13	10	6	7
25 to 34 years,	122	4	1	7	3	8	6	8	20	19	18	18	10
35 to 44 years,	60	3	2	4	3	2	4	4	10	10	9	4	5
45 to 54 years,	35	4	1	2	1	5			5	4	6	6	1
55 to 64 years,	9	1			1				1	2	3		
65 years and over,	5	1			1				1	1			1
Unknown age,	10	1							1	3		5	
Total,	637	31	18	26	28	45	30	41	94	124	91	79	50

REPORTED CASES AND DEATHS FROM TYPHOID FEVER IN NEW JERSEY
For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 1 year,	1				1	
1 year,	3				3	
2 years,	2		2		4	
3 years,	6	1	6		12	1
4 years,	5		4	1	9	1
Under 5 years,	17	1	12	1	29	2
5 to 9 years,	53	4	38	5	91	9
10 to 14 years,	63	6	36	6	99	12
15 to 19 years,	44	3	54	7	98	10
20 to 24 years,	55	15	44	2	99	17
25 to 34 years,	61	10	61	10	122	20
35 to 44 years,	34	7	26	9	60	16
45 to 54 years,	18	5	17	1	35	6
55 to 64 years,	4	2	5	3	9	5
65 years and over,	3	2	1	5	3	
Age unknown,	7		3		10	
Total,	559	55	298	45	657	100

REPORTED CASES OF WHOOPING COUGH IN NEW JERSEY
For the Calendar Year 1920 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,	725	29	45	61	64	63	53	94	75	79	51	54	57
1 year,	722	40	47	67	66	64	61	74	68	66	55	44	61
2 years,	904	53	64	71	83	73	80	112	121	81	51	53	60
3 years,	986	55	67	94	89	53	88	123	117	90	48	56	76
4 years,	992	69	68	82	107	84	80	113	103	84	50	66	86
Under 5 years,	4329	257	291	373	409	367	362	516	484	400	255	273	349
5 to 9 years,	2965	225	206	327	343	219	231	313	252	196	134	216	273
10 to 14 years,	230	15	24	28	35	20	19	19	12	16	12	14	25
15 to 19 years,	28	5	1	5	1			3	1	4	2	3	3
20 to 24 years,	19	2	1		1	2	3	2	4	1	1	1	1
25 to 34 years,	47	3	1	5	6	2	5	6	6	4	4	3	2
35 to 44 years,	18		2				1	1	5	2	2		3
45 to 54 years,	11				2	1	2	1	2	1	1		1
55 to 64 years,	5		1		1				1	1	1		
65 years and over,	5			1					1	1		1	1
Unknown age,	34		2	3		2	4	3	4	3	2	5	6
Total,	7700	597	329	744	798	614	657	870	969	628	412	517	655

REPORTED CASES AND DEATHS FROM WHOOPING COUGH IN NEW JERSEY
For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Sex Not Stated.		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 1 year,	353	98	372	107			725	205
1 year,	347	41	375	67			722	108
2 years,	421	13	482	25	1		904	38
3 years,	474	7	512	12			986	19
4 years,	491	5	501	8			992	13
Under 5 years,	2086	164	2242	219	1		4329	383
5 to 9 years,	1390	3	1573	4			2965	7
10 to 14 years,	110		129				239	
15 to 19 years,	11		17				28	
20 to 24 years,	3		16				19	
25 to 34 years,	15		32				47	
35 to 44 years,	6		12				18	
45 to 54 years,	3		8				11	
55 to 64 years,	3		2				5	
65 years and over,	3		1				3	
Age unknown,	18		15				34	
Total,	3648	167	4050	224	2		7700	391

REPORTED CASES OF ANTHRAX IN NEW JERSEY
For the Calendar Year 1920 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 year,													
2 years,													
3 years,													
4 years,													
Under 5 years,													
5 to 9 years,													
10 to 14 years,													
15 to 19 years,													
20 to 24 years,													
25 to 34 years,	8	4		1			2				1		
35 to 44 years,	2			2									
45 to 54 years,	1										1		
55 to 64 years,													
65 years and over,													
Unknown age,													
Total,	11	4		3			2				2		

REPORTED CASES AND DEATHS FROM ANTHRAX IN NEW JERSEY
For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 1 year,						
1 year,						
2 years,						
3 years,						
4 years,						
Under 5 years,						
5 to 9 years,						
10 to 14 years,						
15 to 19 years,						
20 to 24 years,						
25 to 34 years,	8				8	
35 to 44 years,	1		1		2	1
45 to 54 years,	1				1	
55 to 64 years,						
65 years and over,						
Age unknown,						
Total,	10		1	1	11	1

REPORTED CASES OF CHANCROID IN NEW JERSEY
For the Calendar Year 1920 By Age Groups and Months.

AGE GROUPS.	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 2 years,													
2 to 9 years,													
10 to 14 years,	1						1						
15 to 19 years,	30	5		4	1	2	5	1	1	2	2	2	5
20 to 24 years,	66	13	4	6	5	2	5	5	4	3	7	7	2
25 to 34 years,	33	10	1	5	1	1	4	1	4	11	3	6	2
35 years and over,	22	1		3		1	2		1	3	4	4	3
Age unknown,	1									1			
Total,	173	29	5	18	7	9	19	7	11	20	16	19	13

REPORTED CASES OF SYPHILIS IN NEW JERSEY
For the Calendar Year 1920 By Age Groups and Months.

AGE GROUPS.	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 2 years,	41	4	1	2	5	3	4	9	3	2	3	2	3
2 to 9 years,	68	7	1	5	5	4	8	7	6	10	6	7	2
10 to 14 years,	69	11	2	4	6	3	7	9	3	3	2	9	10
15 to 19 years,	231	37	7	25	28	13	18	18	16	17	10	16	24
20 to 24 years,	650	85	32	40	47	49	54	29	44	64	59	66	52
25 to 34 years,	1157	159	57	121	89	83	98	74	72	147	101	91	104
35 years and over,	1240	132	50	111	100	78	91	73	73	189	116	108	110
Age unknown,	106	10	1	5	1	2	12	24	5	15	5	12	14
Total,	3542	406	151	322	281	237	292	243	222	447	302	311	328

REPORTED CASES OF GONORRHEA IN NEW JERSEY
For the Calendar Year 1920 By Age Groups and Months.

AGE GROUPS.	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 2 years,	13				1	1		3	4		1	3	
2 to 9 years,	62	2	4	4	2	1	9	8	6	14	5	4	3
10 to 14 years,	37	4	1	7	5		6	2	5	5	1		1
15 to 19 years,	414	49	22	31	34	25	41	25	37	42	53	34	21
20 to 24 years,	1190	120	75	92	97	89	108	66	89	151	141	91	77
25 to 34 years,	1922	78	47	72	87	52	73	89	76	130	116	101	99
35 years and over,	317	14	12	35	21	16	27	16	27	55	33	31	30
Age unknown,	35			2	3	2	6	1	2	1	9		3
Total,	3090	267	163	244	249	184	267	211	245	406	350	267	237

REPORTED CASES AND DEATHS FROM VENEREAL DISEASES IN NEW JERSEY
For the Calendar Year 1920 by Age Groups and Sex.

AGE GROUPS.	Male		Female		Total	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 2 years,	27	26	27	31	54	57
2 to 9 years,	44	3	36		130	3
10 to 14 years,	28		79		107	
15 to 19 years,	430		247	1	677	1
20 to 24 years,	1580	4	316	6	1896	10
25 to 34 years,	1749	12	456	9	2235	21
35 years and over,	1191	70	389	26	1580	96
Age unknown,	88		54		142	
Total,	5137	115	1684	73	*6821	*1188

* 16 cases on which the Venereal Disease was not stated are included in this total.
† 185 Deaths occurred from Syphilis.
3 Deaths occurred from Gonorrhoea.
0 Deaths occurred from Chancroid.

188 Deaths total.

CASE INCIDENCE AND INDICATED FATALITY RATES BY COUNTIES FOR 1920, FOR CHICKENPOX AND DIPHThERIA.

COUNTIES.	CHICKENPOX.				DIPHThERIA.			
	Cases.	Cases per 1000 Pop.	Deaths.	Per Cent. Fatality.	Cases.	Cases per 1000 Pop.	Deaths.	Per Cent. Fatality.
Atlantic,	148	1.73	0	0	172	2.04	13	7.55
Bergen,	244	1.13	0	0	490	2.32	54	6.93
Burlington,	123	1.50	0	0	131	1.60	10	7.63
Camden,	228	1.19	1	0.43	361	1.89	28	7.75
Cape May,	61	3.13	0	0	17	.67	3	17.64
Cumberland,	81	1.32	0	0	118	1.92	10	8.47
Essex,	2237	3.43	0	0	1611	2.47	119	7.38
Gloucester,	103	2.13	0	0	96	1.99	10	10.41
Hudson,	306	.48	1	0.32	1685	2.67	141	8.36
Hunterdon,	36	1.09	0	0	18	.34	1	5.53
Mercer,	105	.65	0	0	299	1.87	17	5.88
Middlesex,	59	.30	0	0	352	2.16	37	10.51
Monmouth,	116	1.10	0	0	134	1.27	13	9.70
Morris,	81	.97	0	0	108	2.63	14	8.33
Ocean,	26	1.17	0	0	41	1.88	3	7.31
Passaic,	422	1.62	1	0.23	585	2.25	64	10.94
Salem,	73	1.99	0	0	28	.76	4	14.28
Somerset,	28	.58	0	0	100	2.27	14	12.84
Sussex,	7	.28	0	0	26	1.04	1	3.84
Union,	672	3.33	0	0	402	2.90	25	6.21
Warren,	1	.02	0	0	88	1.95	7	7.95
State,	5146	1.63	3	0.05	6931	2.19	568	8.19

REPORTED CASES AND DEATHS BY COUNTIES FOR 1920 FROM DYSENTERY, LEPROSY, OPTHALMIA NEONATORUM AND PARATYPHOID FEVER.

COUNTIES.	DYSENTERY.		LEPROSY.		OPHTHALMIA NEONATORUM.		PARATYPHOID.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Atlantic,	0	1	0	0	1	0	0	0
Bergen,	0	0	0	0	1	0	0	0
Burlington,	0	5	0	0	1	0	0	0
Camden,	0	4	0	0	3	0	4	0
Cape May,	0	0	0	0	0	0	0	0
Cumberland,	0	3	0	0	0	0	0	0
Essex,	17	11	1	0	44	0	1	1
Gloucester,	0	1	0	0	0	0	2	0
Hudson,	0	4	0	0	5	1	1	0
Hunterdon,	0	0	0	0	1	0	0	0
Mercer,	0	3	0	0	4	0	0	0
Middlesex,	0	0	0	0	0	0	0	0
Monmouth,	0	1	0	0	3	0	5	0
Morris,	0	1	0	0	0	0	0	0
Ocean,	0	0	0	0	0	0	0	0
Passaic,	2	2	0	1	3	0	0	0
Salem,	0	0	0	0	0	0	0	0
Somerset,	0	1	0	0	0	0	0	0
Sussex,	0	0	0	0	1	0	0	0
Union,	0	2	0	0	1	0	2	0
Warren,	0	2	0	0	0	0	0	0
State,	19	41	1	1	67	1	15	1

REPORTED CASES AND DEATHS AND INDICATED FATALITY RATES BY COUNTIES FOR 1920, FOR INFLUENZA AND PNEUMONIA.

COUNTIES.	INFLUENZA.			PNEUMONIA.		
	Cases.	Deaths.	Per Cent. Fatality.	Cases.	Deaths.	Per Cent. Fatality.
Atlantic,	478	20	4.18	173	129	74.56
Bergen,	1767	50	2.82	524	283	54.00
Burlington,	874	44	5.03	114	112	98.24
Camden,	1631	77	4.46	447	341	76.28
Cape May,	84	5	5.95	15	17	*
Cumberland,	630	29	4.60	96	79	82.29
Essex,	12472	251	2.01	4755	1040	21.87
Gloucester,	263	21	7.98	102	78	76.47
Hudson,	2321	235	10.12	386	1171	*
Hunterdon,	281	19	6.76	17	53	*
Mercer,	1943	68	3.49	506	303	59.88
Middlesex,	1033	62	6.00	134	257	*
Monmouth,	743	30	4.04	139	114	82.01
Morris,	870	43	4.94	167	122	73.05
Ocean,	94	1	1.06	20	36	*
Passaic,	2192	92	4.19	644	368	56.83
Salem,	14,225	20	12.19	17	53	*
Somerset,	427	8	1.87	83	62	74.69
Sussex,	323	16	4.95	68	44	64.70
Union,	1678	65	6.02	372	345	92.74
Warren,	42	17	40.47	2	66	*
State,	29110	1173	4.02	9401	5950	53.71

CASE INCIDENCE AND INDICATED FATALITY RATES BY COUNTIES FOR 1920, FOR MALARIA AND EPIDEMIC CEREBROSPINAL MENINGITIS.

COUNTIES.	MALARIA.				EPIDEMIC CEREBROSPINAL MENINGITIS.			
	Cases.	Cases per 1000 Pop.	Deaths.	Per Cent. Fatality.	Cases.	Cases per 1000 Pop.	Deaths.	Per Cent. Fatality.
Atlantic,	1	.01	0	0	1	.01	1	100.00
Bergen,	4	.01	0	0	5	.02	5	100.00
Burlington,	4	.04	0	0	3	.03	2	66.66
Camden,	0	0	0	0	2	.01	1	50.00
Cape May,	0	0	0	0	0	0	0	0
Cumberland,	0	0	0	0	1	.01	1	100.00
Essex,	27	.04	0	0	43	.06	23	53.48
Gloucester,	1	.02	0	0	1	.02	1	100.00
Hudson,	8	.01	4	50.00	20	.03	20	100.00
Hunterdon,	0	0	0	0	0	0.0	0	0
Mercer,	11	.06	0	0	9	.05	7	77.77
Middlesex,	35	.21	0	0	7	.04	7	100.00
Monmouth,	1	.009	0	0	1	.009	2	0
Morris,	1	.01	0	0	1	.01	0	0
Ocean,	0	0	0	0	1	.04	1	100.00
Passaic,	6	.02	1	16.66	11	.04	9	81.81
Salem,	0	0	0	0	3	.08	4	0
Somerset,	4	.08	0	0	0	0.0	0	0
Sussex,	0	0	0	0	0	0.0	0	0
Union,	3	.01	0	0	25	.12	16	64.00
Warren,	0	0	0	0	0	0.0	0	0
State,	106	.03	5	4.71	134	.04	100	74.62

CASE INCIDENCE AND INDICATED FATALITY RATES BY COUNTIES FOR 1920, FOR MEASLES AND GERMAN MEASLES.

COUNTIES.	MEASLES.				GERMAN MEASLES.			
	Cases.	Cases per 1000 Pop.	Deaths.	Per Cent. Fatality.	Cases.	Cases per 1000 Pop.	Deaths.	Per Cent. Fatality.
Atlantic,	805	9.59	9	1.11	4	.04	0	0
Bergen,	2179	10.34	19	0.87	28	.13	0	0
Burlington,	758	9.23	3	0.39	10	.12	0	0
Camden,	1336	7.01	23	1.71	0	0	0	0
Cape May,	150	7.70	0	0	8	.41	0	0
Cumberland,	432	7.04	5	1.15	8	.13	0	0
Essex,	9319	14.29	62	0.34	318	.43	0	0
Gloucester,	421	8.73	2	0.47	4	.08	0	0
Hudson,	3406	5.41	80	2.61	8	.01	0	0
Hunterdon,	179	5.44	2	1.11	0	0	0	0
Mercer,	263	1.64	3	0.11	2	.01	0	0
Middlesex,	423	2.60	13	3.54	0	0	0	0
Monmouth,	629	5.99	1	0.15	7	.06	0	0
Morris,	654	7.90	2	0.30	0	0	0	0
Ocean,	165	7.44	2	1.21	7	.31	0	0
Passaic,	3069	11.95	26	0.83	1	.003	0	0
Salem,	424	11.59	3	0.70	0	0	0	0
Somerset,	150	3.73	7	3.88	1	.02	0	0
Sussex,	39	1.36	1	2.56	5	.20	0	0
Union,	2768	13.82	23	0.83	0	0	0	0
Warren,	13	0.26	0	0.00	46	1.02	0	0
State,	27642	8.75	297	1.07	457	.14	0	0

CASE INCIDENCE AND INDICATED FATALITY RATES BY COUNTIES FOR 1920, FOR ACUTE ANTERIOR POLIOMYELITIS AND SCARLET FEVER.

COUNTIES.	POLIOMYELITIS.				SCARLET FEVER.			
	Cases.	Cases per 1000 Pop.	Deaths.	Per Cent. Fatality.	Cases.	Cases per 1000 Pop.	Deaths.	Per Cent. Fatality.
Atlantic,	1	.01	0	0.00	110	1.31	0	0.00
Bergen,	1	.004	2	*	269	1.27	10	3.71
Burlington,	1	.01	0	0.00	140	1.71	2	1.42
Camden,	0	0	0	0	331	1.73	4	1.20
Cape May,	0	0	0	0	5	0.25	0	0.00
Cumberland,	1	.01	0	0	95	1.54	2	2.10
Essex,	28	.04	9	32.14	1438	2.23	21	1.44
Gloucester,	0	0	0	0	99	2.05	1	1.01
Hudson,	7	.01	1	14.23	698	.96	22	3.81
Hunterdon,	0	0	0	0	22	.86	0	0.00
Mercer,	0	0	0	0	134	.83	4	2.98
Middlesex,	2	.01	0	0	215	1.32	2	.93
Monmouth,	4	.03	0	0	142	1.55	3	2.11
Morris,	1	.01	1	100.00	100	1.20	2	2.00
Ocean,	1	.04	0	0.00	40	1.80	2	5.00
Passaic,	0	0	1	*	224	.90	11	4.70
Salem,	0	0	0	0	27	.73	1	3.70
Somerset,	0	0	0	0	112	2.33	0	0
Sussex,	0	0	0	0	7	.28	0	0
Union,	4	.01	2	50.00	590	2.94	16	2.71
Warren,	0	0	0	0	44	.97	0	0
State,	51	.01	16	31.37	4782	1.51	103	2.15

REPORTED CASES AND DEATHS BY COUNTIES FOR 1920 FROM RABIES, TRACHOMA AND TRICHINOSIS.

COUNTIES.	RABIES.		TRACHOMA.		TRICHINOSIS.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Atlantic,	6	0	6	0	6	0
Bergen,	6	0	2	0	6	0
Burlington,	6	0	6	0	6	0
Camden,	6	0	6	0	6	0
Cape May,	6	0	6	0	6	0
Cumberland,	6	0	6	0	6	0
Essex,	6	0	23	0	6	0
Gloucester,	6	0	6	0	6	0
Hudson,	6	0	4	0	4	0
Hunterdon,	6	0	6	0	6	0
Mercer,	1	1	5	0	6	0
Middlesex,	6	0	6	0	6	0
Monmouth,	6	0	1	0	6	0
Morris,	6	0	6	0	6	0
Ocean,	6	0	6	0	6	0
Passaic,	6	0	4	0	6	0
Salem,	6	0	6	0	6	0
Somerset,	6	0	1	0	6	0
Sussex,	6	0	6	0	6	0
Union,	6	0	2	0	6	0
Warren,	6	0	6	0	6	0
State,	1	1	42	0	6	0

CASE INCIDENCE AND INDICATED FATALITY RATES BY COUNTIES FOR 1920, FOR SMALLPOX AND TUBERCULOSIS.

COUNTIES.	SMALLPOX.				TUBERCULOSIS.			
	Cases.	Cases per 1000 Pop.	Deaths.	Per Cent. Fatality.	Cases.	Cases per 1000 Pop.	Deaths.	Per Cent. Fatality.
Atlantic,	0	0	0	0	120	1.43	98	81.66
Bergen,	40	.18	0	0	227	1.07	103	71.80
Burlington,	4	.04	0	0	92	1.12	82	89.13
Camden,	1	.005	0	0	280	1.51	212	73.33
Cape May,	0	0	0	0	18	.92	15	83.33
Cumberland,	0	0	0	0	74	1.20	71	95.94
Essex,	96	.14	0	0	2140	3.28	824	38.50
Gloucester,	4	.08	0	0	493	1.01	35	*
Hudson,	0	0	0	0	1085	1.74	815	74.42
Hunterdon,	0	0	0	0	42	1.27	34	80.95
Mercer,	3	.01	0	0	337	2.10	245	72.70
Middlesex,	0	0	0	0	287	1.76	149	51.91
Monmouth,	8	.05	0	0	124	1.18	108	87.09
Morris,	1	.01	0	0	94	1.13	97	*
Ocean,	19	.85	0	0	30	1.35	34	*
Passaic,	8	.02	0	0	453	1.74	273	60.26
Salem,	2	.05	0	0	28	.71	28	*
Somerset,	0	0	0	0	56	1.16	42	75.00
Sussex,	0	0	0	0	20	.80	15	75.00
Union,	0	0	0	0	457	2.28	222	48.57
Warren,	0	0	0	0	25	.55	45	*
State,	182	.05	0	0	6055	1.91	3625	59.86

CASE INCIDENCE AND INDICATED FATALITY RATES BY COUNTIES FOR 1920, FOR
TYPHOID FEVER AND WHOOPING COUGH.

COUNTIES.	TYPHOID FEVER.				WHOOPING COUGH.			
	Cases.	Cases per 1000 Pop.	Deaths.	Per Cent. Fatality.	Cases.	Cases per 1000 Pop.	Deaths.	Per Cent. Fatality.
Atlantic,	32	.38	1	3.12	18	.21	9	50.00
Bergen,	20	.09	4	20.00	564	2.67	27	4.78
Burlington,	37	.45	4	10.81	88	1.07	15	17.04
Camden,	56	.29	8	14.28	95	.49	13	13.68
Cape May,	3	.15	0	0.00	82	4.21	9	10.97
Cumberland,	49	.79	2	4.08	46	.74	6	13.04
Essex,	96	.14	11	11.45	1478	6.87	87	1.49
Gloucester,	38	.78	10	26.31	83	1.82	3	3.40
Hudson,	95	.15	23	24.21	465	.73	113	24.30
Hunterdon,	5	.15	1	20.00	21	.63	4	10.04
Mercer,	34	.21	7	20.58	140	.87	12	8.57
Middlesex,	30	.18	3	10.00	42	.25	32	76.19
Monmouth,	27	.25	3	11.11	153	1.47	3	1.93
Morris,	14	.16	4	28.57	141	1.70	6	4.25
Ocean,	14	.63	1	7.14	14	.63	1	7.14
Passaic,	26	.10	2	7.69	492	1.89	28	5.28
Salem,	14	.38	3	21.42	43	1.17	6	13.95
Sussex,	4	.08	0	50.00	10	.20	7	70.00
Somerset,	4	.08	1	50.00	29	1.16	2	6.89
Union,	58	.28	10	17.24	989	3.44	27	3.91
Warren,	3	.06	0	0.00	0	0.0	6	*
State,	657	.20	160	13.22	7700	2.43	394	5.11

CASE INCIDENCE AND INDICATED FATALITY RATES BY COUNTIES FOR 1920, FOR
GONORRHEA, SYPHILIS, AND CHANCROID.

COUNTIES.	GONORRHEA.				SYPHILIS.				CHANCROID.	
	Cases.	Cases Per 1000 Pop.	Deaths.	Per Cent. Fatality.	Cases.	Cases Per 1000 Pop.	Deaths.	Per Cent. Fatality.	Cases.	Cases Per 1000 Pop.
Atlantic,	131	1.56	0	0	135	1.60	7	5.27	6	.67
Bergen,	36	.40	0	0	121	.82	7	5.34	7	.63
Burlington,	222	3.08	0	0	104	1.27	7	6.73	52	.63
Camden,	350	1.83	0	0	370	1.94	11	2.97	8	.04
Cape May,	27	1.38	0	0	7	.35	1	14.28	1	.05
Cumberland,	69	1.12	0	0	37	.60	4	10.81	0	0
Essex,	1028	1.57	1	.09	901	1.47	39	4.66	50	.07
Gloucester,	36	.74	0	0	41	.85	0	0	0	0
Hudson,	251	.39	0	0	217	.34	37	17.05	7	.01
Hunterdon,	7	.21	0	0	71	2.15	2	2.81	0	0
Mercer,	290	1.81	0	0	508	3.17	29	5.70	6	.03
Middlesex,	52	.32	0	0	105	.64	4	3.80	4	.02
Monmouth,	119	1.13	0	0	128	1.31	3	2.17	6	.05
Morris,	49	.59	0	0	90	1.08	5	3.55	4	.04
Ocean,	9	.40	0	0	4	.18	1	25.00	1	.04
Passaic,	208	.90	0	0	286	1.10	18	6.29	11	.04
Salem,	24	.63	0	0	51	1.39	1	1.96	3	.08
Somerset,	17	.35	0	0	49	1.02	1	2.04	0	0
Sussex,	8	.32	0	0	11	.44	1	9.09	7	.03
Union,	75	.37	0	0	221	1.10	7	3.16	7	.03
Warren,	2	.04	0	0	5	.11	1	20.00	0	0
State,	3090	.97	2	0.06	3542	1.12	186	5.24	173	.05

Report of Bureau of Food and Drugs.

WALTER W. SCOFIELD, CHIEF.

The Bureau of Food and Drugs enforces the laws relating to the production and distribution of milk and milk products (Chapter 78 of the Laws of 1914); the law controlling the pasteurization of milk and its products (Chapter 285 of the Laws of 1915); the law governing the operation of creameries (Chapter 139 of the Laws of 1906); the law governing the production and distribution of certified milk (Chapter 237 of the Laws of 1909); the slaughter-house act (Chapter 295 of the Laws of 1910); the cold storage act (Chapter 101 of the Laws of 1916); the law regulating the breaking and sale of eggs (Chapter 30 of the Laws of 1914); the methyl alcohol act (Chapter 286 of the Laws of 1912); the oleomargarine laws (Chapter 84 of the Laws of 1844 and its supplements), and the food and drugs act (Chapter 217 of the Laws of 1907) and its amendments and supplements, which include the sanitary act of 1909 and the non-alcoholic beverage act of 1915.

Milk Control.—The recent work on the nutritive value of different foods has strengthened the general opinion formerly held by most food authorities that milk is the food most essential for the proper development of human life. This work emphasizes the necessity of giving greater attention to milk control than in the past. While it is admitted that the normal milk of healthy animals, which is not subjected to contamination and which is properly protected and handled, is most valuable in promoting health and development, especially of infants, it must also be remembered that milk is a most perfect medium for the development of some of the most dangerous pathogenic organisms and for the transmission of certain diseases. The value of pasteurization in rendering the enormous supplies of the larger

municipalities safe for human consumption has been recognized, and the Bureau has expended a greater amount of effort than in past years in the supervision of milk pasteurizing plants.

As a result of the investigations made in previous years by this Department, and as a result of conferences held with representatives of the New Jersey Department of Agriculture, a bill was prepared and submitted to the Legislature which provided that no person shall purchase, distribute or sell, or have in his possession with intent to distribute or sell, any milk or cream which has not been pasteurized, excepting milk or cream which has been produced by cows which have successfully passed a tuberculin test within one year of the sale of such milk or cream. This bill was amended so that it would not be unlawful to sell or deliver milk or cream produced by cows which had not passed a tuberculin test, if an application for an initial test of such cows by the Bureau of Animal Industry, New Jersey Department of Agriculture, was on file with that Department. This bill was reported to the New Jersey Senate, but did not become a law.

The recommendations made by the Milk Committee of the Central Atlantic States Dairy and Food Officials Association for the minimum requirements for a clean and safe milk have been followed by the Bureau. The essential factors for clean and safe milk have been considered to be healthy cattle, healthy milkers and milk handlers, a pure water supply, the proper cooling of milk, sterilization of utensils, clean flanks and udders of cows and small top milking pails. Those factors which have little or no effect upon the quality of milk have been minimized.

Dairy Inspection.—Inspection of dairy premises and of the methods used in the production of milk is essential if an accurate estimate of the cleanliness and safety of the milk is desired and if constructive recommendations are to be made to the producers. The bacterial count has been advocated as a means of determining the quality of the milk supply, but this examination does not differentiate between dangerous and harmless types of organisms. The chemical examination of milk gives information with respect to the percentage of fat and total solids present in the milk and indicates whether or not it has been adulterated. However, chemical tests disclose nothing with respect to bacterial

contamination of milk. The advice of the trained dairy inspector results in many cases in permanent improvement in the equipment or in the methods used in milk production.

It has been recognized that care and cleanliness are most important in milk production. Clean and safe milk may be produced in ordinary stables with inexpensive equipment. The recommendations which have been made by the Bureau during the year to milk producers, as a result of inspections made by representatives of the Department, have been confined to those requirements which are necessary to secure a clean safe milk.

It has been the policy of the Department to interest and assist local boards of health in the investigation of milk supplies of the municipalities. As far as possible, dairy inspections have been made jointly by representatives of this Department with representatives of local boards of health of the places where the milk was distributed. Recommendations for changes in equipment or methods have been made in written notices from the Department to producers as a result of such inspections and copies of the notices have been furnished to the local authorities. Such joint inspections and co-operation tends to stimulate the interest of the local authorities in securing a clean milk supply. It also prevents duplication of inspection and conflicting orders for changes in equipment or methods employed by dairymen in the handling of milk.

Especial attention has been paid to certain supplies of milk which are distributed in the raw condition. It has been the policy of the Bureau to recommend to local health authorities the adoption of ordinances which would require the pasteurization of all milk, excepting that produced by cows which have successfully passed the tuberculin test within one year of the sale of the milk or cream. This measure is strongly advocated because of the widespread prevalence of tuberculosis among dairy animals of this section of the country and because of the absence of such a State-wide regulation.

As a result of investigations which have been conducted by the Bureau, it has been learned that cows are kept and milk is produced, handled and distributed under grossly insanitary conditions in thickly-settled foreign sections of certain industrial

centers. In most of these cases one or at the most two or three cows are kept and the surplus of the milk, over that required by the family of the operator, is distributed to neighbors. The stables where the cows are kept are not provided with any means of light or ventilation other than the doors in many instances. The bodies of the cows and the udders and flanks, in particular, become encrusted with manure because of maintenance in filthy stables at all times. The utensils used in handling the milk are imperfectly washed in the kitchens of the homes where the possibility of the transmission of disease is ever present. The large numbers of such small milk producers, many of whom are unable to read or write the English language, and who are continually changing their addresses, make the control of such milk supplies very difficult for a State Department. The most effective means of control seems to be through constant supervision by the local health authorities. The city of Bayonne enacted an ordinance during the past year prohibiting the keeping of cows within the limits of that municipality, after repeated investigations and recommendations had been made by this Department. The enforcement of this ordinance by the Board of Health of Bayonne has resulted in the elimination of several dairies which were so located that it was not possible to operate them in compliance with the regulations governing the production and sale of milk in this State.

In the past it has been the policy of the Department to inspect the dairies which supply a certain municipality or a particular creamery or milk receiving station. It has been found that such a selection results in expending much attention to certain dairies, while neighboring dairies supplying some other community may receive little or no inspection. During the year representatives of this Department have completed inspections of all the dairies in Cumberland County and a start has been made to inspect the dairies in Salem and Hunterdon Counties.

The inspectors of this Bureau have continued to use the blanks devised recently for reporting inspections of dairy premises, in place of the dairy score card. By the use of this blank it has been possible to obtain reports of dairy inspections which give a clear description of the essential points of milk production.

The difficulty and expense of hiring conveyance for each inspector to visit dairy premises has hampered the work materially during the year. It is, therefore, recommended that dairy inspectors be provided with automobiles as such means of transportation would result in efficiency and economy in this work.

During the year 2,294 inspections have been made of dairies in this State by representatives of this Bureau.

Creameries and Milk Pasteurizing Plants.—The necessity of transporting most of the milk supplied to the larger municipalities over great distances and the additional necessity of mixing the milk from many dairies renders it more and more difficult to provide a safe and satisfactory product to the consumer. The mixing of milk, which has been produced and handled under widely different conditions, offers an opportunity for the general dissemination of disease producing organisms unless some safeguard is taken to prevent it. Pasteurization, the heating of milk to a temperature of 142-145 degrees Fahrenheit and holding it at that temperature for a period of thirty minutes, followed by immediate cooling to 50 degrees Fahrenheit or below, does destroy dangerous organisms and checks the deterioration of milk due to bacterial life.

The Department recognizes that efficient operation of pasteurizing plants is essential if the desired beneficial results are to be obtained. Therefore, constant attention has been given to these establishments, because it is believed that greater protection is afforded the consumer of milk, in proportion to the time and expense of supervision than in any other line of milk control.

In this State there are one hundred and five pasteurizing plants and fifty-six plants where milk is not pasteurized. In the latter establishments milk is received, cooled and shipped to distributing centers, pasteurizing plants or manufactured into butter, cheese, condensed milk or other products prepared from milk. During the year four hundred and ninety-seven inspections have been made of creameries and milk pasteurizing plants. These inspections have been made for the purpose of checking the efficiency of pasteurization and the cooling of milk as well as cleanliness of apparatus, cans and bottles.

Improvement has been noted in the process of pasteurization as carried on in the various plants, especially with regard to maintaining correct temperatures, thereby assuring greater safety of the product. In the continuous type of pasteurizing machine the difficulty of obtaining a uniform temperature is frequently met. In the larger establishments this type of pasteurizer is usually equipped with an automatic temperature regulator which facilitates proper heating of the milk. Again, certain plants having artificial refrigeration have no trouble in cooling the milk after pasteurization to a temperature of 50 degrees F. or below. Plants having a cooler of small capacity and using city water and little or no ice do not have the same success.

There has been a gradual improvement in the washing and steaming of bottles in the creameries and in a number of instances new machines have been installed which thoroughly cleanse the containers. This same improvement has not been noticed in the washing, steaming and draining of cans. It is the purpose of the Bureau to insist that creamerymen use only containers which have been properly cleansed and drained. The law and regulations governing the operation of creameries and milk pasteurizing plants prohibits the location of such an establishment in buildings used as dwellings. During the year several applications were received for permission to conduct milk pasteurizing plants in buildings which were used for dwelling purposes. These applications for licenses had to be refused.

Certified Milk.—The investigation of the production and distribution of certified milk, which was conducted during the past two years by this Department, has proved that the essential requirements originally outlined for this grade of milk, were not carried out by several of the medical milk commissions, certifying to milk sold in New Jersey. It seemed necessary, therefore, to place the requirements for the production and distribution of certified milk upon a legal basis, which would cause the product to be produced under uniform regulations. Consequently, the Legislature amended the act relating to the production and sale of certified milk by authorizing the State Department of Health to adopt regulations which were to be included in the State Sanitary Code. After several conferences with local health officials

and authorities on the production of milk, regulations were drawn and were adopted by the Department and were made a part of the State Sanitary Code.

After these regulations had been printed and distributed to all medical milk commissions, certifying to milk sold in this State, and to all producers of certified milk and to the local boards of health of the State, an investigation was made at each dairy where certified milk was produced for distribution in New Jersey. As a result of these investigations it was learned that certain of the regulations contained in the Sanitary Code were not being carried out in the production and distribution of this milk.

In the case of certain medical milk commissions it was found that no physician had been designated to make physical examinations of employees engaged in the handling of milk on the dairies; no veterinarian had been authorized to make monthly physical examinations of the cows; no arrangement had been made for the tuberculin testing of animals under Federal or State supervision; no facilities for the isolation of diseased animals were demanded and a statement showing the actual time of the production of the milk was not required to be placed on each container. Corrective recommendations were made in each case to the medical milk commission which supervised and certified to the milk. It is gratifying to report that the medical milk commissions, in general, have responded heartily to the recommendations, with a result that radical changes have been introduced in the method of control exercised by them.

It was learned at a recent meeting of the American Association of Medical Milk Commissions that New Jersey is the first State to incorporate the regulations for the production and distribution of certified milk as a part of a State Sanitary Code, and this experiment is being watched with interest by medical milk commissions throughout the country.

Milk Sold under Special Designations.—Grading systems for milk based upon differences in the bacterial content of the milk and in the numerical scores of dairy premises have been devised and adopted by local ordinance in many of the municipalities of this State. The grading systems differ materially from one another and the special wording and symbols used on bottle

caps by distributors convey many different ideas. The control of the labeling of milk presents a difficult problem.

Investigations have proved that a numerical scoring given for equipment and methods used on dairy premises is not always a true index of the quality of the milk produced. It has been demonstrated that a good grade of milk may be produced in barns of ordinary construction and with inexpensive equipment. The bacterial count does not differentiate between dangerous and harmless types of organisms. The necessity for repeated determinations of the bacterial content and for periodical inspections of the dairy premises to determine the numerical score, makes the work enormous in extent in the control of a large milk supply which is divided into complicated grades. The failure to enforce the provisions of such an ordinance results in unfair and unnecessary competition among distributors.

Investigations made during the year proved that milk of identically the same quality was sold by certain dealers, in bottles bearing caps marked with different statements or symbols and different prices were charged for the milk. In other cases investigations made of dairies producing milk sold under the term "Grade A" failed to disclose any superiority over neighboring dairies supplying milk sold as "Grade B". In certain cases the quality of milk produced on dairies which were supplying the milk sold as "Grade B" was found to be superior to the "Grade A" milk.

It has become the practice of certain dealers in municipalities, where grading systems are not provided, to use the same symbols and statements as required in municipalities where grading systems are provided. By such labeling the consumer is led to believe that a special grade of milk may be obtained whereas the milk is commonly found to be of one quality.

In many instances it has been impossible to attach any definite meaning to such statements or symbols as "Special", "Selected", "Nursery", "Hygienic", "Sanitary", "XXX", and "A", and no satisfactory explanation could be given by the dealers to support the alleged difference in quality and to warrant the advanced price at which the product was sold.

As high a standard of excellence in milk production as is practicable should be fixed, but only dissention results from the use of grading systems based upon the difference of a few points in a farm score or a slight difference in bacterial content. The consumer is asked to protect himself from deception and extortion based upon indefinite statements or symbols and is advised to demand proof of the superior quality of milk for which special claims are made. The consumer is also advised to request information from the local board of health as to the justification of the claims made by distributors of milk within its jurisdiction.

The State Department of Health does not favor the adoption of a complicated grading system for milk, based upon differences in the bacterial count and in the dairy score, by municipalities, and does not favor such a system as a part of the State Sanitary Code. However, this Department does favor and recommend legislation and ordinances that would establish a simple grading system requiring the pasteurization of all milk, excepting that produced by cows which have successfully passed the tuberculin test within one year of the sale of the milk.

Physical Examination of Dairy Animals.—Section 5, Chapter 78, of the Laws of 1914 requires that each dairyman, engaged in the production of milk for sale, shall submit a certificate to the Department of Health of the State of New Jersey, at least once each year, stating the results of the examination of the cows, signed by a duly licensed veterinarian, with reference to the existence of any disease with which the animal may be affected. A compilation of the data contained in reports of physical examination of dairy animals which were received during the period from July 1, 1919, to January 1, 1920, shows that 26,365 animals were examined and of this number 88 were reported as suspected of being affected with tuberculosis. From January 1, 1920, to July 1, 1920, the number of animals examined was 56,167 and 113 were reported as suspected of being affected with tuberculosis. During the period from July 1, 1920, to January 1, 1921, the number of animals examined was 25,146 and 48 were reported as suspected of being affected with tuberculosis. During the time from January 1, 1921, to

July 1, 1921, there were 54,091 animals examined and 116 were suspected of being affected with tuberculosis. Information regarding suspected cases of tuberculosis in dairy animals received by this Department is reported to the Bureau of Animal Industry, New Jersey Department of Agriculture.

Meat Inspection.—The following table shows the amounts and kinds of meats which have been inspected during the year:

CARCASSES.			PARTS OF CARCASSES.		
	<i>Passed.</i>	<i>Condemned.</i>		<i>Passed lbs.</i>	<i>Condemned lbs.</i>
Beef,	332	8	Beef,	3,800	2,800
Hogs,	219	.....	Pork,	2,300	.....
Calves,	483	.....	Veal,	675	.....
Sheep,	130	.....	Lamb, .....	.....	.....
Totals, .	1,155.	8	Totals, .	6,775	2,800

This table represents inspections made in connection with post mortem inspections of dairy cattle slaughtered as a result of physical examinations and in conjunction with slaughter-house inspection work. It also represents special investigations of complaints concerning the sale of meat alleged to be unfit for food purposes. With the small force of inspectors available to carry on food control work it is not possible to carry on state-wide meat inspection service. It is of interest to note, however, that with the co-operation of municipal inspectors and representatives of the State and Federal Bureaus of Animal Industry, a greatly increased number of animals are being slaughtered under inspection.

Slaughter-house Inspection.—Chapter 295, of the Laws of 1910, requires that the operators of slaughter-houses in this State must obtain a license from the State Department of Health. This law also empowers the Department to enact regulations for the control of such places.

On June 30, 1921, there were 222 slaughter-houses being operated in this State. During the year 922 inspections have been made at these establishments where slaughtering is carried on. Under the regulations of the Department, a person desiring to operate a slaughter-house or to establish a business of slaughtering animals for food purposes in a place which has been abandoned for a time, is required to submit to the Department the written approval of the site of such place by the local board of health before an application for a license is considered.

Many complaints regarding unpleasant noises or odors have been received by the Department from persons residing near slaughter-houses located in thickly settled districts of certain cities and towns. At the time of the erection of these slaughter-houses, they were located in sections which were not thickly settled. The rapid growth of many municipalities has resulted in the building of residences in the immediate neighborhood of slaughtering establishments. Upon investigation of such complaints it was found generally that the law and regulations governing slaughter-houses were not being violated, but that local nuisances were resulting from the conduct of the business in such sections. The abatement of nuisances of this character come within the jurisdiction of the local boards of health.

The Department will be guided in the granting of licenses for the operation of slaughter-houses in congested districts, by the decisions of the local boards of health of the municipalities where the slaughter-houses are located.

Cold Storage.—The storage of perishable food products in rooms which are cooled artificially to a temperature necessary for preservation, prevents the loss of large quantities of food at times of excess production. The temporary holding of perishable foods in cold storage pending shipment and distribution checks deterioration and loss.

The Department is charged with the enforcement of the cold storage law (Chapter 101 of the Laws of 1916). Attention has been given to the sanitary conditions of the cold storage warehouses and to the condition of foodstuffs at the time of arrival. The warehouses have been found in a sanitary condition and in general the facilities for refrigeration have been

ample to maintain temperatures required for the preservation of the different foods.

Particular attention has been given to the manner in which foods or the packages in which foods are stored, were marked with the date of entrance into and removal from storage. In most instances articles of food were found to be marked correctly and were removed from cold storage within the period of twelve months permitted by the cold storage law.

The cold storage act prescribes that extensions of time for the storage of articles of food over the twelve months permitted by law, may be granted by the Director of Health, upon application, providing the foods are found in a suitable condition for additional storage. The requests received for extensions of time for the storage of articles of food have been few in number and the time granted by the Department has been limited to short periods. A detailed report regarding the extensions granted will be found in the report of the Director of Health.

A supplement to the Cold Storage Act was passed by the last Legislature. This law prohibits altering or eradicating in any manner the markings placed upon any article of food or its container to indicate the date such article was received for storage.

The following table shows the kinds and amounts of foods held in cold storage in the warehouses in this State on the last day of each month during the year:

SUMMARY OF THE KINDS AND AMOUNTS OF FOODSTUFFS HELD IN COLD STORAGE IN NEW JERSEY ON THE LAST DAY OF EACH MONTH DURING THE PAST YEAR.

	July, 1920.	Aug. 1920.	Sept., 1920.	Oct., 1920.	Nov., 1920.	Dec., 1920.	Jan., 1921.	Feb., 1921.	Mar., 1921.	April, 1921.	May, 1921.	June, 1921.
Eggs—cases,	500,286	406,718	428,841	341,502	215,348	60,284	3,272	579	161,162	373,660	406,543	490,421
Eggs, broken—lbs.,	339,755	353,470	411,270	405,770	323,400	390,890	291,143	327,270	467,100	473,307	722,137	622,825
Cheese—lbs.,	1,514,030	2,134,841	1,070,907	1,790,923	1,616,477	887,019	630,872	470,000	290,273	106,756	305,095	352,542
Butter—lbs.,	4,743,102	5,003,283	4,713,002	1,000,925	3,209,122	2,364,030	1,577,728	1,063,764	630,005	212,025	508,022	2,301,289
Poultry—lbs.,	1,375,016	1,632,007	1,733,881	2,764,616	3,357,680	6,180,742	6,044,818	6,538,754	4,623,503	3,415,097	2,278,875	1,747,026
Meats, fresh—lbs.,	10,541,102	11,112,005	12,201,887	20,785,771	18,510,977	27,050,768	35,071,367	29,302,125	27,000,701	18,880,033	15,908,478	10,622,938
Fish, fresh—lbs.,	1,755,125	2,234,864	3,313,153	3,085,272	3,234,278	2,613,076	2,161,541	1,502,047	1,043,800	908,241	1,044,308	1,517,055
Milk and milk products—lbs.,	636,191	1,525,315	800,050	871,885	920,477	1,250,477	1,477,375	755,325	715,587	735,024	631,082	398,811
Edible fats and oils—lbs.,	757,803	894,007	265,112	20,803	15,002	17,003	613,772	3,602,222	28,742	4,220,104	3,457,891	72,172
Game—lbs.,	79,130	65,639	60,314	59,639	47,410	38,609	22,839	6,710	100	.....	.....	2,000
Miscellaneous articles—pkgs.,	100,144	140,480	147,543	241,482	493,287	408,323	411,015	246,479	110,621	72,485	31,053	46,744

Canning Factories.—The usual survey of the canning industry in this State was made in company with representatives of the Bureau of Chemistry, United States Department of Agriculture. During the year 179 inspections were made at 78 canning factories. These establishments were found to be operated generally in compliance with the regulations governing the operation of such places, with the exception of four plants where it was found that foodstuffs were handled under unsanitary conditions on the initial inspection. The operators of these plants were notified to correct the objectionable conditions observed and subsequent inspections proved that operations were carried on in a satisfactory manner.

During past years most of the canning factories in New Jersey were engaged solely in packing tomatoes, and operated only during six or eight weeks of the year. In the last few years many of these factories have also packed jams, jellies, berries, peaches, pears, apple-sauce, cherries, rhubarb, beets, peas, spinach, beans, and pumpkin in increasing quantities, which enables the factories to be operated for longer periods of time each year.

At the close of the last canning season a communication was received from the Chief of the Philadelphia Station of the Bureau of Chemistry, from which the following quotation is made, "It is particularly gratifying to note the improvement in the industry in your State over conditions which we all know existed a number of years ago, and which improvement is due directly to the efforts of your Department in having them remedied." The Department appreciates the assistance given by the United States Department of Agriculture in this work. Credit should also be given to the work of the National Cannery Association which established an inspection service, where the proprietors of canning factories were members of the association and where application was made for inspection service.

Sanitary Inspection of Food Establishments.—The following table shows the number and kinds of establishments where sanitary inspections have been made during the year:

Dairies,	2,294
Creameries,	497
Milk depots,	85
Cheese factories,	12
Slaughter-houses,	922

Cold storage warehouses,	220
Canning factories,	179
Egg-breaking establishments,	34
Meat markets,	34
Bottling establishments,	26
Miscellaneous inspections,	19

Chemical Examinations of Milk Samples.—During the year 2,397 samples of milk and cream were collected for analysis. Of this number 344 samples were found to differ from the legal standard. The samples which were found to differ from the legal standard may be divided into the following classes:

Milk deficient in total solids,	286
Milk containing added water,	27
Cream deficient in fat,	19
Cream adulterated with foreign fat,	12
Total,	344

The following table shows the number and kinds of samples of food other than milk and cream collected during the year:

Article.	Total.	Above Standard.	Below Standard.
Berries, canned,	6	6	..
Butter,	130	107	23
Cream, canned,	2	2	..
Cream, reconstructed,	3	3	..
Flour, gluten,	4	4	..
Flour, gruel,	3	3	..
Hamburg steak,	78	67	11
Ice cream, mix,	5	5	..
Lard,	32	28	4
Lemon extract,	24	21	3
Milk compounds, canned,	6	6	..
Milk (condensed), canned,	14	14	..
Milk (evaporated), canned,	20	17	3
Milk (powdered),	2	..	2
Non-alcoholic beverages,	49	35	14
Oleomargarine,	1	1	..
Olive oil,	48	44	4
Peas, canned,	1	1	..
Sausage,	4	4	..
Tomato products,	46	38	8
Vanilla extract,	17	10	7
Vinegar,	23	13	10
Miscellaneous samples,	6	6	..
Totals,	524	435	89

Butter.—The standard in force in this State for butter is identical with the standard established by the United States Department of Agriculture, which requires that butter shall contain not less than 82.5 per cent. of milk fat. During the year 130 samples of butter were collected and analyzed for the purpose of ascertaining the percentages of fat contained therein. Of this number 23 samples were found to be deficient in milk fat. These samples which were deficient in milk fat were adulterated by the substitution of excess quantities of moisture. Legal proceedings were instituted for the collection of the penalty provided by law in certain of the cases and in cases where the violation was of an inter-State nature the matter was referred to the Bureau of Chemistry, United States Department of Agriculture. It is planned to continue this investigation during the coming year.

Preservatives in Meats.—The practice of grinding meats and displaying the same in show windows and glass cases in markets is becoming more common each year. The comminution of a meat product exposes a larger surface with the result that the natural fresh color soon disappears and deterioration is more rapid and apparent, unless some preservative is used. Chapter 74 of the Laws of 1915 prohibits the addition of sodium sulphite, sodium bisulphite, sulphur dioxide or any drug, chemical, chemical compound or preservative from which sulphur dioxide can be liberated. During the year 78 samples of hamburg steak were collected for analysis. Of this number 11 samples were found to contain sodium sulphite.

The following table shows the number and kind of samples of drugs collected by representatives of the Department, purchased under names recognized by the 9th Revision of the United States Pharmacopœia and the 4th edition of the National Formulary:

Article.	Total.	Standard.	
		Above	Below
Chloroform liniment,	24	5	19
Distilled extract of witch hazel,	9	9	..
Distilled water,	58	12	46
Elixir of genitan,	1	1	..
Fermented milk,	8	8	..
Solution of calcium hydroxide,	21	16	5

Article.	Total.	Standard.	
		Above	Below
Solution of ferric chloride,	19	14	5
Solution of formaldehyde,	14	13	1
Solution of hydrogen dioxide,	20	10	10
Solution of magnesium citrate,	29	18	11
Spirit of camphor,	10	7	3
Spirit of peppermint,	20	16	4
Tincture of ginger,	3	1	2
Tincture of iodine,	12	9	3
Tincture of nux vomica,	17	5	12
Totals,	265	144	121

The following table shows the kinds and number of samples of drugs collected under names other than those specified by the United States Pharmacopœia and the National Formulary:

Article.	Total.	Above		Below	
		Standard.	Standard.	Standard.	Standard.
Hair tonic,	17	17	..	..	..
Liniments,	5	5	..	..	..
Patent medicines,	3	1	2	..	..
Toilet waters,	5	5	..	..	..
Veterinary preparations,	3	3	..	..	..
Totals,	33	31	2	..	..

Co-operation.—The Bureau has co-operated with the Bureau of Chemistry, United States Department of Agriculture, and with the Bureau of Internal Revenue, United States Treasury Department, in the collection of samples and evidence in inter-State shipments of questionable foods and drugs. We have also co-operated with the various bureaus of this Department, the New Jersey Department of Agriculture and with various local boards of health in matters pertaining to food control work.

Report of George W. McGuire, Special Agent.

IN CHARGE OF ICE CREAM FACTORY INSPECTION.

At the end of the year there were 471 licensed ice cream factories in the State as against 475 in the preceding year. Notwithstanding that there were four less licensed manufacturers of ice cream this year, the volume of the product was increased by over one million eight hundred thousand gallons over that manufactured within the State the previous year.

The plan to enlist the working co-operation of local boards of health in safeguarding their local supplies has worked well in the several cities where their aid was solicited. Periodical inspections of factories have been made by the local officers, frequently accompanied by a representative of the State Department of Health in Paterson, Passaic, Newark, Jersey City and Trenton, with the result that there is a decided improvement in sanitary conditions of many factories and the rejection of a number of applicants where conditions did not warrant the granting of a license. These local officers have strictly carried out our regulation regarding the installation of running hot water supply systems.

In many of the smaller plants, with a yearly output of from 500 to 5,000 gallons, the cleansing of the containers and apparatus was poorly done because a sufficient supply of hot water was not available, with a resultant impairment of the product. This situation has been changed in a great many factories by the installation of gas heaters and stove boilers.

The quantity of ice cream made in this State during the war was about double of that made previously. It was thought that with the discharge of the soldiers and the abandonment of camps and cantonments the quantity produced would decline. The reverse, however, has happened, as the following table will show:

Ice cream made in this State in 1918,	3,756,665 gallons.
Ice cream made in this State in 1919,	6,044,460 gallons.
Ice cream made in this State in 1920,	7,801,000 gallons.
Increase over 1919—1,756,540.	

As there are at least a dozen large manufacturers of ice cream in Pennsylvania and New York who ship their product to many of our border cities and towns, the consumption of the product by our people will no doubt reach a total of from 10,000,000 to 11,000,000 gallons a year. The importance of this to the dairy interests may be seen when it is estimated that it requires about 10,000,000 gallons of milk to manufacture the amount of ice cream which was produced in our State last year.

Early in the year it was learned that ice cream dealers had been solicited to purchase ice cream mixtures under various trade names in which foreign fats had been substituted for butter fat. One concern made an imitation ice cream and sold it under the name of "Zero," but they soon discontinued its manufacture. The publicity given to this form of adulteration by the attempt of certain cocoanut oil manufacturers to have the State legalize its use as a substitute for butter fat put dealers on their guard, and so far no trace of the article has been found in the samples which have been collected and analyzed. During the balance of the year it is proposed to continue the examination of ice cream samples in order to learn whether any foreign fats are being used in the manufacture of the product.

The following table shows the average percentage of butter fat contained in 148 samples collected in 19 towns, also the highest and lowest fat content in samples in each town. No foreign substances were found in any of these samples:

<i>Town.</i>	<i>No. of Samples Collected.</i>	<i>Highest Per Cent. of Fat.</i>	<i>Lowest Per Cent. of Fat.</i>	<i>Average Per Cent. of Fat.</i>
		<i>%</i>	<i>%</i>	<i>%</i>
Asbury Park,	6	31.	8.2	14.81
Atlantic City,	6	14.5	6.3	10.4
Bayonne,	6	8.4	3.2	5.9
Bordentown,	1	8.8	8.8	8.8
Bound Brook,	3	12.37	8.9	9.9
Camden,	1	10.9	10.9	10.9
Elizabeth,	6	11.7	5.9	8.4

<i>Town.</i>	<i>No. of Samples Collected.</i>	<i>Highest Per Cent. of Fat.</i>	<i>Lowest Per Cent. of Fat.</i>	<i>Average Per Cent. of Fat.</i>
		<i>%</i>	<i>%</i>	<i>%</i>
Flemington,	2	10.8	8.2	9.5
Hoboken,	6	11.8	7.8	9.5
Hopewell,	2	14.2	10.6	12.4
Lambertville,	2	13.9	11.0	12.7
Mount Holly,	4	10.2	9.6	10.3
Newark,	42	21.9	3.7	11.3
New Brunswick,	6	14.10	5.8	10.4
Paterson,	28	17.1	6.8	10.8
Plainfield,	6	14.2	7.9	10.8
Princeton,	1	14.2	14.2	14.2
Somerville,	3	13.47	8.5	11.3
Trenton,	17	15.	3.9	9.2

SUMMARY.

Number of towns in which samples were collected,	19
Number of samples collected,	148
Highest per cent. of butter fat found in any sample,	31%
Lowest per cent. of butter fat found in any sample,	3.2%
Average per cent. of butter fat found in 148 samples,	10.5%

In addition to the above three samples were collected in Camden under the name of "snow flake." This product is made from skimmed milk, sugar, gelatine and flavoring, frozen in an ice cream freezer. It is quite popular in Camden and appears to be invariably sold under its trade name.

The three samples collected showed the following percentage of butter fats:

Number 1,	2.7 %
Number 2,	1.86%
Number 3, .....	.35%

Nine samples of ice cream manufactured in other States and sold to dealers in our State were collected, and the following are the names of the manufacturers and the fat content of their product:

Breyer's, Philadelphia,	11 %
Supplee's, Philadelphia,	10.6 %
Crane, Philadelphia,	7.9 %
Rosedale, Philadelphia,	11 %
Colonial, Philadelphia,	12 %
Shanahan & Elliot, Philadelphia,	9.6 %

Abbott's, Philadelphia,	11.27%
Sommers' Dairy, Easton, Pa.,	13.8%
Easton Dairy Co., Easton, Pa.,	10.3%

For several years there has been a growing demand for a legal standard for ice cream. A number of States have adopted standards defining the product. The National Association of Ice Cream Manufacturers have approved a measure defining and standardizing ice cream and have recommended that the States adopt their draft or one similar. To meet this public demand for an ice cream standard a bill was introduced into the Legislature of 1919. It did not, however, meet the approval of this Department because it permitted the use of homogenized fats in its manufacture. This would have allowed the use of any animal or vegetable fat in an ice cream mixture, lessening the cost of the product and opening the door to adulteration as well as lowering the nutritious properties of ice cream. The bill was finally withdrawn from the files of the Legislature.

During the last session of the Legislature a bill was prepared by this Department and approved by the leading ice cream makers and local health authorities, requiring 8 per cent. butter fat in ice cream, except where eggs and nuts are used in its manufacture, in which case 6 per cent. of butter fat was allowed. It also required the use of certain other specified ingredients. This bill, known as Senate bill No. 101, was introduced in the Senate, but while in Committee it was amended through the influence of certain interests engaged in the manufacture of cocoanut oil and passed the Senate in its amended form. If the bill as amended had become a law, it would have permitted the substitution of cocoanut oil for butter fat and would have robbed ice cream of its most nutritious constituent, viz: milk fat. As soon as it became known to the public that the legalized adulteration of ice cream was to be permitted, representative health officials, dairymen, ice cream manufacturers, womens' clubs and private citizens appeared before the Senate Committee having the bill in charge and vigorously protested against the passage of the bill in its amended form and urged the committee to reintroduce it in its original shape. This was done and it was soon passed by both houses. It failed, however, to receive the Governor's approval.

Report of the Bureau of Engineering.

H. P. CROFT, CHIEF ENGINEER.

Since 1915, when the Department was reorganized under Chapter 288 of the Laws of 1915, the Bureau of Engineering, formed at that time, has had entrusted to it the supervision and control of the public water supplies and the discharge of sewage into the waters of the State.

The work has been carried on under two divisions—office and field. During the past year ten employees were engaged in the two divisions, seven of these being experienced in sanitary engineering. The greatest part of the office work consisted of the preparation of reports on field inspections and the forwarding of advice and instructions as a result of these reports. In addition to this, general studies were made for the improvement of existing water and sewage treatment plants; forty applicants for licenses for water and sewage plant operators, as required by Chapter 23 of the Laws of 1918, were examined; the following number of plans submitted for action were examined: 42 plans for sewer extensions for 29 corporations and municipalities; 11 plans for sewerage systems and sewage treatment plants for 9 individuals, corporations or municipalities; 1 plan for an industrial waste treatment plant for a corporation; 1 plan for an experimental sewage treatment plant for a municipality.

The field work included 391 routine and 764 special field examinations of existing systems, including the collection of samples. There were 46 special investigations relating to nuisances caused by stream pollution; 5 investigations of violations of the State Sanitary Code, and 58 investigations of the pollution of streams used for potable water supplies; together with the collection of legal evidence for cases referred to the Attorney-General for action. In addition, necessary data was collected for the

examination and report upon plans for water and sewage treatment plants and systems.

In connection with the approval of plans for water and sewage treatment plants, two additional provisos, limiting the approval, have been adopted by the Department, which are as follows :

"That the approval of the plans shall only remain in force for the period of two years from the date of approval, unless the plant is constructed or the contract awarded for the construction of such plant.

"That in the examination of plans and specifications, the Department of Health of the State of New Jersey does not examine into the structural features of the design, such as thickness of concrete, adequacy of reinforcing, or the efficiency of any of the mechanical equipment or apparatus. The approval of plans and specifications does not include the approval of any of these features."

Conditions have arisen in the past few years which made it necessary to supplement the original laws under which the Department functions. The additional legislation passed in 1920-1921, relating to the work of this Bureau, was as follows :

Chapter 46 of the Laws of 1921.

This act empowers the State Department of Health to call for such changes or improvements to existing sewage disposal plants located on streams used for potable water supplies which will improve the character of the effluent discharged therefrom.

Chapter 47 of the Laws of 1921.

This act requires the furnishing of information relative to the construction and operation of water purification plants and distribution systems, and sewage treatment plants and sewerage systems to the director of the Department of Health of the State of New Jersey.

Chapter 87 of the Laws of 1921.

This act requires the approval of plans and specifications by the Department of Health of the State of New Jersey for changes and improvements made at water purification plants, sewerage systems and sewage treatment plants. Formerly this Department had no direct control over changes and alterations made after plants were once installed.

Chapter 280 of the Laws of 1921.

This act requires that an industrial plant must receive permission from this Department before it locates upon a watershed, the streams of which are used for potable purposes.

The Department in the past has endeavored, as a general rule, to secure compliance with the laws under which it operates by educational methods rather than through the exercise of its police powers of enforcement; but the number of cases in which the Department has had to seek recourse in legal proceedings when all other means had failed is increasing yearly. To take care of the legal expenses incurred in the prosecution of these cases the last Legislature appropriated four thousand dollars.

An illustration of one of these cases is that of the State Department of Health v. the Township of North Bergen, the first action brought against a municipality under Chapter 215 of the Laws of 1910, as amended by Chapter 182 of the Laws of 1913. This municipality was first notified in 1913 to cease polluting the Hackensack River and its tributaries. Plans were submitted in 1914 for a sewerage system and sewage treatment plant, but nothing having been accomplished in the meantime, the matter in 1920 was prosecuted to an end, resulting on May 18, 1921, in the issuance of a mandatory writ of injunction restraining the Township from polluting the said waters of the Hackensack River and its tributaries, which restraining writ is printed in the latter part of the Bureau's report.

As an aftermath of the agitation in the early part of 1920 by the authorities of the Town of Montclair against the use of the water supplied by the Montclair Water Company, considerable time has been spent in studying the situation from all viewpoints. The town government warned the citizens to boil all water used for human consumption, basing this warning upon the presence of B. Welchii in the delivered water. The presence of B. Welchii in other water supplies throughout the State has been investigated, and the results obtained are printed by the Laboratory of Hygiene in this Annual Report. It is the opinion of the Bureau, which has been confirmed by leading sanitary authorities, that the presence of this organism has no particular sanitary significance in judging the quality of a water supply, and therefore that the warning issued by the Town of Montclair is unjustifiable.

Educational work has resulted in improved operation of water chlorination plants during the past year. Practically every plant

of this type now makes free chlorine tests by the starch iodide method as a dosage control, so that enough chlorine is added at all times to secure the desired results. These tests are recorded on the monthly reports submitted to the Department.

Chlorination as the only safeguard for surface supplies subject to pollution is regarded by the Department as a temporary improvement only, and it is its policy to encourage, and, under certain circumstances, demand the additional protection of prolonged storage or filtration. The reason for this attitude is self-evident. Chlorinators seem to be peculiarly liable to breakdowns in their present stage of development, and when this occurs potentially dangerous water must be furnished the consumers without treatment of any kind.

Collaboration with municipalities and their consulting engineers on sewage disposal and water supply studies is a function of the Bureau which has resulted both in more satisfactory solutions of these problems and the saving of many thousands of dollars to the taxpayers interested. The Bureau is in a position, through its specialized knowledge of local conditions through years of inspection work and detailed studies, to advise as to methods of treatment and character of finished product desirable in both water and sewage treatment.

Distinct progress has been made in the past year toward securing adequate and satisfactory sewage disposal and water supply throughout the State. Toms River, for years a town in which bad sanitary conditions prevailed, is now installing a modern sewerage system which should improve living and health conditions markedly. Bernardsville now has a filtration plant delivering a clear, safe water to the town in place of the former often turbid and unsatisfactory supply. Princeton has had plans approved for an exceptionally complete sewage disposal plant to replace the former northwest broad irrigation field, which was a menace to the health of residents nearby. Avon, the Agasote Millboard Company at Trenton, Washington and Haddonfield have all, through the influence of the Department, made highly desirable improvements to their existing sewage plants as a protection of the interested community in their health, comfort and property.

The operation of sewage treatment plants throughout the State has improved. Many municipalities no longer seem to think that when they have complied with the orders of the supervising agent of the State to install a sewage plant their obligations are ended, but are sufficiently interested in their plants to secure the best results possible. The beneficial results secured by the skilled supervision of sewage treatment plants is evident to most of the owners. This improvement in operation, as well as in the upkeep of the plant, is stimulated by the act requiring the licensing of the plant operators by this State; by the New Jersey Sewage Works Association, and the inspections made by the Engineering Bureau, the services of which are at the command of the operators who need help or instructions. As a result of this improvement it has been possible for the Bureau to decrease the number of inspections of a few hours' duration, generally made to encourage proper operation, and to spend more time at a number of the plants, actually taking charge of the sewage treatment works for a period long enough to enable the engineer not only to discover the defects in operation or equipment, but also to train the attendant in a proper method of maintenance.

In the latter part of the Bureau's report is information upon the 315 sewage treatment plants operating in this State.

Monthly investigations of the waters of the Pequannock River in and adjacent to Butler were instituted as a result of complaints to the Department regarding the discharge of trade wastes and domestic sewage from several factories, and domestic sewage from the municipalities of Butler and Bloomingdale. These investigations, followed by hearings before the members of the Board, resulted in several of the factories complying with the orders to cease pollution, and the passing of an ordinance by the Town of Butler to construct a complete sewerage system which will take care of all other wastes.

WATER.

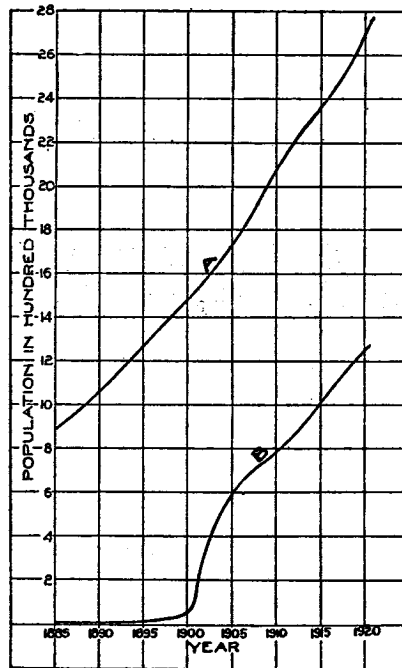
Following the construction of the first mechanical filtration plant in the State at Somerville in 1881, great progress has been made in the purification of the various surface water supplies of the State. As these supplies are most essential, especially to the

populous sections of North Jersey comprising the metropolitan district, successive steps have been taken toward utilizing and conserving these vital assets by the establishment of filtration plants and storage reservoirs to make use of all available surface water.

The charts following were prepared to show graphically the tremendous growth in the population which has to be supplied with potable water, and the several types of surface supplies provided:

Chart No. 1 has been plotted from urban populations taken from the census figures from 1885 to 1920 inclusive, together with figures for filtered water consumers over the same period.

CURVES SHOWING INCREASE IN A—URBAN POPULATION.
B—FILTERED WATER CONSUMERS.



(Chart No. 1)

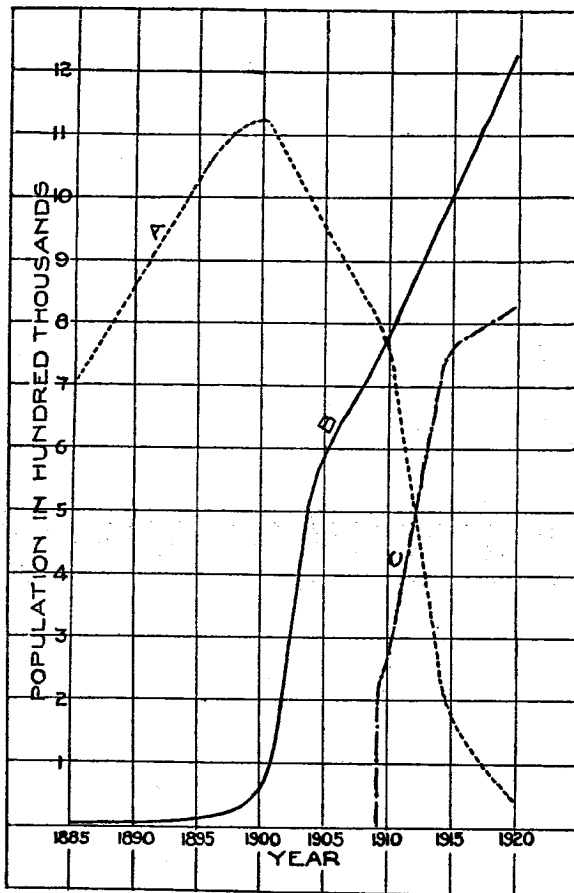
By urban population is meant population residing in municipalities of 2,500 or over. For the purpose of this curve all the population in the metropolitan district, consisting of six counties as follows—Hudson, Bergen, Passaic, Union, Essex and Middlesex—is taken as urban, as the large majority of the residents in these counties are served by public water supplies.

A sharp increase in the number of filtered water consumers is noted shortly after 1900, when the largest filter plant in the State, that at Little Falls, was constructed. Further construction took place in other municipalities so that from that time on the increase in the number of filtered water consumers kept pace with that of the urban population. The large difference between the urban population and the number of filtered water consumers is accounted for by the fact that three of the largest cities in the State, Newark, Jersey City and Camden, use unfiltered water.

Chart No. 2 illustrates the various phases of the development of surface water supplies from 1885 to 1920, showing the number of consumers in this period using the various types of supplies.

CURVES SHOWING POPULATION USING SURFACE SUPPLIES

A—UNTREATED.
B—FILTERED.
C—CHLORINATED.



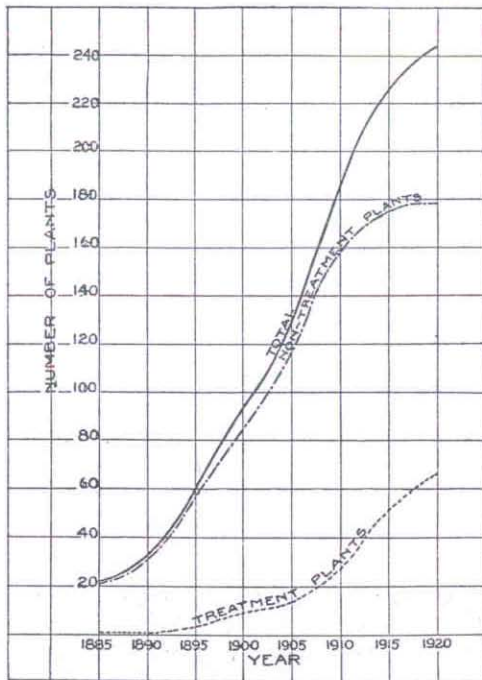
(Chart No. 2)

Curve "A", showing the number of consumers using untreated water, rises sharply from 1885 to 1900 due to the utilization of many watershed areas by various municipalities. The installation of filter plants around 1900, together with the substitution of some well supplies, caused a rapid decrease in the number of persons using untreated water, and the consequent increase as shown in Curve "B" of the population using filtered water. It will be noted that in 1920 untreated surface water consumption has practically reached a minimum, there being less than 50,000 people using that type of supply. Between 1905 and 1910 the development of chlorination (Curve "C") by means of liquid chlorine and hypochlorite of lime caused many municipalities and water companies using untreated surface water to install a disinfection apparatus for treatment of the water.

The data presented shows that approximately 46 per cent. of the urban population receives filtered surface water, 31 per cent. surface water which has only been chlorinated, and 1.5 per cent. untreated surface water. The supplies furnishing the above are all under the direct supervision of the Department, and unremitting care and attention is required that the people receive only water which is pure and safe to use. Attention may here be called to the fact that no typhoid epidemic from the use of a public water supply has resulted in the past year.

Chart No. 3, showing the increase in the number of water plants between 1885-1920, is made up of three curves, one for treatment plants, one for non-treatment plants, and one for the total of the two classes. By treatment plant is meant one which purifies or alters the character of the water in some way, such as iron removal, bacteria removal, carbon dioxide removal, etc. Non-treatment plants in New Jersey are mainly well installations, there being very few untreated surface supplies in proportion to the total number.

CHART SHOWING INCREASE IN WATER PLANTS.



(Chart No. 3)

The growth in the total number of plants has been almost uniform from 1890-1915. The falling off after 1915 was due in part to the war stopping new construction and in part to the enlargement of existing installations which obviated the necessity for new plants.

After 1905 the introduction of chlorine disinfection into the water works field caused an increase in the number of treatment plants, as many of the untreated surface supplies put in chlorinators. This of course checked the rate of growth of non-treatment water works, additions consisting only of new well supplies, so that the curve shows practically no increase in the number of installations.



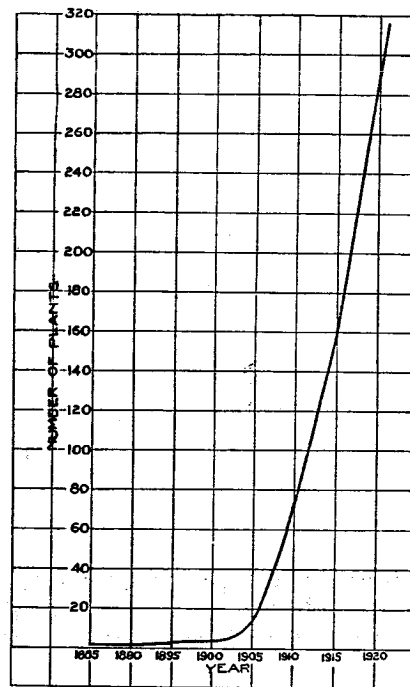
Map No. 1 shows the location of the various water treatment plants which are classified in three groups: Iron removal, surface filtration, and chlorine disinfection plants. The various watersheds used for public water supplies are shaded on the map. It will be noted that practically the entire northern section is used as a source of water supply. This region is adjacent to the more thickly populated portions of the State, especially the metropolitan district, and constant inspection is needed to prevent gross pollution.

SEWAGE.

As a general rule municipalities are permitted to discharge their sewage into the nearest stream, but it is required that they first purify it to such a degree that will prevent the establishment or maintenance of obnoxious conditions in the stream. It is necessary that a sewage plant effluent flowing into a potable water supply must be of higher purity than one discharged through a long ocean outfall to protect a bathing beach. The effluents discharged in or near shellfish areas require a higher degree of purification than those discharged into streams not used for water supplies.

Chart No. 4 shows the remarkable increase in the number of sewage treatment plants in the State between 1900 and 1920. The number of installations has increased almost uniformly since 1905. This increase has been due in large part to the influence of the various laws regulating sewage disposal in this State.

CURVE SHOWING INCREASE IN SEWAGE TREATMENT PLANTS.



(Chart No. 4)

Chart No. 5 shows the relation between the unsewered population of the State and the sewer population, with a separate curve for the population having both sewers and treatment plants for the disposal of sewage. Inasmuch as the urban population of the State greatly exceeds the rural population, it is natural to suppose that more of the residents will be connected to existing sewers, thus increasing the loads upon the present sewage treatment plants. This is shown in Curve "B" which indicates that in 1885 three times as many people were connected to sewers as were unconnected, and in 1920 over ten times as

DEPARTMENT OF HEALTH.

many. The number of people unconnected to sewers has remained almost constant, the growth of the population being principally in the larger cities. Curve "C" demonstrates the growth of population connected to sewerage systems provided with treatment plants.

POPULATION HAVING A—NO SEWERS, B—SEWERS, C—SEWERS AND TREATMENT PLANT.

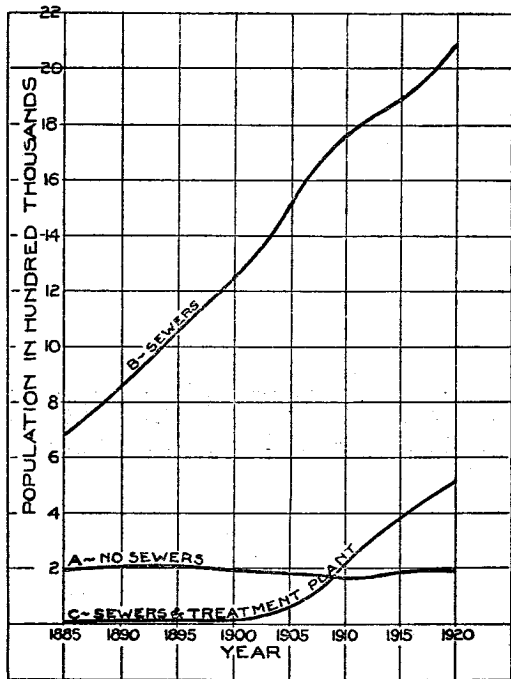


Chart No. 5)

The following is the mandatory writ of injunction which was obtained through the efforts of this Department against the Township of North Bergen, as mentioned previously in the Bureau's report.

DEPARTMENT OF HEALTH OF THE STATE OF NEW JERSEY,

Complainant,

vs.

TOWNSHIP OF NORTH BERGEN, IN THE COUNTY OF HUDSON,

Defendant.

In Chancery of New Jersey
On Bill, etc.
Mandatory Writ of Injunction.
(Returnable June 18, 1921).

New Jersey, to wit—The State of New Jersey to Township of [SEAL] North Bergen, in the County of Hudson, its officers, servants, employes and agents, and each and every of them,

GREETING:

Whereas, by a certain final decree made in our Court of Chancery of New Jersey, on the twenty-fifth day of March, A. D. nineteen hundred and twenty-one, in a certain cause therein depending, wherein Department of Health of the State of New Jersey is complainant, and the said Township of North Bergen, in the County of Hudson, is defendant, it was ordered, adjudged and decreed that a mandatory writ of injunction of this Court forthwith issue out of and under the seal of this Court to be directed to the defendant, Township of North Bergen, in the County of Hudson, commanding the said defendant that within thirty days from and after the service of said writ upon it, said Township of North Bergen, in the County of Hudson, absolutely cease its unlawful act of polluting the waters of the Hackensack River, Bellman's Creek, Cromakill Creek and Penhorn Creek, tributaries of the said Hackensack River, and the brooks and streams tributary to the said creeks and river by permitting sewage and other polluting matter to flow therein from its sewage system and drains, and that from and after thirty days from the service of said writ upon it, the said defendant, Township of North Bergen, in the County of Hudson, its officers, servants, employes and agents, absolutely desist and refrain from permitting any sewage and other polluting matter to flow from its sewage systems and drains into the waters of the said Hackensack River, Bellman's Creek, Cromakill Creek and Penhorn Creek, tributaries of the said Hackensack River, and the brooks and streams tributary to said creeks and river, and further commanding said defendant, Township of North Bergen in the County of Hudson, within said thirty days to make such other disposal of its sewage and other polluting matter as shall be approved of by the Department of Health of the State of New Jersey.

We, therefore, in consideration of the premises, do hereby strictly enjoin and command you, the said Township of North Bergen in the County of Hudson, your officers, servants, employes and agents, under the penalty that may fall thereon, that you and every of you, do, from and after thirty days from the service of this writ upon the defendant, Township of North Bergen in the County of Hudson, absolutely desist and refrain from permitting any sewage and other polluting matter to flow from its sewage systems and drains into the waters of said Hackensack River, Bellman's Creek, Cromakill Creek, and Penhorn Creek, tributaries of the said Hackensack River, and the brooks and streams tributary to said creeks and river, and further command that said defendant, Township of North Bergen, in the County of Hudson, within

said thirty days, make such other disposal of its sewage and other polluting matter as shall be approved of by the Department of Health of the State of New Jersey.

Witness, Edwin Robert Walker, our Chancellor, at Trenton the 17th day of May, A. D. nineteen hundred and twenty-one.

A true copy.

JESSE R. SALMON,
Clerk.

THOMAS F. McCRAN,
Attorney General of New Jersey,
Attorney for Complainant.

Table No. 1 lists the water treatment plants of the State, with data as to date of construction, type of plant, etc. The analyses are those made of delivered water as furnished for the consumers' uses and are averages of results secured at various inspections. They are not representative of the day to day condition of the water, as in most cases they are averaged from less than ten samples.

TABLE No. 1.—DATA UPON WATER TREATMENT PLANTS, INCLUDING AVERAGE RESULTS OF ANALYSES OF DELIVERED SAMPLES.

PLANT OR LOCATION.	SOURCE OF SUPPLY.	Date of Construction.	Date of Recon- struction.	TYPE OF PLANT.	Number of Inspections.	Color.	Turbidity in p. p. m.	Alkalinity in p. p. m.	Iron in p. p. m.	20° C. Bacteria per c. c.	37.5° C. Bacteria per c. c.	Per Cent. of Samples Containing B. Coll.
Allenhurst (Municipal),	Wells,	1900	.....	Lime, sedimentation and pressure filtra- tion for iron removal,	1	.....	.....	.....	.....	174	25	5
Altontown (Municipal),	Tributary to Docter's Brook,	1913	.....	Sedimentation and gravity filtration,	7	10	.....	15	0.3	112	.....	.....
Asbury Park (Municipal),	Wells,	1880	1894	Aeration, sedimentation and pressure fil- tration,	1	.....	.....	.....	.....	.....	.....	.....
Atlantic City (Municipal),	Wells and Absecon Creek,	1895	.....	Chlorine disinfection for surface supply,	8	44	.....	28	0.3	26	.....	.....
Barnegat Bay (Municipal),	Wells,	1892	1911	Aeration and pressure filtration for iron removal,	2	.....	.....	.....	.....	.....	.....	.....
Barnstable (Bernards Water Co.),	Delaware River, Emergency By-Pass,	1916	1920	Sand filtration and chlorine disinfec- tion,	10	16	5	48	0.8	21	13	.....
Blackwood (Blackwood Water Co.),	Wells, Emergency By-Pass,	1907	.....	Aeration and gravity sand filtration for iron removal,	2	22	15	50	2.2	455	400	.....
Bonaton (Jersey City),	Backaway River,	1905	1915	Hypochlorite and chlorine disinfection,	4	.....	.....	.....	.....	.....	.....	.....
Bound Brook (Bound Brook Water Co.),	Middle Brook,	1900	1916	Pressure filtration and chlorine disinfec- tion,	5	18	8	87	0.1	521	302	28
Bound Brook (Placataway Water Co.),	Wells, Emergency By-Pass,	1916	1917	Sedimentation, gravity sand filtration and chlorine disinfection,	2	.....	.....	.....	.....	.....	.....	.....
Bridgeton (Municipal),	West Branch of Cohansey River,	1877	1913	Sedimentation, gravity sand filtration and chlorine disinfection,	3	.....	.....	.....	.....	.....	.....	.....
Burlington (Municipal),	Delaware River, Emer- gency By-Pass,	*1877	1910	Aeration and lime treatment for CO ₂ re- moval,	3	.....	.....	.....	.....	.....	.....	.....
Cranbury (Cranbury Water Co.),	Wells,	1913	.....	Chlorine disinfection,	7	5	.....	40	0.2	8	7	.....
Dover (Municipal),	Wells and Springs,	1908	.....	Sedimentation, gravity sand filtration and chlorine disinfection,	4	8	1	13	0.3	15	8	.....
Elizabeth (Elizabeth Water Co.),	Wells and Elizabeth River,	1885	1919	Sedimentation, gravity sand filtration and chlorine disinfection,	10	10	1	13	0.3	54	13	8
Flemington (Flemington Water Co.),	Wells, Spring Hill South Branch River, .....	.....	.....	Chlorine disinfection for surface supply,	3	.....	.....	.....	.....	.....	.....	.....
Franklin (N. J. Zinc Co.),	Wells,	1880	1914	Sedimentation, gravity sand filtration and chlorine disinfection,	4	21	2	39	0.4	354	273	33
Franklin (N. J. Zinc Co.),	Walkhill River,	1880	1914	Sedimentation, sand filtration and hypo- chlorite disinfection for surface supply,	15	15	3	93	0.7	330	66	20
Franklin (N. J. Zinc Co.),	Walkhill River,	1915	.....	Sedimentation, gravity sand filtration and hypochlorite disinfection,	10	5	.....	42	0.2	44	25	22
Franklin (N. J. Zinc Co.),	Walkhill River,	1915	.....	Sedimentation, gravity sand filtration and hypochlorite disinfection,	8	15	3	11	0.2	75	39	10

* Prior to.

TABLE No. 1.—DATA UPON WATER TREATMENT PLANTS, INCLUDING AVERAGE RESULTS OF ANALYSES OF DELIVERED SAMPLES.—Continued.

PLANT OR LOCATION.	SOURCE OF SUPPLY.	Date of Construction.	Date of Recon- struction.	TYPE OF PLANT.	Number of Inspections.	Color.	Turbidity in p. p. m.	Alkalinity in p. p. m.	Iron in p. p. m.	20° C. Bacteria per c. c.	37.5° C. Bacteria per c. c.	Per Cent. of Samples Containing B. Coll.
Frenchtown (Frenchtown Water Co.),	Niaskawick Creek.	1900	1917	Infiltration gallery intake and chlorine disinfection.	12	15	18	40	0.2	13,500	2,000	0
Glen Gardner (N. J. T. S.),	Rocky Run Brook.	1907	1907	Sedimentation, gravity sand filtration and chlorine disinfection, lime for CO ₂ removal.	13	8	7	17	0.1	10	10	4
Gloucester (Municipal),	Wells, Emergency Supply from Newton Creek.	1882	1911	Gravity sand filtration for iron removal, chlorine disinfection, for emergency surface supply.	5	17	8	40	1.4	144	95	
Hoboken (Municipal),	Tributary of Passaic River.	1907	1913	Slow sand filtration.	3	29	29	49		1,070	131	43
Hoboken (N. J. T. S.),	Sage and Willow Brook.	1888	1913	Permut pressure filtration for iron removal.	10	20	2	20	0.1	1,146	153	57
High Bridge (Municipal),	Wells.	1907	1913	Chlorine disinfection.	10	16	2	20	0.1	1,146	153	57
Highlands (Municipal),	Wells.	1908	1913	Aeration and slow sand filtration for iron removal.	1	5	5	63	0.3	906	37	
Highlands (Municipal),	Wells.	1895		Gravity sand filtration for iron removal.	5	5	5	5	0.2	3	2	
Kenning (Ideal Beach Water Co.),	Wells.	1912		Aeration and gravity sand filtration for iron removal.	5	5	26	0.2	30			
Kenning (Kenning Water Co.),	Wells.	1907		Aeration and gravity sand filtration for iron removal.	5	5	10	0.5	29	5		
Kenning (Kenning Bench Water Co.),	Wells.	1908		Aeration and pressure filtration for iron removal.	5	5	16	0.5	28	6		
Keport (Municipal),	Wells.	1911	1913	Aeration and slow sand filtration for iron removal.	2	10	11	0.3	1			
Kirkwood (Lakeside Park Water Co.),	Wells.	1911	1913	Aeration and slow sand filtration for iron removal.	1	5	5	06	0.4	11	1	
Labwood (Lakewood Water, Light & Tower Co.),	Wells, Emergency Supply from French Metcalf creek.			Pressure filtration for iron removal.	1	5	20	0.5	15	4		
Lambertville (Lambertville Water Co.),	Springs and tributary to Lawrence River.	1877	1895	Slow sand filtration.	2	30	6	37	0.7	445	200	60
Little Falls (Montclair Water Co.),	Tombac River.	1862	1919	Gravity sand filtration and chlorine disinfection.	18	20	4	20	0.4	30	36	

* Prior to.

TABLE No. 1.—DATA UPON WATER TREATMENT PLANTS, INCLUDING AVERAGE RESULTS OF ANALYSES OF DELIVERED SAMPLES.—Continued.

PLANT OR LOCATION.	SOURCE OF SUPPLY.	Date of Construction.	Date of Recon- struction.	TYPE OF PLANT.	Number of Inspections.	Color.	Turbidity in p. p. m.	Alkalinity in p. p. m.	Iron in p. p. m.	20° C. Bacteria per c. c.	37.5° C. Bacteria per c. c.	Per Cent. of Samples Containing B. Coll.
Long Branch (West End Plant) (Tin Branch (Newman Springs Plant) (Tintern Manor Water Co.),	Whale Pond Brook.	1882		Sedimentation, pressure filtration and chlorine disinfection.	10	14	2	20	1.5	2,453	1,000	18
Lumberton (Lumberton Light, Water & Saverage Co.),	Flop and Yellow Brooks.	1882		Sedimentation, gravity sand filtration and chlorine disinfection.	1	150	3	4	1.5	256	104	18
Macopin (Newark),	South Branch of Rancocas Creek.	1905	1918	Chlorine disinfection.	5	3	19	0.5	180	30		
Maple Shade (Maple Shade Water Co.),	Pequannock River.	1909	1913	Chlorine disinfection.	1	10	7	2.1	62	8		
Matawan (Municipal),	Wells.	1912		Aeration and gravity sand filtration for iron removal.	5	180	5	1	2.0	5,730	281	20
Medford (Medford Water Co.),	Rancocas Creek.	1905	1918	Aeration and slow sand filtration for iron removal.	1	3	40	0.2	10	10		
Merchantville (Merchantville Water Co.),	Wells.	1908	1918	Chlorine disinfection.	5	180	5	1	2.0	5,730	281	20
Millville (Millville Water Co.),	Wells.	1886	1910	Aeration and pressure filtration for iron removal.	1	3	12	0.2	1			
Millville (Needles Water Co.),	Union Lake and Mauler River.	1878	1912	Gravity sand filtration and chlorine disinfection.	20	75	8	4	1.0	76	53	14
Monroeton (Municipal),	Wells, Emergency Supply from Rancocas Creek.	1903	1914	Aeration and pressure filtration for iron removal.	4	8	4	0.2	13	5		
Mount Holly (Mount Holly Water Co.),	Wells, Emergency Supply from Rancocas Creek.	1888	1914	Aeration, sedimentation and gravity sand filtration for iron removal.	3	5	17	0.8	63	6		
Mount Holly (Monmouth County Water Co.),	Wells.	1945	1887	Sedimentation, gravity sand filtration and chlorine disinfection.	8	25	5	7.2	48	11	0	
Mount Holly (Mont Holly Water Co.),	Well, Jumping Brook.			Pressure filtration and lime addition with sedimentation for iron removal.	3	15	5	28	0.2	1,000	24	20
New Brunswick (Municipal),	Wells, Emergency Supply at Whitesville.	*1906	1911	Aeration, sedimentation and gravity filtration and chlorine disinfection.	7	15	8	0.7	14	6	38	
New Brunswick (Municipal),	Lawrence Brook.	1873	1917	Sedimentation, gravity sand filtration and chlorine disinfection.	0	12	8	36	1.4	101	19	7
New Milford (Hackensack Water Co.),	Hackensack River.	*1887	1905	Sedimentation, gravity sand filtration and chlorine disinfection.	0	12	8	36	1.4	101	19	7

* Prior to.

TABLE NO. 1.—DATA UPON WATER TREATMENT PLANTS, INCLUDING AVERAGE RESULTS OF ANALYSES OF DELIVERED SAMPLES—Continued.

PLANT OR LOCATION.	SOURCE OF SUPPLY.	Date of Recon- struction.	Date of Recon- struction.	TYPE OF PLANT.	Number of Inspections.		Color.		Turbidity in p. p. m.		Alkalinity in p. p. m.		Iron in p. p. m.		20° C. Bacteria per c. c.		37.5° C. Bacteria per c. c.		Per Cent. of Samples Containing B. Coll.
					7	17	3	40	5	4	2.0	1,653	25	37.5°	23				
Orange (Municipal).	Rahway River.	1883	1916	Chlorine disinfection.	7	17	3	40	5	4	2.0	1,653	25	37.5°	23				
Pemberton (Pemberton Township Water, Sewerage & Light Co., Ply Co.).	North Branch of Rancocas River.	1884	1918	Chlorine disinfection.	15	87	5	4	2.0	1,653	25	37.5°	23	37.5°	23				
Phillipsburg (Lehigh Water Co., Pompton Lakes (Municipal).	Wells, Emergency Supply from Beaver Creek.	1906	1906	Aeration, sedimentation and gravity sand filtration for iron removal.	3	8	33	33	0.3	138	7	1,653	25	37.5°	23				
Rahway (Municipal).	Delaware River.	1917	1917	Chlorine disinfection, intake and hypo- chlorite disinfection.	3	26	5	28	0.3	38	20	25	37.5°	23					
Rahway (Municipal).	Springs with Infiltration Well.	1871	1907	Sedimentation, pressure filtration and chlorine disinfection.	7	3	3	30	0.2	468	31	13	37.5°	23					
Rahway (Middlesex Water Co.).	Rahway River.	1886	1910	Chlorine disinfection, chlorine disinfec- tion, pressure filtration and chloro- form disinfection.	13	15	3	48	0.1	670	756	33	37.5°	23					
Raritan (Somerville Water Co.).	Wells and Rahway River.	1881	1913	Sedimentation and chlorine disinfec- tion.	7	10	21	24	0.2	353	63	33	37.5°	23					
Red Bank (Municipal).	Wells.	1884	1884	Chlorine disinfection, pressure filtration and sedimentation.	11	20	15	54	0.2	407	86	37	37.5°	23					
Reedling (J. A. Reedling's Sons Co.).	Wells.	1905	1905	Hydrochloric disinfection.	4	15	15	55	1.0	17	14	1	37.5°	23					
Rumson (Rumson Improvement Co.).	Delaware River.	1905	1912	Sedimentation, gravity sand filtration and chlorine disinfection.	3	15	5	55	0.1	8	1	1	37.5°	23					
Salem (Municipal).	Wells and tributary of Alloway Creek.	1884	1884	Aeration and slow sand filtration for iron removal.	5	25	16	16	1.5	37	17	1	37.5°	23					
Shillman (N. J. State Village).	Rock Brook.	1882	1920	Aeration, sedimentation, sand and filtra- tion and chlorine disinfection.	2	18	78	78	0.8	17	14	1	37.5°	23					
Southville (H. B. Smith Machine Co.).	Wells.	1913	1914	Sedimentation, gravity sand filtration and hypochlorite disinfection.	17	21	0	99	0.8	100	642	46	37.5°	23					
South Amboy (Municipal).	Wells.	1900	1900	Aeration, gravity sand filtration and iron removal.	3	17	21	52	0.2	405	801	28	37.5°	23					
Trenton (Municipal).	Springs and Wells.	1920	1920	Aeration, sedimentation for iron and CO ₂ removal and chlorine disinfection.	1	5	20	8	0.5	80	1	1	37.5°	23					
Vincetown (Vincetown Water Co.).	Delaware River, South Branch of Rancocas Creek.	1801	1914	Sedimentation, gravity sand filtration and chlorine disinfection.	2	5	23	23	0.5	13	17	30	37.5°	23					
		1806	1910	Chlorine disinfection.	2	200	3	2	2.0	671	924	30	37.5°	23					

Report of the Laboratory of Hygiene.

R. B. FITZ-RANDOLPH, CHIEF.

This report covers the operation of the bacteriological laboratory, the food and drug laboratory, the water and sewage laboratory and the laboratory for shellfish investigations for the fiscal year ending June 30, 1921.

Bacteriological Laboratory, John V. Mulcahy, Senior Bacteriologist.—The bacteriological division examines specimens submitted by other bureaus of the department, by local boards of health and by physicians from suspected cases of communicable diseases.

It is very satisfactory to realize that the laboratory is used to the extent shown by the large number of specimens examined, which has reached the grand total of 40,997, a larger number than in any previous year. Besides the actual time spent in preparing and examining such a number of specimens, the receipt of so many specimens in one year increases all phases of the laboratory work, including the preparation of large quantities of culture media, the preparation and distribution of mailing cases for the collection and transmission of specimens, the volume of washing and sterilizing of glassware, and the clerical work involved in sending reports to physicians.

It is necessary to again emphasize the need of greater working space so that this work might be handled with less congestion and greater efficiency. While it is realized that plans have been suggested to provide more laboratory space in the future, some temporary relief is urgently needed until a new laboratory can be secured. The worst condition is in the wash room, which has only 75 square feet of available floor space and is occupied by four workers, who, by the nature of their work, are moving back and forth most of the day and constantly interfering with each others activities. This one room contains

two large steam sterilizers, one small steam sterilizer, one hot water boiler, two large ovens and several gas burners, which are in almost constant use and add greatly to the discomfort of the occupants, especially in the summer months. It is earnestly hoped that some immediate relief may be provided to remedy this condition. Crowded conditions exist elsewhere in the laboratory, but relief is not so urgent and may well wait until plans suggested for the enlargement of the laboratory mature.

It will be seen from the following tables that the specimens from suspected cases of gonorrhœa and syphilis show the greatest increase. This is due largely to the establishment of venereal disease clinics throughout the State which send in a large number of specimens. Undoubtedly another factor which tends to increase the number of these specimens is the educational propaganda carried on by the Bureau of Venereal Disease Control.

The table of miscellaneous examinations, Table IV, illustrates the kind and variety of material we are called upon to examine outside of the regular routine examinations of specimens from suspected cases of diphtheria, tuberculosis, typhoid fever, malaria, gonorrhœa and syphilis, and includes material from practically every disease of bacterial origin which is common to this part of the country. There has been over 100 per cent. increase in the number of these specimens examined over last year. This increase is largely due to the large number of specimens of feces and urine received from suspected carriers of the typhoid bacillus. Specimens are submitted by the epidemiologists connected with the Bureau of Local Health Administration when investigating the sources of infection in outbreaks of typhoid fever, from food handlers and persons employed on dairy premises, or from any other person whom they may suspect of being responsible for the infection.

There has been a number of small outbreaks of typhoid fever during the year and in each case a considerable number of specimens have been taken. Specimens of this character are also received from certain dairy new premises in the State, the owners desiring to check up their employees. Altogether 43 specimens were found to contain typhoid bacilli, but some of these positives were from secondary specimens in the same person.

Special outfits for the collection of these specimens will be furnished to any health officer or physician upon request.

During the year 75 dogs' brains have been examined and 36, or almost 50 per cent., found to be rabid. These rabid animals have been received from thirteen of the twenty-one counties of the State. Judging from these figures and the fact that more than twice as many dogs have been found rabid than were found to be rabid last year, it would appear that rabies is increasing in this State.

While there has been some improvement in the manner of preparing a dog's head for shipment to this laboratory, we still receive specimens that have been improperly packed and reach the laboratory infested with maggots and badly decomposed. In these cases either no examination whatever can be made, or else only an animal inoculation from some of the material, which delays the report from three to four weeks, as it is impossible in these cases to make a satisfactory microscopical examination. On all other specimens that are received in a good condition a microscopical examination can be made the day of receipt and a telegraphic report sent the same day on positive cases. It is, therefore, deemed advisable to again call attention to some of the necessary precautions to be followed in dealing with a rabid animal together with directions for collecting and sending specimens to the laboratory. Emphasis is laid on the importance of confining the animal if possible, instead of killing it at once, as it is more difficult to determine whether an animal was rabid or not if killed too early in the disease. Hold the dog in quarantine for ten days; dogs bitten may be infectious as much as six days before symptoms of the disease develop, so if ten days have elapsed without symptoms, there is no danger of rabies infection even though the dog should develop rabies later on. If the dog should die while in quarantine, or should be killed, the head can then be sent for examination for rabies.

HOW TO SHIP A HEAD TO THE LABORATORY.

When killing an animal, do not shoot it through the head or beat its brains out. Injury to the brain may prevent the finding of the Negri bodies in the brain cells and cause much time to be lost by the necessity of animal inoculation. Such loss of time has been known to be fatal to the person bitten.

As soon as the animal is killed, remove the head, wrap it in a cloth, place in a tight container—preferably a can with a close-fitting cover, soldered tight—pack the container in ice and express to the State Laboratory of Hygiene at Trenton without delay. Sawdust or other absorbent material should be used to prevent leakage of blood if a perfectly tight container cannot be secured. Care should be used to prevent wounding the hand or inoculating scratches or abrasions with saliva or blood while handling the head.

When shipping a head, mark package plainly with the name and address of the sender. Then write a letter to the laboratory, giving full particulars concerning the case. In this letter be sure to give all of the following points of information:

Sender's name, Address,
 Health Officer's name, Address,
 Name of owner of animal, Address,
 Description of animal whose head is sent,
 Where the animal was found,
 Whether animal was killed or allowed to die,
 How long sick,
 Diagnosis from symptoms,
 What other animals were bitten by this one,
 What human beings were bitten,
 Whether report of results of examination is to be sent by telegraph (collect) or mail, and to whom,

The following tables show that 15,522 specimens were examined for diphtheria; 6,639 for tuberculosis; 2,778 for typhoid fever; 271 for malaria; 2,276 for gonorrhœa; 11,825 for syphilis and 1,786 miscellaneous specimens, making a grand total of 40,997.

The following tables give a summary by months of the specimens examined from July 1, 1920, to June 30, 1921, inclusive:

TABLE I.

MONTH.	*DIPHTHERIA.						TUBERCULOSIS.					
	Primary.			Secondary.			Primary.			Secondary.		
	P ¹	N ²	U ³	P	N	U	P	N	U	P	N	U
July,	81	177	81	31	118	4	106	234	3	21	50	.....
August,	23	120	4	22	92	7	85	331	4	12	31	.....
September,	47	153	13	38	94	4	96	206	3	13	48	1
October,	131	388	22	99	307	10	90	277	1	22	52	1
November,	217	1351	20	188	477	10	67	325	12	23	89	.....
December,	203	1330	45	400	681	28	70	371	2	23	71	.....
January,	126	537	24	290	403	29	98	387	3	36	66	1
February,	131	815	18	208	333	15	31	345	2	24	62	.....
March,	113	550	13	140	398	9	109	483	5	51	92	.....
April,	125	759	31	274	376	16	97	388	3	45	36	.....
May,	146	560	13	210	652	13	89	423	4	34	93	1
June,	90	356	14	140	446	14	96	410	6	47	96	2
Total,	1348	7348	226	1946	4397	159	1061	4290	48	351	853	6

TABLE I—(Continued).

MONTH.	TYPHOID FEVER.						MALARIA.					
	Primary.			Secondary.			Primary.			Secondary.		
	P	N	U	P	N	U	P	N	U	P	N	U
July,	13	121	12	6	7	2	2	28	1	.....	.....	.....
August,	33	387	24	9	29	4	1	38	3	.....	.....	.....
September,	114	643	158	24	30	12	2	32	1	.....	.....	.....
October,	24	114	9	19	16	6	.....	17	.....	.....	.....	.....
November,	20	112	6	6	18	2	1	16	1	.....	.....	.....
December,	9	131	1	2	7	1	1	6	.....	.....	.....	.....
January,	2	72	5	2	10	.....	.....	9	.....	.....	.....	.....
February,	7	52	5	3	8	.....	.....	3	.....	.....	.....	.....
March,	6	101	7	.....	6	1	.....	17	.....	.....	.....	.....
April,	6	130	4	2	18	.....	.....	20	.....	.....	.....	.....
May,	10	69	2	1	1	1	1	22	3	.....	.....	.....
June,	4	104	2	3	8	.....	.....	1	25	1	.....	.....
Total,	248	2038	235	77	153	29	9	233	13	.....	.....	14 2

* During the year 59 tests were made for the virulence of the diphtheria bacillus.

(¹) P=Positive.

(²) N=Negative.

(³) U=Unsatisfactory.

TABLE II.

MONTH.	GONORRHOEA.						MISCELLANEOUS.					
	Primary.			Secondary.			Primary.			Secondary.		
	P	N	U	P	N	U	P	N	U	P	N	U
July,	50	86	7	6	20	2	23	43	5	2	1	.....
August,	58	85	12	8	26	1	21	64	4	4	1	3
September,	59	84	11	16	27	2	24	362	4	3	17	1
October,	48	86	5	6	20	1	34	153	13	3	74	14
November,	40	69	14	6	31	.....	.....	27	144	9	6	34
December,	32	74	7	8	38	.....	.....	27	25	9	13	39
January,	34	68	4	5	14	3	32	19	3	10	27	7
February,	42	69	3	0	17	1	35	20	6	8	9	.....
March,	38	118	1	11	27	1	32	28	5	6	4	.....
April,	46	141	3	10	37	2	29	39	4	3	35	3
May,	45	116	7	12	26	2	39	45	2	6	19	1
June,	56	207	7	10	43	2	29	30	.....	11	19	1
Total,	548	1206	81	98	326	17	352	972	69	79	279	35

TABLE III.

MONTH.	COMPLEMENT FIXATION FOR SYPHILIS. (Guinea pig heart antigen.)													
	Primary.							Secondary.						
	4+	3+	2+	+	±	-	U	4+	3+	2+	+	±	-	U
July,	83	4	14	7	5	469	52	65	5	26	3	21	191	16
August,	83	4	10	4	9	292	56	58	9	14	4	8	110	17
September,	96	8	18	1	10	359	25	59	8	17	7	11	168	11
October,	103	6	10	6	4	447	24	79	5	16	8	11	142	19
November,	82	6	14	5	7	407	22	50	9	20	7	6	128	8
December,	141	5	14	5	8	391	33	93	6	18	4	7	119	14
January,	108	6	14	8	5	543	31	53	7	16	8	4	122	12
February,	83	1	12	7	8	331	34	59	6	21	8	1	124	11
March,	115	5	17	7	8	537	96	104	9	34	9	10	149	14
April,	101	4	12	6	5	581	50	63	11	14	8	6	138	14
May,	107	9	16	4	7	624	53	81	14	24	4	6	171	28
June,	111	6	22	3	1	714	70	59	5	17	3	2	185	22
Total,	1215	67	173	56	86	6445	536	823	94	237	73	93	1747	136

MONTH.	COMPLEMENT FIXATION FOR SYPHILIS. (Cholesterinized Antigen.)													
	Primary.							Secondary.						
	4+	3+	2+	+	±	-	U	4+	3+	2+	+	±	-	U
July,	131	9	11	.....	434	52	142	14	14	3	.....	138	16	
August,	127	8	5	1	.....	361	56	126	4	5	.....	68	17	
September,	152	6	15	1	.....	518	35	120	11	18	4	.....	117	11
October,	130	4	8	2	.....	432	34	131	10	21	4	.....	85	19
November,	118	6	11	1	.....	382	32	96	8	14	5	.....	97	8
December,	193	8	10	3	.....	350	33	145	5	7	.....	87	14	
January,	142	5	10	5	1	521	31	98	13	7	4	.....	90	12
February,	107	4	12	2	.....	512	34	113	3	15	1	.....	88	11
March,	161	10	11	2	.....	558	56	182	16	14	3	.....	106	14
April,	130	6	9	2	.....	532	50	111	5	14	4	.....	108	14
May,	152	7	14	.....	594	43	144	10	23	.....	122	28		
June,	160	9	18	7	1	662	70	111	10	26	7	.....	117	22
Total,	1703	85	134	26	2	6086	536	1517	108	178	39	1	1229	186

The table on the Complement Fixation Tests for Syphilis is arranged differently than previous tables published in earlier reports of this Bureau, and is designed to show the results of the examinations with each antigen separately. In this laboratory each specimen is tested with two antigens, one an alcoholic extract of guinea pig heart, the other an extract of heart muscle reinforced with the addition of 0.2 per cent. cholesterin. Fixa-

tion is done in the ice box for a period of four hours when the amboceptor and sheep cells are added and the tests then put in a water bath at 37° C. until hemolysis of the controls is complete, when readings are made. By this method a greater number of true reactions are obtained than is possible where fixation has taken place at 37° C. for a shorter period, as is done in some laboratories in the State. It is essential, therefore, that the physician who attempts to compare results from two laboratories using different antigens and different methods of fixation must have knowledge of the methods used so that he may be in a position to interpret the significance of the reaction. We are sometimes asked to explain the differences in results obtained on the same specimen of serum which has been submitted to us for examination and to another laboratory at the same time, and usually this discrepancy is explainable by the difference in the methods used. Until such time as methods and reporting results are standardized there will continue to be such differences in results. In the methods used here, when any degree of reaction is obtained with the plain antigen, the cholesterinized antigen, being more sensitive, will give the strongest reaction obtainable, which is + + +. It frequently happens, especially in old or treated cases, that no reaction will be obtained with the plain antigen, but a + + + reactions be obtained with the cholesterinized antigen. When such a reaction is obtained on a primary case a diagnosis of syphilis may be made, especially if such a reaction persists, and in old or treated cases such a reaction indicates the need of further treatment. The greatest value of the cholesterinized antigen is in old or treated cases, as negative reactions are obtained under treatment with the plain antigen, considerably earlier than with the cholesterinized antigen, so that if the physician were dependent alone on the plain antigen, treatment would be discontinued too early. The plain antigen as used here serves as a check, especially in cases for diagnosis on the more sensitive cholesterinized antigen.

It will be seen from an examination of the above table that a greater number of + + + + results are obtained on primary cases with the cholesterinized antigen than with the plain antigen,

and that in the secondary cases, which are practically all treated cases, the number of + + + reactions obtained with the cholesterinized antigen is almost double that obtained with the plain antigen.

It is regrettable that the laboratory is obliged to report so many specimens unsuitable for examination, which is due in many instances to failure on the part of the physician to prepare the specimen in accordance with the directions on the slip enclosed in the container. The greater number of these unsatisfactory reports are necessitated by the receipt of specimens where no attempt had been made before mailing to separate the serum from the clot. This results, especially in the summer months, in the specimen reaching the laboratory badly hemolyzed, making impossible the separation of any suitable serum for examination. The number of unsatisfactory specimens shown in this table is altogether too large and should be unnecessary if specimens of blood were collected and treated as directed. By following the directions, unsatisfactory reports due to other causes than hemolysis would be largely avoided.

Table IV.—The following table shows the number and various kinds of miscellaneous specimens examined in the laboratory from July 1, 1920, to June 30, 1921, inclusive:

Specimen for	Unsatis-		
	Positive.	Negative.	factory.
Rabies,	36	36	8
B. tuberculosis (pleural and spinal fluid, urine and various other lesions),	16	35	3
B. typhosus (feces, urine, blood and water),	43	1,013	70
B. para-typhosus (blood), .....	..	22	..
Bacterial infection (pus, body fluids, feces, blood, sputum, urine, etc.),	216	35	16
Gonococcus infection (eye),	2	3	..
Gonococcus infection (urine),	2	9	..
Ophthalmia neonatorum,	110	69	6
Pneumonia,	1	2	..
Treponema pallida,	3	18	1
Miscellaneous,	2	9	..
Total,	431	1,251	104

Table V.—The following table shows the number and species of animals examined for rabies from July 1, 1920, to June 30, 1921, inclusive:

Dogs—Positive, 36; negative, 31; unsatisfactory, 8
Cats—Negative, 4
Cows—Negative, 1.

Table VI.—Following are the towns arranged by counties, from which animals found to be rabid were received from July 1, 1920, to June 30, 1921, inclusive:

Bergen County—Grantwood, 1; Hackensack, 2; Tenafly, 1.
Burlington County—Riverside, 1; Roebing, 1.
Camden County—Berlin, 2; Haddonfield, 1.
Cumberland County—Vineland, 1.
Essex County—East Orange, 1.
Mercer County—Hopewell, 2; Trenton, 1.
Middlesex County—Carteret, 1; Dunellen, 1; New Market, 1.
Monmouth County—Asbury Park, 1; Matawan, 4.
Morris County—Dover, 1; Succasunna, 1.
Salem County—Pennsville, 1.
Somerset County—Bernardsville, 1.
Sussex County—Hamburg, 1; Newton, 1.
Union County—Elizabeth, 3; Plainfield, 3; Rahway, 1; Westfield, 1.

Table VII.—The following table shows the number of outfits supplied to repositories maintained throughout the State and to physicians who are not conveniently located near repositories, from July 1, 1920, to June 30, 1921, inclusive:

Diphtheria—Regular outfits,	15,644
Serum tubes and swabs,	4,125
Extra swabs,	4,750
	24,519
Tuberculosis outfits,	10,242
Typhoid fever outfits,	4,222
Malaria outfits,	1,119
Gonorrhoea outfits,	3,976
Syphilis outfits,	12,283
Feces and urine outfits,	941
Ophthalmia neonatorum outfits,	1,385
Silver nitrate outfits,*	343
Total,	59,030

Chemical Laboratory, John E. Bacon, Senior Chemist—Shellfish Investigations.—People who eat raw shellfish have a right to expect this article of food to be free from organisms which cause typhoid fever and other enteric diseases, and an endeavor to have

*In August, 1920, a new outfit was adopted by this Department and since that date these outfits were distributed by the Bureau of Child Hygiene.

the shellfish grown in this State justify this confidence is the reason for the continued supervision of the waters in which they are grown. As by far the largest number of oysters grown in the State are floated in the Maurice River, the State oyster inspection boat is utilized during the major portion of the oyster season in the vicinity of the Maurice River Cove. During the earlier summer months, when the shipment of oysters in most places is curtailed, inspections are made of various other oyster grounds. It is also the aim each year to make a very thorough inspection of the watersheds and examination of waters and oysters in a particular section so the Department may have sufficient data to determine whether such grounds are suitable for the growing of oysters. This has been accomplished over almost all the important oyster districts of the State with the exception of the Shrewsbury River, which will be investigated during the next year. The laboratory apparatus on the boat makes it ideally equipped for field investigations of all kinds, and as the bulk of the work of oyster investigations is completed, a large part of the future usefulness of this floating laboratory will be for stream investigations in connection with the work of the Engineering Bureau. Each year the routine examination of shellfish, waters in which they are grown and sanitary inspections of floating grounds is, of course, necessary, as otherwise the improvement in sanitary conditions surrounding the cultivation of shellfish cannot be maintained.

Navesink River.—Epidemiological investigations having cast suspicion upon the consumption of raw oysters from the Navesink River as being responsible for typhoid fever in Red Bank, and past investigations having shown that parts of this river were unsuitable for the cultivation of shellfish, a complete survey was made of this area with the view of ascertaining what areas would have to be condemned. This survey consisted in the examination of a large number of water and oyster samples and float experiments. Approximately 500,000 gallons of sewage effluent per day from the town of Red Bank enters the Navesink River, which also receives pollution from various river craft, street washings and wastes from the town and the effluent from private disposal plants of residences along its banks.

Floats were placed in the river at the sewer outlet and allowed to drift during the entire ebb tide, and it was found that they would travel nearly to the Oceanic bridge. The bacteriological examination of the waters shows that sections 1, 2 and 3 are very badly polluted, while sections 4 and 5 are polluted but to a less extent. Four different stations were established between Guyon's Point and Oceanic bridge and oysters sampled from those sections at various times. The results obtained are in accordance with the water results, and show that the river becomes less polluted as it approaches Oceanic bridge, due to dilution. As a result of all these findings the Department officially condemned that portion of the Navesink River west of Oceanic bridge. However, as that portion of the river east of Guyon's Point is materially less polluted, it was believed that shellfish from this area might be safely removed and used as food during the so-called hibernation period when the physiological activities of the oysters are greatly reduced. As the shellfish west of this point grow in water which is grossly polluted, it was deemed unwise to permit their use at any time during the year. Conspicuous signs were posted at various points along the river stating that these grounds were condemned and persons removing shellfish without a permit were liable to a fine of \$100.00.

Condemnation of this area does not mean that the oystermen are debarred from using these waters for shellfish culture, as under the law the Department is empowered to issue permits for the removal of shellfish from condemned areas and allow their transplantation to other waters, as it has been shown that shellfish will cleanse themselves in time of harmful organisms if replanted in clean water. Most of the rivermen have taken advantage of this opportunity to remove clams and oysters from the condemned area and have replanted them east of the Oceanic bridge. At a public meeting held in Borough Hall of Red Bank representatives of the Department met with the rivermen and others interested and explained in detail the nature of the investigations, the reasons why condemnation of this river was necessary, and pointed out that no financial loss to the oyster growers should result. The method of issuing permits was outlined and those working on the river have taken advantage of them. Inspections by this Department and the Board of Health of Red

Bank from time to time have shown that the spirit of the law is being complied with, only one violator having been detected.

Below is a tabulation of bacteriological findings of the waters of the Navesink River.

Section 1 (embraces that part of the river located between the old railroad bridge and the present Central Railroad bridge). No oysters are grown in this area.

Total number of samples collected,	10	
Number showing bacillus coli in 1 c.c.,	10	= 100%
Number showing bacillus coli in 0.1 c.c.,	10	= 100%
Number showing bacillus coli in 0.01 c.c.,	6	= 60%

Section 2 (embraces that part of the river extending from the present Central Railroad bridge to the Merchant Steamboat wharf, a distance of 880 yards). Within this section some oysters are obtainable and in the past they have been tonged by local pushcart venders and sold in the town.

Number of samples collected,	30	
Number showing bacillus coli in 1 c.c.,	30	= 100%
Number showing bacillus coli in 0.1 c.c.,	25	= 83%
Number showing bacillus coli in 0.01 c.c.,	12	= 40%

Section 3 (Comprises that portion of the river extending from the Merchant Steamboat wharf to Guyon's Point, a distance of 1,550 yards). This section includes the pleasure boat area.

Number of samples collected,	45	
Number showing bacillus coli in 1 c.c.,	43	= 96%
Number showing bacillus coli in 0.1 c.c.,	28	= 62%
Number showing bacillus coli in 0.01 c.c.,	7	= 16%

Section 4 (comprises that part of the river extending from Guyon's Point to Brown's Dock, a distance of 1,880 yards). Most of the oysters grown in the river are located within these limits.

Number of samples collected,	40	
Number showing bacillus coli in 1 c.c.,	31	= 78%
Number showing bacillus coli in 0.1 c.c.,	9	= 26%
Number showing bacillus coli in 0.01 c.c.,	1	= 3%

Section 5 (embraces that portion of the river between Brown's Dock and Oceanic bridge, a distance of 2,000 yards). Comparatively few oysters are in this area.

Number of samples collected,	50	
Number showing bacillus coli in 1 c.c.,	20	= 40%
Number showing bacillus coli in 0.1 c.c.,	2	= 4%
Number showing bacillus coli in 0.01 c.c.,	0	= 0%

Station Number.	SCORES OF OYSTER SAMPLES. Location and Scores.	Average Score.
4	Opposite Guyon's Point—23, 23, 5, 3, 230, 320, 32, 5,	80.1
3	Opposite McClee's Creek—2, 14, 32, 230, 3, 5,	47.7
2	Opposite Brown's Dock—3, 5, 5, 14, 5, 50, 5, 32, 5, 4,	12.8
1	Oceanic Bridge—23, 23, 2, 1, 32, 14, 5, 41,	17.6

All oyster samples were taken near the end of ebb tide, as near low water as possible, with a view to obtaining results representing the worst conditions.

We believe that the method of allowing the removal of these oysters from the condemned area under carefully regulated conditions will not impose a financial burden upon shellfish growers. If the local health authorities will do their part in the patrolling of these areas the past practice of tonging oysters from grossly polluted waters and selling them in the borough of Red Bank will be stopped.

Shrewsbury River.—Time did not permit a complete investigation of this river, but an inspection of the sewage disposal at Camp Vail showed that Parker's Creek, a tributary to the Shrewsbury River, is unsuitable for oyster culture. The department, therefore, condemns both branches of this creek. Permits for the removal of oysters from this condemned area to pure water have been issued to oystermen requesting them.

Cohansey River Section.—The greatest sources of pollution of the Cohansey River are the two disposal plants at Bridgeton. The distance from these plants to Greenwich Pier is about sixteen miles, and previous float experiments have shown that this sewage required about three weeks to reach the oyster floats. Sanitary surveys of conditions at Greenwich Pier show that the danger of pollution around the oyster sheds is remote. Of the twenty samples of water collected from Bridgeton to Fairton Creek, a distance of about four miles,

55%	shows the presence of bacillus coli in 1 c.c.
45%	shows the presence of bacillus coli in 0.1 c.c.
15%	shows the presence of bacillus coli in 0.01 c.c.

Samples collected in the reach at Greenwich Pier, where oysters are floated:

Number of samples collected,	40	
Number showing bacillus coli in 1 c.c.,	24	= 60%
Number showing bacillus coli in 0.1 c.c.,	8	= 20%
Number showing bacillus coli in 0.01 c.c.,	0	= 0%

Scores of floated oysters—0, 3, 1, 1, 5, 4, 230, 32, 3, 4. One sample shows the abnormally high score of 230, for which no explanation is available.

Due to the large amount of canning house wastes which are emptied into the Cohansey River at Bridgeton during the warm

weather the river at times becomes offensive, which indicates that the available supply of oxygen is being depleted. The point to which the supply of oxygen of a stream may be lowered without the river becoming offensive has not been definitely established, but it is generally conceded that when the dissolved oxygen is less than 25 per cent. of saturation a nuisance is likely to occur. In order to determine the condition of the river during the canning season an investigation was made during September with the following results:

Samples were collected, spaced equally, from the upper bridge at Bridgeton to Fairton Creek on the low and high water with results as follows:

Sample.	Per Cent. Saturation With Oxygen.		Tide.
	Sept. 21.	Sept. 22.	
1,	64.8	66.7	Low water
2,	57.0	43.5	
3,	46.7	33.6	
4,	19.4	24.3	
5,	25.2	9.3	
6,	25.0	10.6	
7,	23.2	15.5	
8,	35.9	28.5	
9,	41.5	35.9	
10,	51.3	54.1	
11,	64.1	65.0	
12,	71.4	68.6	
	Sept. 21.	Sept. 17.	High water
1,	15.5	30.2	
2,	21.3	35.0	
3,	18.7	63.6	
4,	41.8	68.0	
5,	46.7	95.0	
6,	70.2	91.3	
7,	86.0	87.0	
8,	91.1	96.0	
9,	97.7	93.1	
10,	98.9	91.7	
11,	100.3	89.5	
12,	97.5	91.5	

Weather: Sept. 17, mod. west wind, clear, water 22 C.
 Sept. 21, mod. east wind, clear, water 20 C.
 Sept. 22, mod. south wind, clear, water 20 C.

In order to compare the river in this area with the area from Fairton Creek to Greenwich Pier series of samples were collected

in the latter area at low and high water with the following results.

Sample.	Per Cent. Saturation With Oxygen.	
1,	71.0	Tide: Low water. Date: Sept. 17, 1920. Weather: Mod. northeast wind, clear, water 22 C.
2,	68.7	
3,	65.0	
5,	84.0	
5,	80.3	
6,	78.4	
7,	79.2	
8,	67.1	
1,	76.5	Tide: Low water. Date: Sept. 18, 1920. Weather: Mod. southwest wind, clear, water 22 C.
2,	77.9	
3,	67.4	
4,	70.5	
5,	75.2	
6,	77.3	
7,	78.4	
8,	78.3	
9,	78.0	
10,	83.5	
11,	88.0	
12,	67.0	
1,	80.6	Tide: High water. Date: Sept. 18, 1920. Weather: Mod. southwest wind, clear, water 22 C.
2,	80.8	
3,	81.6	
4,	81.0	
5,	79.3	
6,	76.5	
7,	80.3	
8,	76.6	
9,	91.7	
10,	90.5	
11,	99.5	
1,	84.5	Tide: High water. Date: Sept. 19, 1920. Weather: Mod. north wind, clear, water 22 C.
2,	81.8	
3,	78.7	
4,	82.0	
5,	74.3	
6,	74.6	
7,	89.0	

The portion of the Cohansy River which receives the cannery wastes is between the upper bridge at Bridgeton and the lower sewage disposal plant. Series of samples were collected at low and high water between these limits as follows:

Sample.	Per Cent. Saturation with Oxygen.	
1 (upper bridge),	74.9	Date: Sept. 22, 1920.
2 (lower bridge),	53.3	Tide: low water.
3 (Moore's boat house),	33.9	Weather: mod. south wind,
4 (Ritter Catsup plant),	47.6	clear, water 19 C.
5 (disposal plant),	30.2	
1 (upper bridge),	3.7	Date: Sept. 22, 1920.
2 (lower bridge),	10.5	Tide: high water.
3 (Moore's boat house),	22.0	Weather: mod. south wind,
4 (Ritter Catsup plant),	27.4	clear, water 19 C.
5 (disposal plant),	45.5	

A comparison of the dissolved oxygen results obtained last year with those obtained on previous years shows that the available supply of dissolved oxygen in the water is becoming less each year. The river may become a nuisance in a short time if the quantity of canning house waste increases. The result of the investigation was forwarded to the officials of Bridgeton in December, 1920, with a statement as to what they might expect unless polluting material entering the river is kept within reasonable bounds.

Delaware Bay.—In co-operation with a representative of the Bureau of Shellfisheries, an investigation of the Delaware Bay embracing the mouths of Stowe Creek and the Cohansy River was made during the latter part of October. It was thought that the large quantities of trade waste from the vicinity of Penn's Grove and points north of this area might be responsible for the alleged death of spat or seed oysters.

Series of samples were collected on October 20 at slack, low water from Ship John Light to the mouth of the Cohansy; at each sampling point two dissolved oxygen samples were collected, one from near the bottom and the second from middle depth. Bacteriological and alkalinity samples were collected about four feet below the surface. Analyses of these samples gave following results:

Sample.	Alkalinity ppm.	Per Cent. Chlorine.	Dissolved Oxygen ppm.	Per Cent. Saturation at 18° C.	Bacteria per c. c. at 20° C.	B. Coll Confirmed on Endo
1	58.0	.98	bottom 7.7	S1	46	1 in 5 c. c.
2		.98	middle 7.7	S1	46	1 in 5 c. c.
3	60.0	1.08	bottom 7.9	S3	50	0 in 5 c. c.
4		1.04	middle 7.9	S3	31	0 in 5 c. c.
5	50.0	1.02	bottom 7.9	S3	46	0 in 5 c. c.
6		1.00	middle 7.8	S2	37	0 in 5 c. c.
7	60.0	1.01	bottom 7.8	S2	30	0 in 5 c. c.
8		1.02	middle 7.9	S3	40	0 in 5 c. c.
9	58.0	1.02	bottom 7.9	S3	41	0 in 5 c. c.
10		1.04	middle 8.2	S6	60	0 in 5 c. c.
11	60.0	1.01	bottom 7.9	S3	44	0 in 5 c. c.
12		1.08	middle 8.0	S4	33	1 in 5 c. c.

On October 21 a set of samples were similarly collected at slack, low water from a point at the easterly edge of the channel opposite Stowe Creek to its mouth. Results of these analyses are given herewith:

Sample.	Alkalinity ppm.	Per Cent. Chlorine.	Dissolved Oxygen ppm.	Per Cent. Saturation at 18° C.	Bacteria per c. c. at 20° C.	B. Coll Confirmed on Endo
13	58.0	.97	bottom 7.8	S2	40	2 in 5 c. c.
14		.92	middle 7.8	S2	28	0 in 3 c. c.
15	57.0	.94	bottom 7.7	S1	80	0 in 5 c. c.
16		.92	middle 7.7	S1	130	1 in 5 c. c.
17	57.0	.90	bottom 7.7	S1	150	0 in 5 c. c.
18		.77	middle 7.9	S3	240	2 in 5 c. c.
19	56.0	.86	bottom 7.7	S1	126	1 in 5 c. c.
20		.80	middle 7.7	S1	200	1 in 5 c. c.
21	55.0	.82	bottom 7.8	S2	90	0 in 5 c. c.
22		.79	middle 7.8	S2	80	2 in 5 c. c.
23	55.0	.82	bottom 7.6	S0	150	0 in 5 c. c.
24		.80	middle 7.6	S0	160	1 in 5 c. c.

These results do not indicate pollution. The high dissolved oxygen shows that trade wastes are so greatly diluted before reaching this point of the bay as to be negligible. It was noted, however, that large areas of the river were covered, at times, with a film of oil which is likely to kill oyster larvæ.

Maurice River Section.—The work at Maurice River consisted in the analyses of samples of oysters from the grounds of Maurice River Cove, after floating in Maurice River, and a bacteriological examination of samples of water from Maurice River from the floating grounds to Millville. The usual inspections of the banks of Long Reach on both the Bivalve and Maurice River sides were made. As a result of the action of the Maurice River Township health authorities, the Pennsylvania

Railroad Company built two additional sanitary toilets, the presence of which will undoubtedly minimize the tendency which previously existed to defecate along the banks of the river. The scavenger system was found to be operating satisfactorily.

The total number of samples collected from the Maurice River was 149. These were collected at intervals between Long Reach and the Main Street bridge at Millville.

Section 1 (reaches from the mouth of the river to a point just above Leesburg).

Number of samples collected,	39
Number showing bacillus coli in 1 c.c.,	21 = 54%
Number showing bacillus coli in .1 c.c.,	14 = 36%
Number showing bacillus coli in .01 c.c.,	1 = 2.6%
Number showing bacillus coli absent,	4 = 10%

Section 2 (includes those portions of the river in the vicinity of Dorchester, Mauricetown and Port Elizabeth).

Number of samples collected,	40
Number showing bacillus coli in 1 c.c.,	19 = 50%
Number showing bacillus coli in .1 c.c.,	9 = 22.5%
Number showing bacillus coli in .01 c.c.,	4 = 10%
Number showing bacillus coli absent,	7 = 17.5%

Section 3 (embraces that portion of the river in the vicinity of Buckshutem to a point a short distance below the Millville sewage disposal plant).

Number of samples collected,	40
Number showing bacillus coli in 1 c.c.,	17 = 42.5%
Number showing bacillus coli in .1 c.c.,	14 = 35%
Number showing bacillus coli in .01 c.c.,	5 = 12.5%
Number showing bacillus coli absent,	4 = 10%

Section 4 (includes that portion of the river in the vicinity of Millville and the sewage disposal plant).

Number of samples collected,	30
Number showing bacillus coli in 1 c.c.,	10 = 33%
Number showing bacillus coli in .1 c.c.,	14 = 45%
Number showing bacillus coli in .01 c.c.,	3 = 10%
Number showing bacillus coli absent,	3 = 10%

In Long Reach 40 samples were collected on flood tide and 40 on low tide. The results were as follows:

	High Tide.	Low Tide.
Number of samples collected,	40	40
Number showing bacillus coli in 1 c.c.,	17 = 42.5%	16 = 40%
Number showing bacillus coli in .1 c.c.,	6 = 15%	10 = 25%
Number showing bacillus coli in .01 c.c.,	0	2 = 5%
Number showing bacillus coli absent,	17 = 42.5%	12 = 30%

Number of samples of salt oysters examined,	12
Number of samples of salt oysters scoring under 23,	12 = 100%
Number of samples of floated oysters examined,	66
Number of samples of floated oysters scoring under 23,	62 = 94%
Number of samples of floated oysters scoring between 23 and 50,	4 = 6%

Atlantic City Section.—During the past year the legislature amended the shellfish act in such manner that it is possible for any justice of the peace, police officer, inspector or representative of the Department of Health to arrest persons working on the condemned shellfish areas unless provided with a permit by this Department. The fine for this offense is \$25.00, and the fact that these offenders can be taken before any police magistrate or justice of the peace for trial has simplified the procedure to such an extent that we believe it is now possible to prevent the removal of clams from the polluted thoroughfares back of Atlantic City.

During the months of May and June the captain of the State boat "Inspector" was detailed to Atlantic City and with the assistance of one of the Atlantic City policemen a constant patrol of the condemned area was made and some violators apprehended. The Atlantic City Board of Health have detailed a man for this work as have also the Ventnor Board of Health. A boat has been furnished by the municipal authorities and there is no reason why patrolling these areas should not result in breaking up the practice of removing clams from these grossly polluted thoroughfares. This practice has been in existence for years, but only since the passage of this act has it been possible to prevent the selling of these dangerous clams to the people of Atlantic City. It is impossible for the State Department of Health to keep men stationed in this vicinity to patrol these areas at all times, and if the practice is to be stopped it is absolutely essential that Atlantic City keep a man and boat on the job the year round. We feel that this is justified as by far the greater number of clams so removed have been consumed locally in Atlantic City.

Analytical Work.—The analytical work performed by the Laboratory of Hygiene consists in the analyses of samples sub-

mitted by other bureaus of the department, local boards of health and private individuals.

Water and Sewage analyses.—The following summary is a tabulation by months of the analytical work performed in the water and sewage division of the laboratory.

Table showing number and classification of samples analyzed each month in the Water and Sewage Laboratory during the fiscal year ending June 30, 1921.

Month.	Public.	Private.	State Instl.	R. R. Cert.	Sew- age.	Trade Wastes.	Sand.	Bottled Waters.	Total.
July.	159	20	9	16	58	.....	.....	.....	262
Aug.	175	21	6	24	19	.....	3	.....	248
Sept.	141	24	10	16	93	.....	.....	.....	284
Oct.	158	13	12	7	65	47	7	.....	309
Nov.	191	14	7	8	61	30	3	.....	314
Dec.	132	20	1	5	38	35	2	.....	233
Jan.	278	10	13	26	31	17	4	.....	379
Feb.	235	5	5	6	26	.....	1	.....	278
Mar.	200	8	12	.....	60	31	2	.....	313
Apr.	166	6	10	9	66	18	2	.....	277
May.	224	7	1	4	50	30	.....	2	316
June.	183	11	5	7	19	8	.....	4	237
Totals.	2,242	159	91	128	586	216	24	6	3,452

A scheme for the collection of water samples by automobile was instituted during the summer months and found to be exceptionally successful. Samples were collected from all public supplies and complete sanitary analyses made. As the Ford automobile used for the collection purposes had been run over 30,000 miles before it was used for water collection work, the cost of collection per sample was materially higher than it would have been if a serviceable car had been available, as repair charges on this car were abnormally high. Some of the advantages of the collection system instituted are: Breakage of containers abolished, delay between the time of collection and receipt of samples at laboratory eliminated, bacteriological samples suitably iced and brought to the laboratory in proper condition for reliable analyses, number of samples and time of their receipt controlled so as not to conflict with other work. Using this car for the collection of water samples four days of the week, it was possible to loan it to the Food and Drug Bureau for cannery and creamery inspections, thereby utilizing the last two days of the week when it was not desirable to have water samples reach the laboratory. The system has been so successful that a new Ford car has been authorized for this work.

Bottled Water Supplies.—Lack of transportation facilities to reach the bottled water establishments, which are generally located in out of the way places, together with insufficient personnel, has been responsible for a let-down in the supervision of the bottled waters of the State. People believe when they purchase these waters that they are obtaining something considerably better than their municipal supply, while frequently the reverse is the case. As the appropriation for next year is sufficient to keep on our payroll the bacteriologist who in the past two years has been employed temporarily during the summer and fall months for work on shellfish investigations, it is the intention to utilize the services of this man and by means of the car make a complete investigation of all bottled water supplies during the next fiscal year.

Samples of water from private supplies are frequently submitted to the laboratory personally or by mail with the request that the water be analyzed to determine its fitness for drinking purposes. In the majority of cases the reason for the analysis is curiosity, and upon being advised that a charge is made for doing this work, the persons submitting the samples are very much at a loss to understand why the Department of Health should not analyze water samples without charge. When it is realized that the personnel of the laboratory is barely sufficient to perform the analyses which are made necessary by law, it can be readily understood that it is not feasible to examine samples from many private supplies. Therefore, the policy adopted is as follows: Any person who has reason to suspect that his private water supply is unsuitable for drinking purposes should so inform the local health authorities, and if the latter, after making investigation deem such to be the case, the Department is prepared to furnish sterilized containers for the collection of a sample of water for analysis. The results are forwarded to the local health authorities and the Department expects that private water supplies which analyses disclose are unfit for drinking purposes shall be either closed up or else the source of pollution so taken care of as to no longer endanger the supply. If the person does not care to follow this procedure, the Department is still pre-

pared to make a limited number of analyses for which a charge is made to cover cost of analytical work involved.

Bacillus Welchii Investigation.—It having developed at a hearing before the Department of Conservation and Development that the presence of the bacillus welchii in the municipal water supply of Montclair was assigned as one of the reasons why another supply was desired by the municipality, it was thought desirable to make an investigation to determine prevalence of this organism in some of the other public supplies of the State. As far as we know it has not been customary to include the determination for bacillus welchii in routine water analyses. The wide distribution of bacillus welchii in nature would cause its absence in water to be the unusual, and the opinion of the majority of sanitary experts is that the presence of this organism in small numbers is without sanitary significance. The standard procedure of inoculation of water samples into litmus milk was followed. Positive tests were considered as those tubes which showed a typical stormy fermentation, worm-eaten appearance of the curd of the milk and odor of butyric acid. In some cases the positive tubes were confirmed by inoculation into animals. On autopsy the typical formation of gas bubbles in the heart and lungs of the animal was considered positive identification of bacillus welchii.

Twenty-six treated surface supplies furnishing water to over 1,600,000 consumers were examined for bacillus welchii. Of these supplies 19 supplying over 800,000 consumers showed bacillus welchii to be present in amounts of 50 c.c., but not exceeding 4 per 50 c.c. The watersheds from which these supplies are derived range from the closely patrolled shed upon which trespassing is forbidden to the grossly polluted sheds.

Examination of samples from five of the milk supplies delivered to Montclair in March, 1920, showed bacillus welchii to be present in three of the supplies, but not exceeding 3 per 50 c.c.

Food and Drug Analyses.—The following tabulation gives the number and character of samples analyzed by the Food and Drug Laboratory during the past year:

TABLE SHOWING NUMBER AND CHARACTER OF SAMPLES ANALYZED IN THE FOOD AND DRUG LABORATORY DURING THE FISCAL YEAR ENDING JUNE 30, 1921.

<i>Character of Sample.</i>	<i>Above Standard.</i>	<i>Below Standard.</i>	<i>Total.</i>
Milk,	1,777	300	2,077
Cream,	240	27	267
Milk, bacteriological examination,	136	0	136
Human milk,	11	0	11
Condensed milk,	39	4	43
Milk products,	7	1	8
Ice cream,	173	0	173
Butter,	100	26	126
Meat products,	70	16	86
Soft drinks,	40	18	58
Vinegar,	11	11	22
Tomato products,	39	8	47
Flavoring extract,	17	8	25
Olive oil,	44	1	45
Lard,	30	2	32
Distilled water,	15	40	55
Flour,	29	0	29
Miscellaneous,	110	11	121
Total,	2,888	473	3,361
DRUGS AND TOILET PREPARATIONS.			
<i>Character of Sample.</i>	<i>Above Standard.</i>	<i>Below Standard.</i>	<i>Total.</i>
U. S. P. and N. E. preparations,	87	51	138
Hair tonics and toilet preparations,	29	0	29
Miscellaneous drugs,	35	22	57
Total,	151	73	224
Total Foods and Drugs,	3,039	546	3,585

Fifteen per cent. of the samples analyzed were below the legal requirements.

A bill for standardizing the butterfat content of ice cream having been defeated in the legislature during the present year, it was deemed advisable to have samples from various manufacturers throughout the State collected with a view to obtaining information for the intelligent preparation of a bill sometime

during the next year. This investigation has not been completed to date and a detailed report of the results of analyses will be found in the report of the Special Agent in charge of ice cream factories. The examinations have not disclosed the substitution of cocoanut oil for butterfat in the preparation of ice cream in this State.

There appeared upon the market samples of cream which were found to be made from a mixture of butter and cocoanut oil. The vigorous action of the Bureau of Food and Drugs has resulted in breaking up this practice. All brands of condensed milk entering the State have been analyzed and found to comply with the Federal standards. Only those samples so labelled were found to contain cocoanut oil in place of butterfat.

A large number of samples of distilled water have been analyzed during the past year and found to be below the United States Pharmacopœdia standards, many of these samples were city water. This imposition upon the public is characteristic of the practice of certain druggists, as it has been our experience that those stores which sell a cap water as distilled water offer a fertile field for investigation. The high price of butter during the past year has encouraged the substitution of water for butterfat. Even with the decrease in the price of sugar the use of saccharin in place of sugar in the soft drinks is quite prevalent. The preservation of meats with sodium bisulphite still continues. This chemical serves two purposes for the unscrupulous butcher; first, to keep ground meats from spoiling which may or may not have been in good condition before grinding, and second, to cause the meat to have an attractive red appearance simulating freshness. The adulteration of milk with added water appears to be on the decline. The public appears to be educated to the view that oleomargarine is a wholesome product and the manufacturers now sell it under its true name. The sale of hydrogenated cottonseed oil for lard still continues to some extent, but this seems to be a misrepresentation by the local vendors as the large manufacturers of this article label the containers correctly.

State institutions from time to time submit samples to the laboratory for analyses in order to determine whether the articles submitted comply with the specifications. During the past year the principal brands of flour on the market were analyzed for the State Purchasing Agent.

Alcoholic Beverages.—Under the provisions of the Van Ness act passed during the last session of the legislature, it devolves upon the laboratory to analyze when requested samples of seized liquors for the purpose of determining whether same are suitable for hospital use. As the Department have no secure place for the storage of seized liquors pending analyses, we have adopted the procedure of having the liquors remain in the custody of the court officials and take small samples in order to determine their suitability for use of State institutions and hospitals. Depending upon the results of the analyses, the courts are then advised whether the liquor shall be destroyed or turned over to the institutions for medicinal use. If suitable for medicinal purposes those hospitals which have made application to this Department for a supply of alcoholic beverages are issued a permit, which upon presentation to the proper county officials, will enable them to obtain the supply for hospital purposes.

Factory Inspections.—The abatement of fume and odor nuisances is frequently requested by private individuals and local boards of health. These nuisances are not usually menaces to health, and under existing laws the Department has no machinery for handling these cases legally. The personnel is inadequate to cope with the large amount of this work, as these investigations require considerable time and the services of an experienced technical man. The necessity for such a person is obvious. In nearly all cases of complaints results are obtained by co-operation of the manufacturers at fault; they are usually not desirous of obtaining the ill will of the entire community in which they operate, and are generally willing to take suggestions and install apparatus when necessary to abate nuisances. It has been necessary during the past year to cite one manufacturer for hearing before the Board, as preliminary investigations disclosed the fact that his plant was emitting fumes into the atmosphere which would endanger the health of other factory workers in the com-

munity. The installation of suitable absorbing towers for taking care of these fumes has remedied the trouble and the matter was kept out of the court.

Report of the Bureau of Child Hygiene.

JULIUS LEVY, M.D., CONSULTANT.

In submitting the report of the Bureau of Child Hygiene for the year 1920, it seems desirable to state the general purpose of the work and to define the activities included in the Child Hygiene program as they differ in many particulars, both in character and extent, from the activities included in the Child Hygiene programs of other States and cities.

The general purpose may be defined in the definition that has been given to the science of hygiene:

"To make growth more perfect—Life more vigorous,
Decay less rapid—Death more remote."

It is preventative, not curative, and its accomplishments are to be measured not by reduced death rates, but by increased health rates.

While the State, cognizant of the needless waste of maternal and infant life and the development of preventable defects and deformities, has carried on Child Hygiene work in certain communities and cities; it has been for the purpose of establishing uniform and effective measures and influencing municipalities to take over the work after a demonstration of one or two years, with the State continuing expert supervision.

The many functions that have been incorporated into the Bureau, as well as the restrictions that it has placed upon itself, have been determined by the single thought that an official Child Hygiene Bureau should use the public funds for increasing the healthfulness and efficiency of the greatest number, rather than to try to remedy or cure existing illnesses or defects in the relative few, that it should concentrate upon those groups or age periods where growth and development is most rapid and the

effect of errors in care or in environment most serious, that it should primarily, through education, prevent the conditions that have been permitted to develop in past years and which have become such a serious menace to the mental and physical efficiency of the youth of the country, conditions that resulted in the rejection of one-third of the applicants for war service, that fill the institution of the State at a yearly cost of millions of dollars (and the end is not yet here), that bring about unnecessary illnesses and absences in school children and cause defects and deformities that are the direct cause of retardation, and so, both directly and indirectly, cost the school authorities millions of dollars in diminished income and the additional cost of having children repeat classes, conditions that constantly increase the demand for hospitals, dispensaries and charitable organizations, that deplete the limited incomes of families through avoidable illnesses and unnecessary deaths, and that, finally, if the children of the State succeed in surviving these conditions, give to the country a large number of physically handicapped and frequently dependent young men and women.

TABLE I—THE FUNCTIONS AND ACTIVITIES INCLUDE:

- A. *Reduction of Maternal Mortality.*
1. By teaching mothers personal hygiene.
 2. Prenatal clinics.
 3. Medical examinations.
 4. Investigation of all puerperal deaths attended by midwives.
 5. Supervision of midwives.
 6. Co-operation with hospitals.
- B. *Reduction of Infant Mortality.*
1. Prenatal care through instruction of mothers.
 2. Instruction of midwives in infant hygiene.
 3. Instruction of mothers in infant care with special emphasis upon maternal nursing:
 - a. By nurses visiting all new-born babies.
 - b. Mothers visiting Baby Keep-Well Stations and receiving additional instruction from doctors.
- C. *Children of Pre-School Age.*
1. Instruction to mothers in care and feeding, and importance of early medical attendance for all illnesses or noticeable defects.
 2. Follow-up to have defects and deformities corrected before school age.

- D. *School Children.*
1. Nurses to assist in medical examination.
 2. Nurses to follow-up defects and deformities for correction.
- E. *Boarding Homes.*
1. Elimination of baby farms.
 2. Licensing boarding homes.
 3. Supervision of boarding homes.
 4. Prevention of unnecessary separation of infants and mothers.
- F. *Unmarried Mothers.*
1. Arrange for supervision to prevent separation from babies, to assure maternal nursing and reduce high mortality among illegitimate infants.
 - a. Co-operation with hospitals.
 - b. Co-operation with social agencies.
- G. *Prevention of Blindness.*
1. Arrange for follow-up on all reported cases of ophthalmia.
 2. Instruct nurses to take smears of all cases showing any inflammation of the eyes.
 3. Instruct midwives in use of silver nitrate.
- H. *Co-operation with other Agencies, Bureaus of Departments.*
1. Birth registration.
 2. Contagious disease control.
 3. Sanitation.
 4. Housing.
 5. Venereal disease.
 6. Tuberculosis.
 7. Family problems.
 8. Sickness.

TABLE II—SUMMARIZED RESULTS OF HEALTH SUPERVISION OF MOTHERS AND INFANTS.

A. *Statistical Summary.*

1. Deaths under one year per 1,000 living births—	
a. For entire State,	87.3
b. For infants supervised by Bureau,	46.8
2. Deaths under one month per 1,000 living births—	
a. For entire State,	38.8
b. For infants whose mothers received prenatal care,	27.9
3. Still-births per 1,000 living births—	
a. For entire State,	42.1
b. For infants whose mothers received prenatal care,	23.3
4. Puerperal deaths per 1,000 living births—	
a. For entire State (1 in every 163),	6.1
b. For mothers who received prenatal care (1 in every 384), ...	2.6

B. *Baby Keep-Well Stations.*

Baby Keep-well Stations under State supervision,	74
Cities and towns in the district covered by these stations,	115
Physicians in charge of work at Baby Keep-Well Stations,	92
Nurses under State supervision,	99
Paid for by the State Department of Health,	82
Paid for by municipalities or private organizations, ..	17
Visits made by nurse,	138,437
Babies brought to stations,	25,864
Prenatal examinations,	791
Visitors at stations,	1,763

C. *Prenatal Care—Expectant Mothers.*

Supervised prenatal cases during 1920,	3,291
Cases placed under supervision during 1920,	1,928
Pregnancies ended,	1,947
Live births,	1,886
Deaths of babies under 1 month,	53
Maternal deaths,	5

FEEDING OF BABIES FOR THE FIRST MONTH BY ATTENDANT AT BIRTH WHOSE MOTHERS RECEIVED PRE-NATAL SUPERVISION.

	Total %		ATTENDANT AT BIRTH.							
			Mid.	%	Dr.	%	Hosp.	%	No Att.	%
	Total,	1,833	100	658	100	1,668	100	73	100	9	100
Entirely Breast-Fed,	1,728	96	650	99	1,000	92	67	87	9	100
Partially Breast-Fed,	30	1	1	.....	32	3	3	3	.....	.....
Entirely Artificially Fed, ..	71	3	7	1	56	5	8	10	.....	.....

D. *Feeding of Supervised Babies.*

	Breast-Fed.		Entirely
	Entirely.	Partially.	Artificially.
Birth record cases—up to 6 months,	73%	85%	15%
Babies whose mothers received prenatal care—feeding up to 1 month,	96%	97%	3%

E. *Birth Record Cases.*

Babies supervised during 1920,	14,654
Babies placed under supervision during the year,	8,654
Deaths of supervised babies,	405

Supervised Birth Record Cases by Attendant at Birth.

Total.	Attendant at Birth.		
	Midwife.	Doctor.	Hospital.
100%,	45%	48%	7%

Summary of Some of the Things the Nurses Have Accomplished.

	Errors.	Corrections.
Babies fed irregularly,	4,442	2,497
Babies not sleeping alone,	2,123	1,006
Sleeping rooms poorly ventilated,	1,948	1,012
Pacifiers used,	1,645	1,075
Babies given narcotics,	217	154
Babies improperly dressed,	2,119	1,017
Mothers inclined to stop breast feeding,	820	581
Mothers in industry,	435	57
Reports referred to Board of Health or charitable agencies,	476	346
Unclean homes discovered,	1,157	567
Prenatal cases where no attendant had been engaged,	717	.....
Engaging attendant before 7th month, after nurse's advice, .....	.....	397
Prenatal cases sent to doctor or clinic,	400	.....
Abnormal conditions found, .....	.....	79
Eye smears taken by nurses and placed under medical treatment,	216	.....

F. *Pre-School Children.*

Defects and illnesses detected,	830
Adenoids,	122
Arm,	1
Atrophy,	1
Bronchitis,	1
Colds,	3
Contagious diseases,	63
Diabetes,	1
Diarrhœa,	8
Ears,	22
Eyes,	104
Feet,	10
Glands,	12
Hand,	5
Hernia,	9
Hip,	2
Knee,	1
Legs,	49
Malnutrition,	16
Marasmus,	1
Mastoids,	2
Mental,	6
Neck,	1
Paralysis,	2
Pneumonia,	1
Rickets,	9
Rupture,	2
Skin,	42
Sore Throat,	5
Speech,	2
Spine,	4
Teeth,	41
Tongue Tied,	2
Tonsils,	130
Tuberculosis,	3
Others,	147

Defects and illnesses corrected,	140
Adenoids,	18
Anemia,	1
Contagious disease,	1
Diarrhoea,	2
Ears,	5
Eyes,	13
Face,	1
Feet,	3
Glands,	3
Hand,	2
Hernia,	2
Knee,	1
Legs,	3
Marasmus,	1
Mastoids,	3
Measles,	1
Mouth,	2
Skin,	16
Spine,	1
Teeth,	3
Throat,	1
Tongue Tied,	1
Tonsils,	23
Others,	33

G. *School Hygiene.*

Number of schools where State Supervised School Hygiene Nurses are doing school work,	85
Communities where school work is being carried on,	60
Inspections,	89,479
Defects found,	22,996
Defects corrected,	2,503
Illnesses detected,	547
Illnesses corrected,	176
Contagious and infectious diseases,	1,128
Home visits,	4,274

H. *Midwifery.*

Visits by District Supervisors of Midwives,	6,083
To midwives,	2,628
Post-partum cases,	1,693
For co-operation,	1,205
Ante-partum cases,	88
Still births, puerperal deaths, etc.,	469
Deliveries witnessed by Supervisors,	23
Labors reported by midwives to Supervisors,	32
Prenatal cases reported by midwives to Supervisors,	147
Midwives' meetings,	28
Attendance at midwives' meetings,	248
Puerperal deaths referred to Bureau,	472
Puerperal deaths investigated,	293
Cases where midwife has been in attendance at any time,	22
(7½%, although midwives, attend 28% of all births).	
Ophthalmia cases referred to Bureau,	67
Cases investigated,	63
Attended by midwives (37%),	23

I. *Boarding Homes.*

Licenses issued during the year,	65
Applications for boarding home licenses,	145
Homes investigated,	145
Desirable homes,	65
In 10 instances adjustments had to be made before licenses would be issued.	
Desirable homes in process of adjustment preparatory to being licensed,	37
Undesirable homes,	43
Baby farms closed,	10
Where 232 children between the ages of 6 weeks and 14 years were housed.	
In two instances, where the women were boarding 20 and 22 children each, after investigation and explanation these women admitted that they could not properly care for so many children and requested a license—	
1st home for 4 children,	
2nd home for 6 children,	
which request has been approved by the Department and licenses will be granted for the number of children requested.	

J. *Unmarried Mothers.*

Cases referred to Bureau during the year,	922
By hospitals,	13
Cases referred by Bureau to welfare organizations for supervision,	319
Reports on follow-up work received from organizations,	222

PRENATAL CARE.

The urgency of this work for the protection of mothers from the complications of pregnancy and childbirth is most strikingly indicated by the high maternal death rate and by the fact that this rate has not only shown no decrease in the last decade as one would expect with the general reduction of death rates, but particularly in the past few years has shown a definite increase.

In the last five years the number of deaths assigned to the complications of pregnancy and childbirth was 2,046 corresponding to a rate of 5.5 per 1,000 births or the loss of 1 in every 181 mothers in childbirth. This compares favorably with the records obtained from other States in the United States, but is much higher than the latest reports obtainable from foreign countries.

**Maternal Mortality Rates for United States and Foreign Countries*
Per 1,000 Births.

(For latest available years up to 1919).

Italy (1915),	2.2	England and Wales (1919),	4.4
Norway (1915),	2.7	France (1913),	4.6
Sweden (1915),	2.9	Australia (1918),	4.7
The Netherlands (1919),	3.4	Ireland (1918),	4.8
Prussia (1914),	3.5	New Zealand (1919),	5.1
Japan (1916),	3.5	Spain (1915),	5.2
Finland (1916),	3.6	Switzerland (1915),	5.5
Hungary (1915),	4.0	Scotland (1919),	6.2
United States,	7.4		

***Maternal Death Rate (Puerperal Deaths per 1,000 Live Births) for the State, the Counties and Ten Largest Cities in New Jersey, Arranged by Rank for Five-Year Period—1916-1920.*

ENTIRE STATE,	5.5	Cumberland,	6.6
COUNTIES—		Atlantic,	6.7
Ocean,	2.5	Camden,	7.2
Cape May,	2.5	Morris,	7.7
Warren,	3.9	Salem,	8.0
Union,	4.4	Sussex,	9.1
Middlesex,	4.6	CITIES—	
Bergen,	4.6	Elizabeth,	4.0
Passaic,	4.9	Perth Amboy,	4.1
Gloucester,	5.1	Passaic,	4.5
Essex,	5.2	Bayonne,	4.7
Somerset,	5.5	Newark,	5.2
Monmouth,	5.6	Paterson,	5.6
Hudson,	5.8	Hoboken,	6.1
Hunterdon,	5.9	Trenton,	6.5
Mercer,	6.3	Jersey City,	6.6
Burlington,	6.6	Camden,	8.3

****Maternal Deaths per 1,000 Live Births for Certain States, Arranged by Rank, 1920.*

Michigan,	2.1	Indiana,	7.4
Kentucky,	2.8	New York,	7.5
Georgia,	3.2	Arkansas,	7.5
Missouri,	4.2	Oregon,	7.5
North Dakota,	4.4	Maine,	7.6

**Note.*—Figures furnished by the Children's Bureau, Washington, D. C.

****All figures for births and deaths used in preparing tables and rates in this Annual Report were submitted by the State Bureau of Vital Statistics.

All mortality rates for New Jersey based on corrected death certificates as a result of additional information and re-distributed for non-residents.

*****Rates obtained from figures submitted by each State. Information not received for States omitted from above tabulation.

Wisconsin,	4.5	Oklahoma,	7.7
Nebraska,	5.4	Colorado,	7.8
Arizona,	5.4	North Carolina,	7.9
Connecticut,	5.6	Tennessee,	8.1
NEW JERSEY,	6.1	Virginia,	8.5
Washington,	6.1	Mississippi,	8.9
Minnesota,	6.2	Delaware,	9.0
South Dakota,	6.4	Florida,	9.2
California,	6.8	Montana,	10.0
Alabama,	6.9	South Carolina,	10.2
Texas,	7.1	Louisiana,	11.6
Columbia, District of,	7.3	New Mexico,	15.0
Maryland,	7.3		

The maternal death rates for the series of years from 1916 to 1920 shows that the maternal mortality rate in 1920 is 20 per cent. higher than that of 1919, and that the rate for the five-year period, 1916-1920, is considerably higher than for many of the foreign countries. While it is lower than that reported for other States, we must keep before us that this rate is unusually and distressingly high.

It is important to call attention to the maternal mortality rates for certain cities and counties in the State. The highest maternal mortality rate for any of the large cities is reported for Camden which for a five-year period shows a rate more than 50 per cent. higher than that for the State as a whole. This is also true of Sussex County. Camden, Morris and Salem Counties have a maternal mortality rate which is approximately 40 per cent. higher than that of the State for the five-year period. Cape May and Ocean Counties present the lowest maternal mortality rates with Warren County a close follower. Jersey City presents the second highest maternal mortality rate of the ten largest cities which is 25 per cent. higher than Newark and about 20 per cent. higher than the State rate for the same five-year period. Elizabeth and Perth Amboy present the two lowest rates and together with Passaic and Bayonne are well under the average for the State. It would appear then, that high maternal mortality is neither particular to the large cities nor to the rural counties, but that it is determined by a number of factors into which enters prenatal care, the character of the obstetrical service, the availability of expert care for complicated cases and the proper after care of the mother.

It is well to consider in connection with maternal death rates, the stillbirth rates, as they are influenced in part by the same factors that influence the maternal death rates. The stillbirth rate in New Jersey in 1920 was 42.1 which is unusually high. In most cities, it has remained around 40 per 1,000 births. These death rates represent conditions that also lead to chronic invalidism for thousands of mothers, injuries to the babies that are the cause of the high mortality in the first month or often leave the child permanently defective. Stillbirths and deaths under one month have numbered 31,349 for five years, a little less than the total deaths under one year.

It is gratifying to be able to report that some headway is being made against the complicated conditions underlying this situation.

The Bureau has supervised during 1920, 3,291 expectant mothers, of which 1,928 were new cases; of this number 1,947 pregnancies terminated as follows: Seventeen ended in miscarriages, 44 in stillbirths, and 1,886 in live births, 53 babies under one month of age and 5 mothers died.

The maternal mortality was 2.6 or one in 384 mothers in contrast to 6.1 or one in 163 mothers, the rate of the entire State. The stillbirth rate for the supervised mothers was 23.3 per 1,000 live births or one in every 43 in contrast to 42.1 or one in 23, the rate for the State.

ATTENDANT AT BIRTH FOR MOTHERS RECEIVING PRE-NATAL CARE.

DELIVERIES.	Total.		ATTENDANT AT BIRTH.							
			Midwife.		Physician.		Hospital.		No Attendant.	
	Cases.	%	Cases.	%	Cases.	%	Cases.	%	Cases.	%
Total.....	1,930	100	874	34½	1,150	59	97	5	9	½
Live Births,...	1,886	100	664	35	1,121	29	92	4½	9	½
Stillbirths, ...	44	100	10	23			5	12		

The mortality of the babies under one month for the supervised group was 27.9 in contrast with 38.8 per 1,000 births for the State.

These results have been obtained by instructing expectant mothers in personal hygiene, by arranging for a medical ex-

amination at a hospital or by a private physician even if the woman intends to be delivered by a midwife, by preventing midwives from taking abnormal cases and influencing them to send for the doctor promptly during labor when any abnormal situations develop, by improving the obstetrical practice of midwives in general and eliminating the unfit, unlicensed and mischievous midwives, by increasing the co-operation between doctors, hospitals and midwives so that midwives can more easily obtain medical services for their patients or refer cases to the hospital. Better results will be obtained by a more general extension of this work, increased hospital facilities in the rural district, more effective control of midwives and better obstetrics generally.

INFANT AND MATERNAL DEATHS PER 1,000 LIVE BIRTHS FOR CASES RECEIVING PRE-NATAL SUPERVISION BY ATTENDANT AT BIRTH.

	Total.	Rate.	ATTENDANT AT BIRTH.							
			Midwife.		Physician.		Hospital.		No Attendant.	
			Cases.	Rate.	Cases.	Rate.	Cases.	Rate.	Cases.	Rate.
Live Births, ..	1,886	.....	664	.....	1,121	.....	92	.....	9	.....
Deaths of Babies Under 1 Month,	53	27.9	10	15.0	37	33.0	6	65.2		
Maternal Deaths,	5	2.6			5	4.4				

MIDWIFERY.

The Bureau has given considerable attention to the midwifery question and the supervision of midwives, as they deliver a large percentage of the total births and have a considerable influence with the mothers most in need of instruction in personal and child hygiene.

In 1920, of 76,431 reported births, 21,511 or 28 per cent. were delivered by midwives. In certain cities this percentage rises to 50 per cent. and among certain nationalities to 90 per cent.

The importance of the Midwifery question is to be estimated not only by the percentage of births attended but by the in-

fluence the midwife exercises over the future care of the baby.

In most instances the midwives are of the same nationality as the women they attend and retain most of the practices, traditions and superstitions that have been transmitted for generations in these groups. Unless the midwife, who is frequently consulted by the mother until the baby is at least 6 months of age, becomes thoroughly imbued with American standards of living and inculcated with modern ideas of hygiene, it becomes increasingly difficult for Bureaus of Hygiene or Departments of Education or Americanization to transplant American ideas.

Licenses have been issued to 956 midwives and of this total number about 450 are actively practicing. As a result of supervision and investigation, 215 additional unlicensed midwives have been discovered.

Records show that certain midwives have a very extensive practice, some delivering as many as 500 cases a year.

The State has been divided into seven districts with each district under a District Supervisor of Midwives, who is expected to become intimately familiar with the character, the home and the practice of each midwife, to attend with each midwife as many labors as possible, to follow up still-births, puerperal deaths, post-partum calls and all complaints, and to hold meetings with the midwives for discussion of their problems. These activities are carried on for the purpose of giving the District Supervisor of Midwives an opportunity to frequently instruct the midwives in the essentials of obstetrics and infant hygiene and particularly to stress the importance of:

1. Arranging for a medical examination of each patient so that abnormal conditions may be discovered and the woman placed under the care of a doctor or a hospital, if any exist.
2. Instructing the mother in prenatal care.
3. Exercising every possible precaution to maintain asepsis.
4. Avoiding frequent examinations.
5. Promptly sending for a doctor upon the appearance of any abnormality or difficulty in the delivery, puerperium or infant.

The District Supervisors have made in the course of the year over 6,000 visits to the midwives or directly in connection with the supervision of the midwives, have held 28 organization meet-

ings with an attendance of 248 midwives, investigated 293 puerperal deaths at which it was found midwives had been in attendance in only 22 instances or 7.5 per cent. of the reported cases.

The response of the midwives to this form of co-operative supervision has been very gratifying.

The members represent 80 per cent. of the midwives of Essex County and are appearing in the gowns that they have adopted and pledged to wear at all their cases. Those who have seen midwives attend their cases in sweaters and woolen dresses will recognize the degree of co-operation that has been given to obtain the result indicated in the picture and which is a fair indication of the result obtained in other directions.

We can safely say that practically all licensed midwives have co-operated very effectively in the prompt reporting of births, the use of silver nitrate in the eyes of every newborn baby, in sending for doctors upon the appearance of abnormalities, in giving proper instructions to mothers.

A few, either through ignorance or stubbornness, are a menace to the mothers and infants of the State. These can only be reached through placing in the body that supervises additional power to control their activities.

A great deal is often accomplished by persuasion. A good illustration of this is the fact that a licensed midwife, 82 years old, who has been practicing over 20 years and was continuing practice, even though she was hardly able to see, voluntarily surrendered her license upon the advice and persuasion of the District Supervisor.

In addition to supervising, training and educating the licensed midwife who seems willing to learn, a beginning has been made to eliminate the unlicensed and the undesirable licensed midwife. While the Bureau has been successful in a small way in the elimination of certain unlicensed midwives and in the prosecution of the unfit or mischievous midwives, we regret to be compelled to report that we have not accomplished as much as we would like to have accomplished and feel must be accomplished properly to protect mothers and infants.



Part of the difficulty lies in the present method of procedure as established by the law on Midwifery. When the Midwifery law was passed in 1892 and 1910, the primary purpose was to establish a moderate educational qualification for permission to practice, and to obtain a roster of practicing midwives in the State. The law carries a clause that refers to revocation of licenses for specific causes which must be proven in accordance with the general rules of evidence followed by the State Board of Medical Examiners in order to have a license revoked. Since then Departments of Health, in developing Bureaus of Child Hygiene, have recognized that one of the most important factors in maternal and infant mortality is the midwifery problem, and that the duty devolves upon them to maintain an active supervision over the midwives to assist those who are willing and able to adopt modern obstetrical practices and standards of hygiene or to suspend or to eliminate from practice the ignorant, the mischievous and the unfit.

The Department has tried to accomplish this purpose by following the present procedure of referring to the State Board of Medical Examiners or to County Prosecutors those midwives who in their judgment merit suspension or revocation of license. These midwives have been referred only after we have exercised every effort to get the midwife to give up dangerous practices or to conform to minimum standards. As an example I would refer to one midwife who in the past years has been and still is using hypodermic injections of pituitrin, who has been repeatedly warned against the practice and finally referred to the State Board of Medical Examiners, for revocation of license. Case was dismissed after several postponements. While something has been accomplished the present procedure is too indirect, too easily unduly prolonged to effect the best results.

The present law on educational requirements does not seem to produce the type of midwife we require. New Jersey in contra-distinction to New York requires a two years course of 7 months each. At the one school in New Jersey where midwives receive training, this seems to be interpreted as requiring attendance about one day a week, while New York requires a continuous six months' course with permanent residence.

Graduates of the Bellevue School, though having a training equal if not superior to that received in New Jersey, are not eligible for examination.

The New Jersey law unnecessarily prolongs the course of instruction without giving any additional training or education; it draws out into two years what can better be given in six to nine months. It is generally held that to prolong a course of instruction prevents that degree of concentration which is always considered best for practical professional training.

As the result of the work with the midwives and our experience with the Midwifery problem, we would recommend

1. That the State Department of Health consider if any better method can be devised for the more effective supervision of certain types of midwives.
2. That the educational requirements of the present Midwifery Act be changed so that applicants for licenses to practice midwifery shall have had a continuous course of instruction in residence of at least 6 to 9 months.
3. That schools for midwives be established under State or municipal auspices, or regulatory supervision be maintained over private schools.

MATERNITY HOMES.

Somewhat related to the work with midwives is the licensing and supervision of maternity homes. As a result of an addition to the Sanitary Code, anyone wishing to conduct a maternity home (and this is defined as any person delivering more than one woman in the home in six months) is required to obtain a license from the State Department of Health. In the course of a year, eight licenses have been granted, three licenses refused. The particular value of this method of procedure is that it prevents the unnecessary multiplication of maternity homes which often are established by midwives for illegal purposes or to engage in the traffic of delivering unmarried mothers and then for a consideration of generally about \$100, to adopt out or dispose of the infant. This system of licensing permits constant supervision and is the most effective way of preventing the development of such evils as are known to develop in unlicensed and unsuitable homes, as can be seen from a description of a home that had existed a number of years before the establishment of this Bureau and the development of the licensing

system but which was promptly eliminated as soon as the chapter on maternity homes was put in the Sanitary Code.

Fee charged each patient,	\$100
Beds for patients,	6
Patients in home—	
Mothers,	6
Infants,	22
Five were unmarried mothers, and all infants illegitimate.	
Attendants,	2
Home conditions decidedly unsanitary.	
1. Toilets and all plumbing out of order.	
2. Water supplied from a cistern in kitchen.	
3. All rooms poorly equipped.	
Residence of patients,	
{ None from New Jersey.	
{ Pennsylvania,	3
{ Maryland,	1
{ Virginia,	2

Patients compelled to scrub floors.
Food and general care—insufficient.

INFANT CARE.

The infant mortality rate for the State of New Jersey for 1920 was 87.3, 1.2 higher than in 1919 which was an unusually favorable year. Infant mortality rate of New Jersey for the past ten years has been as follows:

Year.	Rate.	Year.	Rate.
1920,	87.3	1915,	106.4
1919,	86.1	1914,	113.6
1918*,	112.3	1913,	122.7
1917,	100.7	1912,	124.1
1916,	104.7	1911,	131.4
		1910,	154.8

If the infant mortality rate of 1920 had obtained for the previous ten years 17,748 fewer babies would have died, or to put it in other words, if the infant mortality rate of 1910 had existed for the past decade 26,799 more babies would have died.

The quickest way to estimate the value of preventative Child Hygiene methods is to contrast the mortality rates of mothers and infants supervised by the Bureau with the rates of the State as a whole.

*Epidemic of influenza and measles.

While the infant mortality rate for the entire State was 87.3, for the babies supervised by the Child Hygiene Bureau it was 46.8, a little more than one-half of the State rate, while the rate for the babies under one month was 38.8, it was 27.9 for those supervised by the Bureau, while the stillbirth rate for the State was 42.1 for those infants whose mothers received prenatal care, the rate was 23.3, a little more than one-half of the rate for the entire State; while the maternal mortality rate for the State was 6.1 or one mother in each 163 died in childbirth, for those mothers who received prenatal care from the Bureau, the rate was 2.6 or one in 384.

The results above indicated have been obtained, primarily, by placing under supervision as large a number as possible of newborn babies and expectant mothers and having a nurse visit the mothers' homes to teach them personal hygiene, infant care, the value, importance and technique of maternal nursing. The results obtained by the Bureau are an absolute vindication of the policy adopted of concentrating in selected districts upon special groups of mothers and newborn babies and restricting the work to keeping well babies well.

A careful record of the character of feeding of these babies has been kept and shows that up to six months 73 per cent. of the babies were entirely breast fed and 85 per cent. partially breast fed. Of the babies whose mothers received prenatal care 96 per cent. were entirely breast fed for the first month and 97 per cent. partially breast fed; only 3 per cent. entirely bottle fed.

During the year the nurses have supervised 14,654 babies, of which number 8,654 were born in 1920. They have made 138,437 visits to the mothers in their homes and have examined with the assistance of 92 physicians who have volunteered their services 25,864 babies at the Baby Keep-Well Stations.

The Bureau has extended its supervision to nurses not in the employ of the State Department. A pertinent instance of this is Elizabeth, where the city has appropriated over \$10,000 and the State Department has assisted in the establishment of the work and has assumed full technical supervision over the nurses.

Seventeen (17) nurses employed by municipalities have received similar supervision. In addition to the Child Hygiene work carried on directly by the State Department, Newark, Elizabeth, Trenton and Jersey City have Bureaus of Child Hygiene with appropriations varying from \$10,000 to \$80,000, who have contributed considerably to the general results in the State. Child Hygiene work has been established by the State in the following communities:

Allamuchy	Goshen	Port Murray
Alpha	Green Creek	*Port Reading
Arlington	Hackettstown	Princeton
*Atlantic City	Hainesport	Quaker Grove
Avalon	Hammonton	*Rahway
*Avenel	Harrison	Ridgefield
Barnegat	Hopelawn	Rio Grande
Bay Head	*Iselin	Riverside
Bayville	Island Heights	Rockport
Beattystown	*Keasby	Roselle
Beechwood	*Kearny	Roselle Park
Belleville	Linden	*Salem
Beverly	Lakehurst	Seaside Heights
Bound Brook	*Lambertville	Seaside Park
Broadway	Leonia	Seawaren
Burley	Locust Grove	Shadyside
*Burlington	Lumberton	Silver Lake
*Camden	Mayville	Silverton
Cape May	Millford	Smithville
Cape May Court House	Millville	Somerville
Cape May Point	Mt. Holly	South Amboy
Carney's Point	Murray Hill	South River
Cedar Grove	Netcong	Stanhope
Changewater	New Brunswick	Stockton
Chrome	*New Providence	Stone Harbor
Closter	Oxford	Swainton
*Colonia	Passaic	Tenafly
Cresskill	Paterson	Toms River
Delanco	Paulsboro	Trenton
Dias Creek	Palisades Park	Vienna
Dover	Penns Grove	Washington
Edgewater	Pershing	West Bay Head
*Elizabeth	Perth Amboy	West Cape May
Frenchtown	Phillipsburg	Wharton
*Flemington	Pine Beach	Wildwood
*Fords	Pleasant Plains	Whitesboro
Garfield	Point Pleasant	*Woodbridge
Glassboro	Point Pleasant Beach	
Gloucester	Port Coldern	

(Note.—* Indicates the communities employing through private or public funds one or more nurses who are under State supervision.)

PRESCHOOL AGE.

The age group two to six years is not as important as the group below two years of age, as during this period there is a much lower morbidity and mortality rate, and the child, if the mother has received prenatal care and has been instructed properly to care for and feed it in the first two years, enters the romping age in good condition.

It is important, however, during this period, to teach the mothers the proper care and feeding of children and to re-emphasize the importance of cleanliness, as it has been found that a very large percentage of the defects that have been discovered in the school children begin in the period before school age from neglect of simple rules of hygiene. This is well indicated by an English report which shows that blepharitis, strabismus and defective vision begin commonly between the fourth and seventh year, and are often dependent on imperfect nutrition, bad housing, poor hygiene and uncleanness, conditions that can and should be detected and corrected early to prevent these defects from developing. Of 22,000 school children in London 2 per cent. showed some eye disease, of which three-fourths was said to be due to unwashed faces and dirty hands. In a series of 616 cases of blepharitis, 300 were discovered before the child was three years of age, the majority being under six years of age. Fifteen per cent. of all eye troubles of school children are said to be due to phlyetenular conjunctivitis and keratitis, two diseases that are responsible for a great deal of blindness, and begin most commonly between the fourth and sixth years of life and are found usually among children suffering from malnutrition of infancy and early childhood. Of 408 cases of hypermetropia, 103 cases were noted before six years of age, and of 378 cases of hypermetropia with stigmatism 186 cases were noted before six years of age. Defective hearing is usually the result of neglected otitis which in turn is often the result of neglected hypertrophied tonsils or adenoids, conditions that should be recognized and attended to before school age.

As part of the continuous Child Hygiene program which is to include the supervision of all the children from the prenatal

period to adolescence, the nurses when they are visiting in the homes for the particular purpose of supervising the newborn baby or the expectant mother, instruct the mothers in the importance of having the children of preschool age carefully examined by a doctor from time to time and especially to take the children to a doctor to have various defects properly treated or removed.

During the year the nurses have referred 551 cases of illnesses to doctors and have discovered over 1,212 cases of defects and untreated illnesses. The defects discovered and referred to physicians have varied from slight colds to three cases of tuberculosis, from defective teeth to deformities of the spine. It is noteworthy that this work is carried on at the time that the nurse is visiting the mother in connection with other work.

SCHOOL CHILD.

A very large proportion of the defects that are especially emphasized in school work such as carious teeth, malnutrition, defects of the eyes, ear and teeth, have their beginnings in the preschool period and can be prevented through proper prenatal and infant hygiene. It is illogical to begin work in a community with the school children. The Bureau has concentrated in those communities where it has been possible to establish what we have designated as a "continuous preventive Child Hygiene program," *i e.*, a program where the supervision of the school children is combined with the supervision of the expectant mothers and babies, and children of preschool age under one nurse and under the single direction of the Health Department. We have had occasion, in two legislative sessions, to make clear that the supervision of the health of children is a function of the Health Department and not of the Department of Public Instruction.

As a result of this program there has been established follow-up work for school children in 60 communities in connection with the rest of the Child Hygiene work. We would emphasize that it has particularly permitted the development of modern school hygiene work in the very small communities by combin-

ing them under one nurse. This is well illustrated in Warren County where the entire county is practically being covered as far as child hygiene requirements are concerned, by combining as many as fourteen communities and placing one nurse to look after the whole Child Hygiene program. This method will also make it easier after its value has been demonstrated to have the communities combine in paying the salary of the nurse.

The work in the schools has been facilitated by the eager co-operation of the school authorities. In a few places, medical inspectors have been opposed to the work but they quickly discovered that the nurse is of considerable value and have given their co-operation. The Department has made a point of establishing this supervision in parochial schools as it is well known that in communities where funds have been expended for school hygiene by Boards of Education, the children in parochial schools were deprived of the benefits of this work as the funds of the Board of Education are restricted to children in public schools. This work has been made possible by the hearty co-operation of those in control of parochial schools.

Now that the State Department of Health has established supervision of school hygiene in many communities, both in public and parochial schools and is prepared to extend this work in connection with other Child Hygiene activities, it would seem desirable for the purpose of preventing duplication and permitting the logical development of the child health program that the State supervision of school hygiene apart from physical training and the teaching of hygiene in schools, be definitely made a function of the State Department of Health by legislative enactment. This would apply only when and where State supervision is established.

BOARDING HOMES.

During the year the Bureau has made surveys in several counties to learn of boarding homes, to eliminate the unfit and to license those that would make good foster-homes for young infants and children. The Bureau has proceeded by concentrating upon a single county at a time. During the year, 145

applications have been received for boarding homes of which 65 were granted. Ten baby farms where 232 children were housed between the ages of six weeks and fourteen years were discovered and closed. As a result of the survey it was found desirable to give the Department power to prevent the development of objectionable and dangerous boarding homes for infants and children. For this purpose Chapter 8 was added to the Sanitary Code, which requires each person who boards a child to obtain a license from the Department of Health, which is to be granted if conditions warrant, without a fee. This was deemed necessary in spite of the fact that in 1915 the Legislature had passed a law permitting incorporated municipalities to pass ordinances regulating boarding homes as it was found that only a few larger municipalities were in a position to enforce such ordinances even if they passed them, and that furthermore, a municipality not incorporated did not have the power to pass such laws. The purpose and value of the Boarding Home Ordinance which has enabled the Department to specify the number of children that may be cared for in a home is five-fold, namely:

1. It enables the Department of Health to close up certain homes which are generally designated as "Baby Farms" and are a menace to the children and to the moral standards of the State.

Example: One colored home had 28 children, ages 3 weeks to 12 years—19 under 1 year, 2 women caring for these children. Three babies sleeping in one crib.

Note: Home closed.

2. It enables the Department to develop the proper kind of boarding homes by advising persons that if they conform to certain standards the Department will issue a license and assist them in the proper care of the children boarded.

Example: One home had 22 children, age 6 weeks to 12 years. Family 3 adults. Family occupies 7 rooms and attic (unfurnished). Woman and her two daughters care for home and children. Sleeping quarters of children—9 boys and girls sleep in unfurnished attic.

Note: After investigation and explanation, woman admitted that she could not properly care for so many children and has asked the Department that she be allowed to care for four children. The Department has approved of this request and has granted license for the boarding of four children.

3. It helps to maintain proper standards in homes for the family itself by preventing certain persons from boarding children who either have inadequate facilities, insufficient help, or children of their own at that tender age where they require the whole attention of the mother.

Example: One home requested two children over 1 year. Members of family, 5, of which 4 are children under 7 years. Rooms occupied, 2. A miserable home.

Note: Woman thought if she had some children in board they would help feed her children. Case referred to local charities. License refused.

4. It permits the development of real foster homes, that is, homes in which one or two children will be taken, not for profit, but for companionship and from a sense of service.

Example: Application made for one child over 1 year. Family of two adults—man and wife. Ideal home, 6-room dwelling and bath. Loves children. Wants a child for company.

5. The licensing system will protect the State against certain types of children from becoming public charges as infants of unmarried mothers from other States, who are deserted and then referred to the Overseer of the Poor.

The supervision of the boarding homes is related to the problem of the unmarried mother and her infant as the boarding home undoubtedly sprang up to meet the demand for the boarding out of illegitimate infants, particularly when it was found by certain mercenary persons that a considerable sum of money could be obtained for the boarding of an infant which usually died within the first months of life. A few years ago, in a vice investigation in another State, it was brought to light that a great traffic existed in the handling of illegitimate children and that certain institutions and baby farms were receiving great numbers of such infants and collecting a considerable sum of money only to bury these infants in the course of a few months. A similar situation was discovered in connection with a home at Lawnside in this State, which very well illustrates the kind of situation that will develop if we follow the methods recommended by certain workers who have suggested that we should not take cognizance of homes of this nature until complaints are made of neglect or improper care.

After the State demonstrated the value of this method of licensing and supervising boarding homes for a period of six months, the city of Camden took over the work under its jurisdiction and employed a trained worker who continues under the supervision of the State, the State supplying the necessary record forms and issuing the licenses. It is expected that this procedure will be followed in all of the larger municipalities, the State carrying on this work only until these cities have adopted a boarding home ordinance.

UNMARRIED MOTHERS.

The work with the unmarried mother and baby is directed primarily to the saving of the life of the infant. This it has been found, can best be done by keeping it with the mother and keeping it breast fed. In order to obtain this result with illegitimate infants, it is necessary to reach the unmarried mother at least before she leaves the hospital, so that through the proper inquiry and conference plans may be developed which will enable the mother to nurse her baby. From the State's standpoint we have contented ourselves with arranging for this supervision with various agencies and organizations in the different counties. During the year 922 mothers were referred for supervision and care. Active co-operation has been received from most of the hospitals who have notified the Department of the admission of the unmarried mothers so that they could be placed under supervision. Particularly helpful has been the assistance received from the overseers of the poor, charity and family welfare organizations, and the Church Mission of Help, the latter having not only interested themselves in the unmarried mother immediately after delivery but as long thereafter as possible.

It would seem desirable to establish in the State of New Jersey two or three convalescent homes for nursing mothers similar to the one established in 1917 in Newark, where mothers who were unable to return to homes could be placed with their nursing infants for the purpose of being given an opportunity to nurse their babies at least for a few months and at the same time learn personal hygiene and infant care, to develop their maternal instinct, to receive training in home making and any other kind of work for which an aptitude is discovered.

Such a convalescent home would not only save infant life and protect many of these very young inexperienced mothers, but would also act as a center for the registry of wet-nurses and for the supplying of breast milk for premature infants. In short, such an institution would help to save the life of a number of babies in addition to protecting the unmarried mother and

her infant. Such a convalescent home need not be a separate institution but merely part of a hospital or home.

PREVENTION OF BLINDNESS.

All cases of Ophthalmia reported to the State Department of Health are referred to the Bureau for follow-up work. In addition the nurses are instructed to take smears of every discharge found in new-born babies and to send it to the City or State Laboratory for examination. These cases are then referred to the nurse for follow-up work for the purpose of satisfying ourselves that the infants are under medical care and that the mother is accurately following out instructions. When it appears that the infant cannot receive proper care at home it is then referred to a dispensary or to a hospital. We would recommend as the result of our experience with the supervision of Ophthalmia,

1. That laboratories be requested to use a form which does not carry the words "gonorrhoeal ophthalmia" but merely "Ophthalmia Neonatorum" so that doctors, midwives and nurses will learn to report all cases of ophthalmia no matter what the etiological factor may be supposed to be.

2. That county hospitals be required to admit any case of serious Ophthalmia Neonatorum referred to it. It is readily understood that the serious types of Ophthalmia are emergencies in the truest sense as an infant readily loses the sight of the eye if the condition is not promptly and completely cured.

It is worthy of note that the Appellate Division of the New York Supreme Court in a recent case set \$12,000 as the value of an eye lost in babyhood.

There has been an increase in the reporting of Ophthalmia in the past year which should not be considered as indicating an increase of Ophthalmia but merely the result of the increase of interest that comes from close follow-up work. The Bureau is continuously directing the attention of the midwives to the importance of using Silver Nitrate as a prophylactic and distributes the new container adopted by the Department.

As the result of the work with midwives, we feel justified in stating that the licensed midwives are using silver nitrate, practically speaking, in every instance. In 1920, 67 cases of Ophthalmia were referred to the Bureau and of 63 investigated,

23 had been attended by midwives or 37 per cent. This percentage is a little higher than the percentage of attendance at birth which is 28 per cent., but when we consider that the midwives cases are drawn from the poorest and most unhygienic families the results are not to the discredit of the midwife.

DENTAL CLINICS.

The Bureau has recognized the value and importance of normal teeth in the Child Hygiene program and has assisted in the establishment of a dental clinic in Perth Amboy; has arranged to co-operate with the Burlington County Motor Clinic, and in other counties has urged the development of dental clinics. It has taken the position, however, that inasmuch as dental caries is largely the result of rickets and other nutritional disturbances that develop in the first two years of life and of the improper care of the insidious teeth, that a constructive program must include the other functions of the preventive Child Hygiene program before a dental clinic is established.

The Perth Amboy dental clinic was established in co-operation with the Red Cross, the Board of Education, the Department of Health and the Dental profession. This work is divided among the children of the public and parochial schools, expectant mothers and the children of preschool age. The reports for two months present the following facts, viz:

Patients cared for,	208
Public school children,	132
Parochial school children,	59
Others,	17
Examinations,	70
Extractions,	222
Cleanings,	39
Treatments,	19

EXHIBITS, EDUCATIONAL WORK.

The Bureau has held and followed the practice of concentrating in its educational work upon personal contact. It believes that in Child Hygiene permanent and constructive results are obtained by home visiting by properly trained teachers of Child

Hygiene. It recognizes that for certain classes of mothers literature and posters are of some value, but this group is relatively small and have few children. During the year the Bureau has co-operated with the Museum for the distribution of slides, posters, and has in addition tried to establish the circulation of slides on Child Hygiene through the moving-picture houses.

EXTENSION WORK.

The Bureau has placed Child Hygiene nurses in those communities where it was thought they were most needed and it appeared that the best co-operation would be obtained from the official bodies. In establishing Child Hygiene work, it has been pointed out to the communities that the work is in the nature of a demonstration and that it is expected that within one or two years the local communities would pay all or part of the nurses' salaries.

We believe that one of the special advantages in this method is that it permits the establishment of approved, uniform methods throughout the State and will lead to the rapid extension of Child Hygiene work by the municipalities with State supervision.

POST GRADUATE COURSE IN CHILD HYGIENE.

The Bureau established with the assistance and co-operation of Dr. J. J. Savitz, Principal of the Trenton State Normal School, the first Post Graduate Course in Child Hygiene established in the United States by a Health Department. While it was prepared primarily to give to the nurses in the Department, special instruction and training in child nurture, the essentials of social case work, pedagogy, psychology, tuberculosis, venereal disease control, housing, mental hygiene and other phases of public health work were included.

The lectures were so combined that the nurses were required to give only one day a week to attendance at the State Normal School. During the coming year, it is hoped to continue this course and to make it available to all workers of proper qualification. Mr. Melvin A. Rice, President, State Board of Educa-

tion, presented diplomas to the first graduates of the Child Hygiene Course at the State Normal School, and Mr. Frank H. Sommer, who has always been deeply interested in Child Hygiene work in the State, delivered the principal address at the Graduation exercises which were conducted on April 7, 1921.

CO-OPERATION WITH OTHER AGENCIES, BUREAUS AND DEPARTMENTS.

The Bureau has felt that the large staff of nurses distributed throughout the State were in a position to assist many of the other Bureaus of the Department of Health and has attempted in every way to co-operate with such Bureaus:

1. *Bureau of Vital Statistics.*—Co-operation with the Bureau of Vital Statistics has been very active and has been of considerable help to this Bureau. Nurses have been instructed to discover unreported births or any errors in the reporting of births and to report them to the Registrar. Supervisors of midwives have discovered many errors in the reporting of births, some wilful, others accidental. A particular practice that is not yet eliminated has been the signing by doctors of birth records for unlicensed midwives. These and similar matters have been referred to the Bureau of Vital Statistics where they have received prompt and effective attention.

2. *Contagious Diseases.*—The nurses naturally come in contact with a great deal of unreported contagious disease or improperly quarantined contagious disease. This material could be made the basis of follow-up work for the control of contagious disease either through the local boards of health or by the Bureau of Contagious Disease Control. While a certain number of cases have been reported, considerably more work could be done in this line if the results obtained were of a nature to stimulate the reporting.

3. *Sanitation.*—A similar situation exists in regard to general sanitation. The nurses coming in contact often with isolated families in small communities, are requested to help have certain conditions removed or remedied which appear to them to be a menace to health or at least are contrary to proper standards

of living. When these conditions are reported to local boards of health, they frequently receive prompt attention and are remedied. On the other hand, they often are ignored. These reports could serve the purpose of increasing the efficiency of local boards or to indicate the need for a county or district health officer.

4. *Housing.*—Bad housing conditions in tenement houses have been referred to the Tenement House Commissioner where they have received very prompt attention.

5. *Veneral Diseases.*—The nurses are instructed to advise examination and treatment to all members of the family whenever a case of Gonorrhoeal Ophthalmia is reported. In addition, through their intimate knowledge of the family, they are in a position to urge examination and treatment in many other instances.

6. *Tuberculosis.*—The same situation exists in relation to Tuberculosis and the nurses are instructed to urge examination, treatment and proper follow-up work in all suspected cases of tuberculosis in adults as well as in children. We believe, however, that the greatest contribution to the Anti-Tuberculosis program is made through the preventive Child Hygiene work, which has for its fundamental purpose the maintenance of proper growth, development and nutrition.

7. *Family Problems.*—The nurses naturally come in contact with many family problems which their humanitarianism prompts them to offer to deal with. We have taken the position that the State of New Jersey is employing Child Hygiene nurses to maintain in health and vigor mothers and infants through Child Hygiene instruction and not to deal with every family problem that they might meet. We have, therefore, not only referred family problems to existing agencies, but have made our best efforts to develop or help establish agencies or organizations that will deal with the many family problems found in rural districts as well as in the congested cities. There is great need for such organizations and an excellent opportunity for welfare bodies.

8. *Doctors.*—The co-operation with the doctors has been very encouraging; not only have a considerable number of the doc-

tors throughout the State voluntarily given their services to assist at the Baby Keep-Well Stations, examining babies and advising mothers in their proper care, but as a group they have lent their moral support to the Child Hygiene movement which in its last analysis is hastening the day when doctors will not make a livelihood from treating sick children. In turn, the Bureau has been co-operating with the doctors by strictly adhering to the principle that it work deals with the principle of keeping well babies well and that the basis of the work is education. The nurses have been instructed to urge upon the mothers the importance of consulting doctors early in all cases of illness, and the policy has been adopted at the Baby Keep-Well Stations that no conditions other than malnutrition were to be dealt with, and no prescriptions written except perhaps an alternative or food like cod liver oil.

The Bureau has had an allowance of \$150,000 for Child Hygiene work and will continue its work during the next year on this budget. It is reaching the point where many municipalities as the result of the demonstrations that have been carried on, will make appropriations for the nurses and in this way release the money for other communities. We have tried to establish the work as a fundamental preventive measure, and we believe the State will be amply repaid for its investment in the greater healthfulness and happiness of the coming generations.

BIRTHS, DEATHS UNDER ONE YEAR AND DEATHS UNDER ONE MONTH FOR THE YEAR 1920 IN THE COUNTIES OF NEW JERSEY AND MUNICIPALITIES HAVING FIVE THOUSAND OR MORE POPULATION.

	Births.	Deaths Under 1 Yr.	Deaths per 1000 Live Births		
			Under 1 Mo.	Under 1 Mo.	
Entire State,	76431	6873	2961	87.3	38.8
Atlantic County,	1730	149	56	86.1	32.4
Atlantic City,	965	84	36	84.9	37.3
Hammoncton,	197	15	6	76.1	30.5
Bergen County,	4828	390	177	80.9	36.6
Englewood,	230	83	15	148.4	65.2
Garfield,	655	60	25	105.3	38.1
Hackensack,	394	29	10	73.6	25.3
Hidgewood,	114	7	4	61.4	35.0
Rutherford,	141	12	9	85.1	63.9
Burlington County,	1779	171	78	96.1	41.0
Burlington City,	238	15	5	63.0	21.0
Camden County,	4831	484	226	100.2	46.7
Camden City,	3274	353	164	107.3	50.0
Gloucester City,	241	23	11	95.4	45.8
Cape May County,	409	31	11	75.8	26.8

BIRTHS, DEATHS UNDER ONE YEAR AND DEATHS UNDER ONE MONTH FOR THE YEAR 1920 IN THE COUNTIES OF NEW JERSEY AND MUNICIPALITIES HAVING FIVE THOUSAND OR MORE POPULATION—Continued.

	Births.	Deaths Under 1 Yr.	Deaths Under 1 Mo.	Deaths per 1000 Live Births	
				Under 1 Yr.	Under 1 Mo.
Cumberland County,	1246	111	58	89.0	46.5
Bridgeton,	307	54	19	74.4	37.1
Millville,	317	24	11	75.7	34.7
Vineland,	203	20	14	98.5	68.9
Essex County,	16036	1287	593	80.2	36.9
Bloomfield,	483	96	15	74.4	37.1
East Orange,	872	88	39	68.5	44.7
Irrington,	489	20	14	40.9	28.6
Montclair,	570	33	15	57.9	26.3
Newark,	11138	960	432	87.9	38.6
Nutley,	207	21	9	101.4	45.3
Orange,	828	58	26	70.0	31.4
South Orange,	143	4	1	27.9	7.0
West Orange,	357	21	16	58.8	44.8
Gloucester County,	1104	94	46	85.1	41.6
Hudson County,	15690	1408	553	89.7	35.2
Bayonne,	2556	193	90	75.5	35.2
Guttenberg,	133	7	3	43.7	19.6
Harrison,	497	62	25	124.7	60.3
Hoboken,	1609	147	49	91.4	30.4
Jersey City,	7355	745	271	101.2	37.2
Kearny,	670	49	23	73.1	34.3
Town of Union,	380	32	15	84.2	39.4
West Hoboken,	770	51	28	66.2	36.3
West New York,	814	50	21	61.4	23.8
Hunterdon County,	600	44	18	73.3	30.0
Mercer County,	4125	307	214	98.4	51.8
Princeton,	94	3	1	31.6	6.6
Trenton,	3171	428	171	102.8	53.9
Middlesex County,	4946	495	185	94.0	37.4
New Brunswick,	958	65	34	67.8	35.4
Perth Amboy,	1481	109	58	108.0	39.1
Rosevelt,	491	49	13	122.1	32.1
South Amboy,	223	27	17	121.0	76.2
Monmouth County,	2074	176	86	94.8	41.5
Asbury Park,	213	30	15	140.8	54.4
Long Branch,	344	28	10	81.3	29.0
Red Bank,	179	20	11	111.7	61.4
Morris County,	1885	136	71	80.7	42.1
Dover,	246	26	15	108.6	60.9
Morristown,	255	18	11	70.5	43.1
Ocean County,	349	33	20	94.6	57.3
Passaic County,	6402	559	246	87.0	38.4
Passaic City,	1972	221	105	112.0	54.5
Faterson,	3036	233	96	76.7	31.6
Salem County,	814	90	57	110.5	69.4
Salem City,	165	17	12	108.0	72.7
Somerset County,	1036	74	28	71.4	27.0
North Plainfield,	136	8	5	58.8	36.7
Somerville,	167	11	5	65.8	29.9
Sussex County,	610	56	31	91.8	50.8
Union County,	5225	425	177	81.3	33.8
Elizabeth,	708	215	86	79.5	31.8
Plainfield,	2703	32	24	75.4	33.8
Rahway,	229	30	10	131.0	48.9
Summit,	213	14	6	65.7	28.1
Westfield,	205	16	10	78.0	48.7
Warren County,	912	83	56	91.0	39.4
Phillipsburg,	388	34	16	88.7	41.2

INFANT MORTALITY RATE (PER 1,000 LIVE BIRTHS) FOR CITIES IN NEW JERSEY HAVING A POPULATION OF 5,000 OR MORE BY RANK FOR 1920.

City.	Rate.	City.	Rate.
South Orange	27.9	Long Branch	81.3
Princeton	31.8	Town of Union	84.2
Irvine	40.9	Atlantic City	84.9
Guttenberg	45.7	Rutherford	85.1
Montclair	57.9	Newark	87.9
North Plainfield	58.8	Phillipsburg	88.7
West Orange	58.8	Hoboken	91.3
Ridgewood	61.4	Gloucester	95.4
West New York	61.4	Vineland	101.2
Burlington	63.0	Jersey City	101.2
Summit	63.7	Nutley	101.4
Somerville	65.8	Trenton	102.8
West Hoboken	66.2	Salem	103.0
East Orange	66.5	Garfield	105.8
New Brunswick	67.8	Dover	105.8
Orange	70.0	Camden	107.8
Morristown	70.5	Perth Amboy	108.0
Keany	73.1	Bridgeton	111.7
Plainfield	73.4	Red Bank	110.7
Hackensack	73.6	Passaic	112.0
Bloomfield	74.4	South Amboy	121.0
Bayonne	75.5	Roosevelt	122.1
Millville	75.7	Harrison	124.7
Hammonton	76.1	Rahway	131.9
Paterson	76.7	Asbury Park	140.8
Westfield	78.0	Englewood	143.4
Elizabeth	79.5		

BIRTHS AND DEATHS UNDER ONE YEAR FOR FIVE-YEAR PERIOD AND FOR EACH YEAR 1920, 1919, 1918, 1917, 1916, AND FOR TWO-YEAR PERIODS 1920 AND 1919-1917 AND 1916 FOR NEW JERSEY AND FOR EACH COUNTY IN NEW JERSEY.

COUNTY.	5-Year Period 1920-19-18-17-16.	2-Year Period 1920-1919.	1920.	1919.	1918.	2-Year Period 1917-1916.	1917.	1916.
Entire State	98.2	86.7	87.3	86.1	112.3	102.6	100.7	104.7
Atlantic	90.8	85.2	86.1	84.2	116.0	84.5	91	77.2
Bergen	87.4	75.0	80.9	68.4	97.5	95.5	92.3	98.7
Burlington	118.0	109.6	96.1	118.8	134.3	121.5	109.7	132.4
Camden	121.9	105.9	100.2	112.5	148.0	128.5	128.7	124
Cape May	89.7	81.9	75.8	83.9	91.8	96.3	111	84.1
Cumberland	98.1	92.6	89.0	96.8	108.1	98.5	90.3	107.3
Essex	84.5	76.9	80.2	73.6	97.6	85.4	84.4	86.3
Gloucester	109.1	86.6	85.1	88.1	147.2	115.5	103.7	123.5
Hudson	109.3	91.1	89.7	92.7	110.5	104.1	102	106.2
Hunterdon	84.7	77.1	73.3	80.9	85.9	92.1	76.6	108.4
Mercer	112.6	100.7	98.4	102.9	121.2	120.1	111.4	129.3
Middlesex	117.2	95.9	94.0	97.8	139.6	126.9	124.9	129.1
Monmouth	91.0	78.4	84.8	66.7	84.8	100.3	106.8	111.9
Morris	95.8	82.6	80.7	84.7	118.1	97.4	104.4	90.2
Ocean	78.2	86.6	94.6	76.9	79.0	89.8	75.7	80.1
Passaic	98.5	82.3	87.0	78.8	110.4	107.7	99.4	118.9
Salem	111.2	100.1	110.5	89.9	140.0	107.8	118.3	95.5
Somerset	89.4	74.7	71.4	78.5	103.2	97.5	103.9	89.8
Sussex	107.7	102.1	91.8	114.4	123.6	105.4	128.9	80.8
Union	92.7	78.9	81.3	76.3	109.9	96.8	86.5	101.2
Warren	108.6	101.2	91.0	112.3	127.9	105.9	109	101.3

INFANT MORTALITY RATES FOR FIVE-YEAR PERIOD AND FOR EACH YEAR, 1920, 1919, 1918, 1917, 1916, FOR THE TEN LARGEST CITIES IN NEW JERSEY.

	Five-Year Period 1920-19-18-17-16.	1920.	1919.	1918.	1917.	1916.
Newark	89.0	87.9	77.7	102.2	86.5	90.1
Jersey City	112.3	101.2	102.8	124.4	113.3	119.9
Trenton	115.9	102.8	106.6	120.1	110.4	128.1
Camden	129.9	107.8	121.4	153.9	138.7	133.0
Bayonne	96.4	75.5	104.9	110.4	98.0	94.0
Elizabeth	95.3	79.5	81.4	112.0	107.7	96.1
Hoboken	93.8	91.3	76.7	104.2	104.5	91.5
Perth Amboy	109.0	108.0	86.5	123.7	106.5	116.9
Passaic	116.7	112.0	84.6	124.5	118.9	139.2
Paterson	89.0	76.7	74.1	103.3	82.9	107.5

MATERNAL DEATH RATE PER 1,000 LIVE BIRTHS FOR NEW JERSEY, COUNTIES AND THE TEN LARGEST CITIES IN NEW JERSEY, 1920, 1919, 1918, 1917, 1916.

	Five-Year Period 1920-19-18-17-16.	1920.	1919.	1918.	1917.	1916.
Entire State	5.5	6.1	5.1	5.5	5.4	5.4
Counties—						
Atlantic	6.7	7.5	2.5	6.5	10.4	6.5
Bergen	4.6	6.0	3.2	5.8	4.6	3.1
Burlington	6.6	6.1	8.4	9.2	5.6	3.8
Camden	7.2	7.4	7.3	7.3	6.1	7.9
Cape May	2.3	4.8	2.7	2.8	2.8	2.8
Cumberland	6.6	4.8	6.4	5.9	7.4	9.0
Essex	5.2	6.1	5.2	5.2	4.0	5.4
Gloucester	5.1	7.2	2.8	4.0	7.7	3.8
Hudson	5.8	5.8	5.5	5.4	6.4	5.9
Hunterdon	5.9	5.0	1.4	5.2	7.3	11.3
Mercer	8.3	8.2	3.9	8.5	5.9	4.3
Middlesex	4.6	5.6	3.6	4.9	4.8	3.9
Monmouth	5.6	3.8	7.6	5.1	5.7	5.9
Morris	7.7	10.6	3.8	6.5	10.4	6.8
Ocean	2.3	2.8	.....	.....	.....	3.1
Passaic	4.9	4.9	5.1	4.6	4.5	5.1
Salem	8.0	11.0	0.5	3.6	6.8	9.2
Somerset	5.5	6.7	3.2	3.3	5.5	8.9
Sussex	9.1	8.1	9.8	7.1	14.7	6.7
Union	4.4	4.9	5.8	4.8	3.0	3.1
Warren	3.9	3.2	1.1	1.0	4.9	8.7
Cities—						
Newark	5.2	6.7	5.2	5.1	4.1	4.9
Jersey City	6.6	6.5	5.8	6.9	7.8	5.9
Trenton	6.5	8.8	4.3	8.8	5.7	5.0
Camden	8.3	8.5	8.5	8.6	7.5	3.2
Bayonne	4.7	3.5	6.6	4.3	4.1	5.2
Elizabeth	4.0	4.0	5.4	5.6	2.3	2.8
Hoboken	4.1	4.7	4.7	4.3	5.0	6.0
Perth Amboy	4.1	6.0	6.9	4.5	2.7	0.6
Passaic	4.5	5.0	3.6	3.4	6.2	4.2
Paterson	5.6	4.9	7.0	5.8	3.4	7.2

STILL-BIRTH RATE PER 1,000 LIVE BIRTHS FOR ENTIRE STATE, FOR EACH COUNTY
AND FOR THE TEN LARGEST CITIES, FOR FIVE-YEAR PERIOD AND
FOR EACH YEAR, 1920, 1919, 1918, 1917, 1916.

	Five-Year Period 1920-19-18- 17-16.	1920.	1919.	1918.	1917.	1916.
Entire State,	44.0	42.1	42.9	47.2	42.2	45.8
Counties—						
Atlantic,	51.7	46.2	66.5	40.8	48.7	56.2
Bergen,	42.3	31.0	34.9	72.4	38.0	37.6
Burlington,	37.5	28.6	32.6	45.9	35.5	48.0
Camden,	50.9	52.3	43.0	46.6	53.6	60.2
Cape May,	44.0	58.6	52.7	47.2	34.1	28.0
Cumberland,	41.7	42.5	39.5	47.7	38.1	40.5
Essex,	40.8	39.4	42.1	44.2	37.7	40.4
Gloucester,	35.4	28.9	32.5	46.0	40.8	29.3
Hudson,	48.6	49.5	48.1	46.3	46.8	50.5
Hunterdon,	43.4	50.0	29.7	41.7	44.2	52.5
Mercer,	48.6	41.6	52.2	53.8	47.6	48.3
Middlesex,	35.5	32.1	35.8	38.3	36.2	40.7
Monmouth,	42.5	41.9	43.7	45.9	40.9	40.1
Morris,	44.2	45.6	24.5	53.3	47.9	48.5
Ocean,	37.4	37.2	62.9	44.6	58.3	85.4
Passaic,	44.0	41.8	44.5	44.9	40.4	49.9
Salem,	49.7	72.4	47.9	43.8	43.2	41.1
Somerset,	40.4	43.4	38.1	35.5	40.8	43.7
Sussex,	52.5	36.0	57.1	51.9	57.0	63.4
Union,	41.5	35.7	37.5	46.4	45.4	48.0
Warren,	45.1	53.7	43.0	50.5	31.7	47.9
Cities—						
Newark,	42.8	42.1	45.2	45.9	39.1	41.9
Jersey City,	58.1	57.3	54.7	53.8	53.7	55.9
Trenton,	49.3	44.1	50.3	54.6	51.1	48.1
Camden,	55.5	38.6	51.1	51.0	60.1	56.7
Bayonne,	40.0	38.7	44.7	37.4	40.8	38.6
Elizabeth,	44.4	38.8	33.9	50.4	48.6	50.7
Hoboken,	47.9	52.2	38.9	56.1	39.3	53.5
Perth Amboy,	32.1	27.6	37.9	30.6	31.7	32.5
Passaic,	44.6	47.6	32.7	48.4	42.9	50.6
Paterson,	45.3	40.1	50.6	46.5	39.9	50.6

Report of the Bureau of Venereal Disease Control.

A. J. CASSELMAN, M.D., D.P.H., CHIEF.

In presenting the report of the Bureau of Venereal Disease Control for the fiscal year ending June 30, 1921, I wish to call attention to the inauguration of a program to encourage the co-operation of the physicians of New Jersey in the Bureau's medical activities. After a series of bi-monthly conferences for the physicians conducting the venereal clinics of the State, a symposium on the diagnosis and treatment of venereal diseases, open to all physicians, was held in Newark. This conference was addressed by recognized authorities and was attended by approximately one hundred and fifty physicians. Those who attended were so enthusiastic about the value of the meetings that it was evident that such symposiums should be conducted annually or semi-annually by the Department. Ten of the medical societies were addressed by medical representatives of the Bureau, and motion pictures on the diagnosis and treatment of syphilis or gonorrhœa were exhibited. The physicians of the State were circularized frequently during the year, and from the responses to a questionnaire on the diagnosis and treatment of syphilis as conducted by the individual practitioner, the data were obtained for the preparation of a pamphlet on the disease which is being mailed to the New Jersey physicians by the U. S. Public Health Service at Washington.

Attention should be called to the fact that this additional activity in the medical phase of the work was begun even though the appropriation for the Bureau was reduced from approximately \$55,000 to approximately \$35,000. This reduction was caused by the action of Congress in reducing the fund allotted to all State Boards of Health for the fiscal year. Since only approximately \$15,000 was available for New Jersey from the

Federal funds, only a like amount was granted from the State funds, the unexpended balance from the previous year, making the total approximately \$35,000. The field staff of the Bureau had to be reduced from five to four representatives, and the office personnel from ten to four clerks.

During this year's session of the New Jersey Legislature it was made a law that no person should marry while suffering from syphilis or gonorrhoea in the infectious stage. As an attempt to make this law effective, all persons before receiving a marriage certificate are required to swear that they are not so infected.

MEDICAL MEASURES.

Aside from the conferences for physicians outlined above, the Bureau has assisted in the establishment of five new public venereal disease clinics, making a total of fifteen co-operating with the Bureau. At these fifteen clinics patients received 42,328 treatments during the year. Two hundred and thirty-five patients were discharged as cured and 1,142 stopped treatment without permission. In municipalities without public clinics physicians have been asked to enter into an agreement with the Bureau to treat at a nominal charge those patients who cannot pay the usual fees for such treatment. Twenty-six physicians are now co-operating with the Bureau in this manner. To the public clinics and private physicians the Bureau has distributed 11,334 doses of arsphenamine.

I. Number of cases treated at clinics,	2,879
(a) Number of cases of gonorrhoea treated,	1,450
(b) Number of cases of syphilis treated,	1,411
(c) Number of cases of chancroid treated,	18
(d) Number of cases of other venereal diseases treated,	0
II. Number of cases reported,	6,370
(a) Number of cases of gonorrhoea reported,	2,855
(b) Number of cases of syphilis reported,	3,394
(c) Number of cases of chancroid reported,	121

EDUCATIONAL MEASURES.

The educational activities of the Bureau have not differed materially from those of the previous years. However, an at-

tempt has been made to link venereal disease with other health problems in the educational attack. To this end smallpox, diphtheria, typhoid and venereal diseases have been exhibited in the Bureau's mechanical stereopticons, and lecturers in discussing venereal diseases usually have prefaced their discussions with the relation of venereal disease control to general public health activities.

Purposes of Education.—The educational campaign was carried out in such a manner as to attempt not merely to popularize the knowledge of the scientific facts concerning venereal disease, but to accomplish three other objects:

1. To give the individual the right sex attitude and incentive for proper sex behavior.
2. To get free medical facilities for indigent patients and pay clinics for self-supporting people who cannot pay the usual fees for anti-syphilitic treatment.
3. To obtain the co-operation of the health officers, physicians, hospitals, police, courts, social workers and the general public.

Means.—The people are given this information and education through the use of motion pictures, charts, the distribution of literature, and by lectures.

The films used by the Bureau have been carefully prepared by physicians trained in social hygiene and under the direct supervision of several co-operative Federal agencies. The Bureau is at present using the following films: "The Gift of Life," the first four reels for boys and girls, the complete film, five reels, for women; "The End of the Road," for men or women; the Women's Lecture Film and the Men's Lecture Film; "Gonorrhoea in the Male" and "The Modern Diagnosis and Treatment of Syphilis," for physicians.

Presentation of Films.—The Bureau has offered the films to selected groups of individuals. Great care has always been exercised in the matter of showing the films to only one sex at a time; audiences have been further restricted according to age. Since the Bureau recognizes the fact that it is not only simply intellectual training, but training of the morals and emotions which will ultimately effect the sex behavior of people, the show-

ings of the films have been accompanied with brief lectures. The films were explained by the speakers by giving data and scientific facts regarding bacteria, methods of transmission, and the possibility of cure and prevention. The speakers frequently explained in more or less detail many of the misconceptions regarding these diseases, such as the fact that ordinary body cleanliness is not necessarily synonymous with freedom from venereal disease.

The immediate results are to stimulate interest in the venereal disease campaign, to gain the support of the city, State and Federal officials in their work, and to get those who have ever been exposed or infected to seek medical advice in regard to diagnosis, treatment or cure.

In addition to motion pictures, the Bureau used stereopticon slides, animated pictures and charts, and these render approximately the same values as the motion pictures.

A State-wide conference for social workers has been held for the purpose of stimulating the social leaders of the various communities to have the American plan for combating venereal diseases carried out in their respective localities.

Local conferences have been held in ten cities and committees organized to assist in the spreading of the information and to carry on the educational work.

Two hundred and fifty-five lectures have been given to a total of 28,912 people.

Education has aroused the enthusiasm and the interest of the people so that they have been desirous to have their respective localities supplied with adequate medical facilities for the treatment of indigent patients, and to have sex education properly incorporated in school curricula.

In many instances the people, health officers, physicians, hospitals, police force and social workers have co-operated in an earnest attempt to solve their community problem.

ORGANIZATIONS WHICH HAVE CO-OPERATED IN THE EDUCATIONAL WORK FOR THE CONTROL OF VENEREAL DISEASES.

State Organizations.

League of Women Voters	State Committee of the Y. M. C. A.
American Legion	N. J. Federated Woman's Clubs
N. J. Federation of Labor	N. J. Congress of Mothers and Parent-Teacher Associations
State Department of Education	N. J. Sunday School Association
State Chamber of Commerce	State Boy and Girl Club Leaders
Manufacturers' Association	State Labor Department

County Organizations.

County Medical Societies.

City Organizations.

Chambers of Commerce	Kiwanis Clubs	Y. M. C. A.	K. of C.
Rotary Clubs	Y. M. H. A.	Y. W. C. A.	Boy Scouts
Ministerial Associations	American Red Cross Chapters		

Total number of pamphlets distributed during 1920-21,	84,389
(a) In response to requests received,	12,842
(b) In general circulation,	71,547
Total number of lectures given,	255
(a) Number illustrated with motion pictures,	72
(b) Number illustrated with stereopticon slides,	16
(c) Number illustrated with charts,	24
(d) Number not illustrated,	143

REPRESSIVE AND PROTECTIVE WORK.

The U. S. Interdepartmental Social Hygiene Board is charged with the responsibility of protecting soldiers and sailors; however, since uniformed men are generally permitted to frequent every locality and community, in order to completely safeguard them, it becomes necessary to cover the entire country.

Ever since the Federal Board came into existence in 1918, it has constantly maintained workers in New Jersey. For the past year the personnel of the Bureau of Protective Social Measures has been co-operating with the N. J. Bureau of Venereal Disease Control, under the supervision of the State Director of Health. The great value of the work has been demonstrated often and

the various communities in which the work has been carried on have been made to appreciate how indispensable it has become.

The army statistics for the 14,000 cases of infection, covering an approximate period from December 10, 1918, to March 21, 1921, reveal interesting data. In a consideration of these statistics it must be remembered that no consideration is given to the question as to whether the soldier was stationed within or without the State; they include all cases of infection contracted within the borders of the State. During this period there probably has been an average of 15,000 men stationed in New Jersey. Thousands of men have visited the State and passed through it en route to various parts of the country, as one of the cities in the State has served as a principal debarkation port. Of these 14,000 cases only 164 were contracted in New Jersey. The following table gives the communities where infections were contracted and the number of cases in each instance:

Asbury Park,	9	Eatontown,	1	Paterson,	5
Atlantic City,	2	Elizabeth,	2	Pointville,	1
Belmar,	1	Fieldsboro,	1	Princeton,	1
Bordentown,	1	Highland,	2	Red Bank,	3
Browns Mills,	1	Hoboken,	11	Smithville,	1
Caldwell,	1	Jersey City,	9	Somerville,	1
Camden,	8	Long Branch,	10	Tenaflly,	1
Cookstown,	1	Mount Holly,	11	Trenton,	31
Camp Dix,	8	New Brunswick,	2	Wellington,	2
Demarest,	1	Newark,	21	West Hoboken,	1
East Orange,	1	Passaic,	1	Wrightstown,	12

An instance showing the possibility of reducing the incidence of venereal diseases through protective and repressive measures is given in the report of the last 119 cases of infection of men stationed at Camp Dix.

Report of 119 consecutive infections immediately preceding June 15, 1921, of soldiers stationed at Camp Dix.

Atlantic City,	1
Camden,	17
Camp Dix,	6
Mount Holly,	6
Trenton,	4
Wrightstown,	6

Total number of cases contracted in New Jersey,	40
Total number of cases contracted outside of New Jersey,	79

Repressive.—If soldiers or civilians are to be protected effectively from venereal disease, it is essential that the clandestine prostitute and charity girl shall be suppressed or controlled and their activities redirected into legitimate channels. Since practically all venereal disease is contracted through illicit sexual intercourse, in attempting to control the diseases it is logical to endeavor to remove from society the infecting sources.

Treatment Alone Not a Complete Success.—The most optimistic health officer cannot hope to induce or to force all infected individuals to take treatment and continue the treatment until either cured or rendered non-infectious.

Last year 2,846 cases were admitted to the clinics and 1,142 discontinued treatment without permission. Since they may discontinue treatment when they wish to be treated by another physician, or when cured, or probably cured, or non-infectious, it is probable that these cases were still in the infectious stage when they stopped taking the treatment.

Information Alone Not Sufficient.—The mere acquiring of information or knowledge in regard to venereal diseases is not sufficient to deter a large group of young people from exposure. To wit, the medical student who knows the prevalence, communicability and the serious consequences, is not a model of virtue.

It is difficult to make young people act on an idealistic basis by spasmodic education in the home or in the school as long as sexual promiscuity is as general as at present. Hence, it is desirable to have a social worker urge the public officials to have the State laws and city ordinances concerning sex matters persistently enforced.

Practical Protective and Repressive Work.—One protective worker of the New Jersey Bureau of Protective Social Measures, in the course of her routine duties, in a city of less than 15,000 population, during a period of less than six months, apprehended 45 prostitutes. These delinquents were committed to institutions or placed in environments where opportunities for rehabili-

tation were good and the possibility of making a livelihood lawfully under the supervision of trained social workers. It was through constant vigilance in this community that 45 sources of infection were eliminated in six months. Economically, socially and physically it is cheaper and better to prevent than to attempt to cure. It is unquestionably due to the activities of such protective social workers as this that New Jersey has maintained such a wonderfully low record of venereal disease infection among its soldiers.

During the year the two State Bureaus worked with and through local volunteer agencies and in co-operation with city officials and assisted in the closing of two "red-light districts." The State now is free from any recognized "red-light district."

	Population (1920 census).	No. V. D. cases reported to State Department of Health during calendar year 1920.	No. V. D. cases reported per 10,000 population.	Rank of the cities in regard to reporting.	No. of soldiers infected from Aug., 1919, to March, 1921.	No. of soldiers on venereal disease activities. Data collected by U. S. I. H. S., Feb., 1920.	Relative standing of the 27 graded cities.	Cases treated at government clinics during calendar year 1920.	Treatments given.	Cases treated at government clinics during year July 1, 1920, to June 30, 1921.	Treatments given.
Atlantic City.	50,707	226	44.3	22	2	78	19	183	1,812		
Bayonne.	76,754	37	4.9	24	1	311	10	18	152		
Bloomfield.	22,019	39	17.7	11	1	85	24				
Camden.	116,398	628	54.1	1	8	375	4	624	5,219	475	6,770
East Orange.	50,710	82	16.0	13	1	12	12				
Elizabeth.	96,782	118	12.3	14	2	287	14	26	263	58	743
Garfield.	19,881	10	5.2	23	1	64	20				
Hackensack.	17,637	57	31.6	6	1	230	15				
Harrison.	15,721	7	4.4	25	7	47	23				
Hoboken.	63,776	39	5.7	17	11	54	21				
Irlington.	25,499	27	10.6	16	1	32	26				
Jersey City.	298,013	301	10.1	17	9	346	7	266	6,788	259	5,384
Kearny.	26,724	17	6.3	20	10	90	18				
Long Branch.	13,521	36	25.6	9	10	307	11	89	2,102	71	2,149
Montclair.	28,816	28	21.4	18	1	201	12			19	285
New Brunswick.	32,779	53	18.0	13	3	289	13	120	1,346	35	858
Newark.	414,524	1,504	36.2	6	21	654	1	720	8,448	1,170	12,703
Orange.	33,288	127	38.5	4	4	424	2	124	1,725	115	2,263
Passaic.	68,941	76	11.9	15	1	136	16			17	408
Paterson.	136,873	374	27.3	3	3	329	9	81	1,488	147	2,560
Perth Amboy.	41,707	32	7.9	19	1	333	8				
Phillipsburg.	16,923	10	5.9	27	1	16	27				
Plainfield.	27,700	105	37.9	5	1	351	6	118	1,409	104	2,168
Trenton.	119,287	601	42.1	3	31	861	5	190	4,642	293	5,068
Union.	20,651	17	8.1	18	1	32	17				
West Hoboken.	40,074	24	6.0	21	1	42	23				
West New York.	29,226	12	4.0	26	1	93	17				

	For the Fiscal Year, July 1, 1920, to June 30, 1921.				
	No. of cases discharged as cured.	No. cases discharged as probably cured.	No. cases discharged as non-infectious.	No. of cases which discontinued treatment with permission.	No. cases which discontinued treatment without permission.
Atlantic City.	2	3		62	81
Bayonne.		3		2	7
Bloomfield.					
Camden.	37	4		29	469
East Orange.					
Elizabeth.	2	8		2	21
Garfield.					
Hackensack.					
Harrison.					
Hoboken.					
Elizabeth.					
Jersey City.	2	5	35	7	199
Kearny.					
Long Branch.	3	19		19	48
Montclair.		1			
New Brunswick.	5	1	35	9	24
Newark.	153	25		95	6
Orange.	8	1	1	34	8
Passaic.	1			2	6
Paterson.	1	11		33	41
Perth Amboy.					
Phillipsburg.					
Plainfield.	7	5		17	89
Trenton.	14	31	3	31	169
Union.					
West Hoboken.					
West New York.					

Report of the Bureau of Vital Statistics.

DAVID S. SOUTH, CHIEF.

The fiscal year which this report covers has been one of increased activity for the Bureau of Vital Statistics. Chapter 99, Laws of 1920, known as the Vital Statistics Act, and which is patterned after the Model Law for the registration of Vital Statistics, places the State Registrar, who is the Chief of the Bureau of Vital Statistics, in direct supervision over local registrars of which there are 505 in the State. Efforts have been made by personal correspondence and circular matter to increase the efforts of these officials in order that the provisions of the law will be more fully observed. It was found necessary to terminate the services of two registrars who were performing the duties incumbent upon them in an unsatisfactory manner.

The outstanding feature of the year's activities was the admission of New Jersey to the United States Registration Area for Births. The area comprises all States which have proven that ninety per cent. of all births occurring within the State are properly recorded. Special Agents of the Government, with the assistance of the clerical force of the Bureau, conducted an elaborate test covering a period of two months and tabulated results show that approximately ninety-five per cent. of New Jersey births are properly recorded. Admission to the Registration Area is the goal toward which the Bureau has been striving for a number of years. Publicity methods have been employed, death certificates of infants have been checked for birth reports, and house to house canvasses have been conducted by local officials at the request of the Bureau.

Local registrars are now required to present to the parents of each new born child a certificate of birth of elaborate style. This fact has been used as a news item by the Bureau in order that parents be cognizant of the value of these records so that

if a certificate is not received, inquiry will be made and when the birth has not been reported a certificate will be filed. Parents were queried in every municipality to ascertain whether this requirement of the law was being complied with, and if not, the observance by the local registrar secured.

The value of the statistical matter prepared and published by the Bureau has been clearly proven as the requests for this class of data have more than doubled during the past year. Use of the Hollerith Tabulating equipment greatly facilitates this work. One of the units now in operation is to be exchanged for a new type machine which will greatly expedite the compilation of a certain class of statistical matter and continue New Jersey in the front rank of registration States.

The Marriage License Act, which was placed upon the statute books after years of effort, continues satisfactory in preventing hasty and irregular marriages. While the marriage rate has fallen as a result of this Law, it is believed that the divorce rate of persons married under this act is lower than before the act was in effect. An amendment passed at the last session of the legislature requires licensing officers to inquire of applicants whether they are infected with venereal disease. They are also required to swear to the accuracy of their answers to this and the other questions specified by law.

It is felt that it would be a breach of faith not to again mention the matter of indexing the records of births, marriages and deaths of which there are approximately five million on file. These records date back to 1848 and are of inestimable value. The high percentage of foreign population of New Jersey with the error incident to foreigners employing physicians and undertakers of other nationalities, results in a great number of certificates being lost for future reference due to misspelling of names. It is seriously urged that an appropriation of \$5,000 per year be made and continued until these records are completely indexed in an approved manner. The urgency of this matter is clearly shown by the estimate that twenty per cent. of the birth cases where no record is found, are on file under some other spelling or name. A complete index would obliterate this difficulty and save tremendous inconvenience to

hundreds of applicants who desire proof of events for numerous purposes in various lands.

The following table is a summary of the records indexed, tabulated and permanently preserved during the past three years, together with the number of searches made and fees received therefore. Additional information is requested of approximately three thousand physicians, midwives, ministers and undertakers annually, in order to complete or correct certificates received. All the work outlined herein is carried on by a force of eleven employees including the Chief of the Bureau.

GENERAL SUMMARY.

	1918.	1919.	1920.	Total.
Deaths registered, indexed and tabulated,	60,852	39,979	40,820	141,651
Births registered, indexed and tabulated,	74,549	70,935	76,431	221,915
Still-births registered, indexed and tabulated,	3,525	3,047	3,221	9,793
Marriages registered, indexed and tabulated,	23,989	29,281	31,327	84,597
Total records registered, tabulated and permanently preserved,	162,915	143,242	151,799	457,956
Certified copies issued and searches made for which fees were received,	7,245	4,722	4,664	16,631
Certified copies issued and searches made in pension cases for which no fees were received,	4,947	6,681	4,232	15,860
Fees returned to State Treasurer for certified copies and searches,	\$4,979.15	\$3,822.75	\$4,051.00	\$12,852.90

TABLES—1920.

1. Births, marriages and deaths reported, with rates, 1879-1920.
2. Deaths by age periods, with percentage of each period of total deaths.
3. Deaths reported and death-rate from tuberculosis of lungs, 1900-1920.
4. Deaths of infants under five years of age and percentage of total deaths, 1904-1920.

5. Death rate of total population and of white and colored inhabitants by causes.

6. Percentage of deaths of each cause of total deaths and of sex of total.

7. Births in counties and cities by months.

8. Deaths in counties and cities by months.

9. Deaths by months by causes.

10. Deaths under one year of age by months and causes.

11. Deaths by causes, by days, weeks and months of the first year of life.

12. Births, marriages and deaths and infant deaths by counties, cities, boroughs and townships.

13. Deaths by counties and cities according to the Detailed International Classification.

14. Deaths by occupation, age groups and certain selected causes.

15. Deaths by causes and age periods, New Jersey, each county and the following municipalities: (County figures include cities which follow.)

- Atlantic County—
- Atlantic City
- Hammonton
- Bergen County—
- Englewood
- Garfield
- Hackensack
- Ridgewood
- Rutherford
- Burlington County —
- Burlington City
- Camden County
- Camden City
- Gloucester
- Cape May County—
- Cumberland County—
- Bridgeton
- Millville
- Vineland
- Essex County—
- Bloomfield
- East Orange
- Irvington
- Montclair
- Newark
- Essex County—(Con.)
- Nutley
- Orange
- South Orange
- West Orange
- Gloucester County—
- Hudson County—
- Bayonne
- Guttenberg
- Harrison
- Hoboken
- Jersey City
- Kearny
- Town of Union
- West Hoboken
- West New York
- Hunterdon County—
- Mercer County—
- Princeton
- Trenton
- Middlesex County—
- New Brunswick
- Perth Amboy
- Roosevelt
- South Amboy
- Monmouth County—
- Asbury Park
- Long Branch
- Red Bank
- Morris County—
- Dover
- Morristown
- Ocean County—
- Passaic County—
- Passaic City
- Paterson
- Salem County—
- Salem City
- Somerset County—
- North Plainfield
- Somerville
- Sussex County—
- Union County—
- Elizabeth
- Plainfield
- Rahway
- Summit
- Westfield
- Warren County—
- Phillipsburg

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

YEAR.	Population.*	BIRTHS.		MARRIAGES.		DEATHS.	
		Number of births reported.	Birth rate per 1,000 population.	Number of marriages.	Persons married per 1,000 population.	Number of deaths.	Death rate per 1,000 population.
1879	1,020,584	23,116	22.65	7,066	13.91	20,440	20.03
1880	1,130,892	23,680	20.94	7,983	14.08	18,967	16.77
1881	1,160,275	23,484	20.24	8,109	13.98	20,812	17.94
1882	1,189,658	23,108	19.42	8,537	14.86	22,959	19.32
1883	1,209,048	24,430	20.21	9,166	15.16	23,310	19.28
1884	1,248,224	25,263	20.20	9,968	14.37	21,716	17.40
1885	1,278,033	24,077	18.84	8,989	14.07	22,907	18.63
1886	1,310,431	23,497	19.46	12,351	18.85	22,734	17.35
1887	1,342,829	27,840	20.36	15,418	22.96	24,351	18.12
1888	1,375,227	28,074	20.41	16,025	23.31	27,173	19.76
1889	1,407,625	29,099	20.67	15,726	22.34	26,543	18.86
1890	1,441,017	30,103	20.89	15,564	21.60	28,530	19.80
1891	1,478,784	28,882	19.53	15,305	20.70	28,840	19.50
1892	1,511,653	30,627	20.26	16,062	21.23	32,088	21.62
1893	1,538,798	32,285	20.98	17,178	22.33	30,536	19.83
1894	1,578,373	33,662	21.33	16,245	20.58	30,004	19.01
1895	1,617,942	31,742	18.97	15,873	18.98	30,634	18.89
1896	1,718,543	31,207	18.16	18,370	21.38	30,767	17.90
1897	1,764,344	31,595	17.91	19,171	20.60	29,822	16.90
1898	1,810,008	33,515	17.96	13,213	14.59	27,337	15.11
1899	1,855,872	29,419	15.84	13,336	14.37	30,999	16.70
1900	1,883,689	32,270	17.13	14,611	15.51	31,474	16.62
1901	1,923,781	34,812	18.06	16,539	17.18	31,739	16.48
1902	1,967,893	35,116	17.84	18,190	18.43	31,319	15.91
1903	2,016,737	37,242	18.47	19,512	19.35	31,820	15.87
1904	2,058,909	38,751	18.82	19,919	18.38	33,298	17.14
1905	2,144,143	39,689	18.51	20,572	19.19	33,664	15.70
1906	2,196,238	42,677	19.43	21,580	19.08	35,670	16.24
1907	2,248,331	44,651	19.86	23,949	21.04	37,408	16.63
1908	2,300,427	47,465	20.61	26,135	22.74	35,597	15.47
1909	2,352,522	47,508	20.19	29,774	25.87	36,359	15.46
1910	2,337,167	58,942	21.26	27,912	22.00	39,494	15.57
1911	2,615,772	58,133	22.22	25,014	19.18	38,612	14.76
1912	2,694,377	60,073	22.30	26,821	19.91	37,772	14.02
1913	2,772,951	61,432	22.15	27,697	19.98	38,425	14.22
1914	2,851,856	65,403	22.94	28,329	20.01	39,967	14.02
1915	2,877,332	66,476	23.10	27,694	19.25	39,435	13.70
1916	2,948,016	70,211	23.82	31,168	21.15	43,376	14.71
1917	3,014,193	75,309	24.98	30,060	19.94	43,532	14.44
1918	3,080,371	74,549	24.20	23,989	15.58	60,852	19.75
1919	3,148,547	79,835	25.54	29,251	18.51	69,076	12.71
1920	3,157,767	79,431	25.37	31,327	19.65	60,320	12.80

* Estimated except for census years.

TABLE 2.—TOTAL DEATHS BY AGE PERIODS SHOWING PERCENTAGE OF TOTAL DEATHS—1920.

AGE PERIODS.	1920		2
	Deaths	Percentage of total	
Under 1 year.	6,072	16.3	383
1 year.	1,533	3.8	0.0
2 years.	617	1.5	2,000
3 years.	430	1.1	2,000
4 years.	317	0.7	2,000
Under 5 years.	9,530	23.4	383
5 to 9.	901	2.4	0.0
10 to 19.	1,627	3.8	0.0
20 to 29.	2,988	7.3	0.0
30 to 39.	3,490	8.5	0.0
40 to 49.	3,700	9.3	0.0
50 to 59.	4,074	11.5	0.0
60 to 69.	5,516	13.5	0.0
70 to 79.	5,305	13.1	0.0
80 to 89.	2,000	6.2	0.0
90 and over.	383	0.9	0.0
Unknown.	.....	.....	.....
Total.	40,820	100.0	.....

TABLE 3.—DEATHS FROM TUBERCULOSIS OF LUNGS AND ACUTE MILIARY TUBERCULOSIS IN NEW JERSEY—1900 TO 1920.

YEAR.	Population.	Deaths.	Death rate per 100,000 Population.
1900.	1,883,699	3,514	186.6
1901.	1,925,731	3,257	169.1
1902.	1,967,593	3,015	153.2
1903.	2,016,797	3,350	167.6
1904.	2,053,909	3,670	178.2
1905.	2,144,143	3,587	167.3
1906.	2,197,238	3,654	166.4
1907.	2,245,331	3,749	166.7
1908.	2,300,427	3,616	157.2
1909.	2,352,522	3,608	153.4
1910.	2,537,167	3,902	153.8
1911.	2,615,772	3,936	152.4
1912.	2,694,577	3,708	137.6
1913.	2,772,931	3,683	132.8
1914.	2,851,386	3,856	135.2
1915.	2,877,532	3,917	136.1
1916.	2,948,016	3,844	130.4
1917.	3,014,193	4,146	137.5
1918.	3,080,371	4,353	141.3
1919.	3,146,547	3,495	111.1
1920.	3,187,767	3,246	101.8

TABLE 4.—NUMBER OF DEATHS AT ALL AGES, UNDER ONE YEAR OF AGE AND UNDER FIVE YEARS OF AGE, AND THEIR PERCENTAGE OF THE TOTAL.

CALENDAR YEAR.	Deaths in New Jersey.				
	All Ages.	Under one year.		Under five years.	
		Number.	Percentage of Total.	Number.	Percentage of Total.
1904.	35,298	7,472	21.2	10,327	31.0
1905.	33,864	6,961	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.	38,369	7,658	21.1	11,137	30.6
1910.	39,494	8,352	21.1	11,648	29.5
1911.	38,612	7,542	19.8	10,740	27.8
1912.	37,772	7,457	19.7	10,309	27.3
1913.	39,425	7,542	19.1	16,686	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	11,168	25.8
1917.	43,532	7,582	17.4	10,287	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

TABLE 5.—DEATHS IN NEW JERSEY PER 100,000 POPULATION, TOTAL, AND BY WHITE AND COLORED INHABITANTS, 1920.

Abridged International List Number.	CAUSE OF DEATH.	Total deaths per 100,000 population.	White deaths per 100,000 white population.	Colored deaths per 100,000 colored population.
1	Typhoid fever,	3.1	3.0	7.1
2	Typhus fever,			
3	Malaria, .....	.1	.1	
4	Smallpox,			
5	Measles,	9.3	9.5	4.7
6	Scarlet fever,	3.2	3.3	.7
7	Whooping cough,	12.2	11.7	20.6
8	Diphtheria and croup,	17.7	18.0	10.3
9	Influenza,	36.03	38.1	33.3
10	Asiatic cholera,			
11	Cholera nostras, .....	.1	.1	
12	Other epidemic diseases,	3.7	3.5	7.1
13	Tuberculosis of the lungs,	101.8	95.6	226.0
14	Tuberculous meningitis,	5.5	5.3	9.8
15	Other forms of tuberculosis,	6.2	5.7	17.0
16	Cancer and other malignant tumors,	86.5	87.3	68.0
17	Simple meningitis,	6.5	6.4	9.5
18	Cerebral hemorrhage and softening,	91.7	91.6	93.4
19	Organic diseases of the heart,	156.5	133.9	223.5
20	Acute bronchitis,	12.4	11.7	30.2
21	Chronic bronchitis,	5.1	5.2	2.3
22	Pneumonia,	92.0	87.7	193.7
23	Other diseases of the respiratory system (tuberculosis excepted),	76.3	73.1	153.5
24	Diseases of the stomach (cancer excepted),	8.6	8.2	17.0
25	Diarrhea and enteritis (under 2 years),	50.2	48.9	81.9
26	Appendicitis and typhlitis,	10.8	10.6	17.0
27	Hernia, intestinal obstruction,	9.3	8.9	19.5
28	Cirrhosis of the liver,	7.4	7.6	3.9
29	Acute nephritis and Bright's disease,	105.6	103.7	153.5
30	Noncancerous tumors and other diseases of the female genital organs,	4.2	3.7	17.0
31	Puerperal septicemia (puerperal fever, peritonitis),	5.3	5.2	7.9
32	Other puerperal accidents of pregnancy and labor,	9.4	9.2	13.5
33	Congenital debility and malformations,	70.9	68.3	120.9
34	Senility,	7.1	7.2	4.7
35	Suicide,	10.9	11.1	7.1
36	Violent deaths (suicide excepted),	70.9	70.3	85.9
37	Other diseases,	179.1	176.0	253.3
38	Unknown or ill-defined diseases,	2.2	2.1	6.5
	Total,	1280.5	1251.8	1978.7

TABLE 6.—PERCENTAGE OF DEATHS BY CAUSES TO TOTAL DEATHS AND BY SEX TO TOTAL, 1920.

Abridged International List Number.	CAUSE OF DEATH.	Percentage of total.	Males—Percentage of total.	Females—Percentage of total.
1	Typhoid fever, .....	.2	54.4	45.6
2	Typhus fever,		100.0	
3	Malaria,		80.0	20.0
4	Smallpox,			
5	Measles, .....	.7	55.6	44.4
6	Scarlet fever, .....	.3	39.8	60.2
7	Whooping cough,	1.0	42.7	57.3
8	Diphtheria and croup,	1.4	53.4	46.6
9	Influenza,	2.9	51.8	48.2
10	Asiatic cholera,			
11	Cholera nostras,		50.0	50.0
12	Other epidemic diseases, .....	.3	55.1	44.9
13	Tuberculosis of the lungs,	3.6	52.8	47.2
14	Tuberculous meningitis, .....	.4	52.5	47.5
15	Other forms of tuberculosis, .....	.5	50.0	50.0
16	Cancer and other malignant tumors,	6.8	40.2	59.8
17	Simple meningitis, .....	.5	56.0	44.0
18	Cerebral hemorrhage and softening,	7.2	49.7	50.3
19	Organic diseases of the heart,	12.2	48.7	51.3
20	Acute bronchitis,	1.0	52.1	47.9
21	Chronic bronchitis, .....	.4	44.8	55.2
22	Pneumonia,	7.2	53.7	46.3
23	Other diseases of the respiratory system (tuberculosis excepted),	6.0	52.0	48.0
24	Diseases of the stomach (cancer excepted), .....	.7	60.4	39.6
25	Diarrhea and enteritis (under 2 years),	3.9	56.7	43.3
26	Appendicitis and typhlitis, .....	.9	58.5	41.5
27	Hernia, intestinal obstruction, .....	.7	54.2	45.8
28	Cirrhosis of the liver, .....	.6	65.6	34.5
29	Acute nephritis and Bright's disease,	8.3	49.0	51.0
30	Noncancerous tumors and other diseases of the female genital organs, .....	.3		100.0
31	Puerperal septicemia (puerperal fever, peritonitis), .....	.4		100.0
32	Other puerperal accidents of pregnancy and labor, .....	.7		100.0
33	Congenital debility and malformations,	5.5	56.1	43.9
34	Senility, .....	.6	43.7	56.3
35	Suicide, .....	.9	66.8	33.2
36	Violent deaths (suicide excepted),	5.5	74.1	25.9
37	Other diseases,	14.0	53.2	46.8
38	Unknown or ill-defined diseases, .....	.2	55.6	44.4
	Total,	100.0	51.6	48.4

TABLE 9.—TOTAL DEATHS IN NEW JERSEY BY MONTHS AND CAUSES OF DEATH, 1920.

Abridged Internal List No.	CAUSE OF DEATH.	MONTH OF DEATH.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
1	Typhoid fever.	101	8	5	4	4	9	5	10	13	14	11	8	16
2	Typhus fever.	51	1	1	1	1	1	1	2	1	1	1	1	1
3	Malaria.	297	46	51	37	68	54	15	3	0	3	3	5	18
4	Smallpox.	22	28	64	52	26	22	27	27	27	27	40	63	63
5	Measles.	569	61	65	104	49	50	25	27	27	40	9	12	30
6	Whooping cough.	1174	184	700	151	38	27	9	5	3	0	9	12	30
7	Diphtheria and group.	4	1	1	1	1	1	1	1	1	1	1	1	1
8	Scarlet fever.	118	15	5	14	17	12	5	8	11	2	6	11	5
9	Other epidemic diseases.	3246	284	308	340	322	286	267	294	228	213	210	227	228
10	Tuberculosis of the lungs.	177	18	15	24	17	11	19	9	17	12	12	9	14
11	Tuberculous meningitis.	286	20	14	18	14	27	12	15	17	10	17	18	16
12	Brain tuberculosis.	200	14	10	13	11	10	9	13	10	10	10	10	10
13	Cancer and other tumors.	2300	34	37	24	31	17	6	19	23	23	20	24	20
14	Simple meningitis.	2926	300	280	300	262	257	260	243	175	161	217	205	286
15	Cerebral hemorrhage and softening.	4902	513	603	481	468	451	507	352	300	301	355	378	434
16	Other diseases of the heart.	108	17	17	17	23	11	13	12	12	16	13	24	38
17	Acute nephritis.	165	16	25	11	11	11	11	11	11	11	13	24	38
18	Chronic bronchitis.	2359	473	1048	300	227	172	95	16	40	50	89	141	226
19	Other diseases of the respiratory system (tuberculosis excepted).	2423	267	602	204	222	179	134	87	52	84	69	139	102
20	Injury, accidental (cancer excepted).	1075	81	65	76	73	70	64	236	338	210	156	110	23
21	Diarrhea and enteritis (under 2 years).	1003	105	76	74	70	64	64	236	338	210	156	110	23
22	Appendicitis and typhlitis.	347	33	20	21	37	25	27	37	28	20	24	25	32
23	Hernia, intestinal obstruction.	230	28	33	33	28	14	17	21	28	24	22	21	21
24	Other diseases of the digestive tract.	338	35	35	32	29	30	29	33	31	30	33	31	33
25	Acute nephritis and Bright's disease.	3536	350	830	260	296	225	225	225	225	250	264	283	284
26	Noncancerous tumors and other diseases of the female genital organs.	137	12	12	13	10	15	10	8	6	6	13	15	11
27	Puerperal septicaemia (puerperal fever, post-tonsillar, puerperal accidents of pregnancy and labor).	171	14	6	17	20	15	13	10	19	5	0	0	10
28	Other puerperal accidents of pregnancy and labor.	201	28	41	24	21	21	21	21	19	19	19	19	19
29	Other diseases of the genital tract.	2203	101	230	163	178	100	135	64	100	103	134	14	27
30	Congenital debility and malformations.	2280	290	300	190	200	200	177	14	10	10	21	19	19
31	Senility.	340	31	21	27	32	25	40	30	30	30	34	25	25
32	Suicide.	1084	107	158	107	186	200	212	242	168	188	188	106	106
33	Violent deaths (suicide excepted).	5714	438	628	438	628	438	628	438	628	438	628	438	628
34	Unknown or ill-defined diseases.	72	3	8	10	6	13	6	2	4	5	5	4	4
Total.		40830	4151	5840	3890	3464	3321	2785	2792	2891	2690	2825	2907	3298

TABLE 10.—DEATHS UNDER ONE YEAR OF AGE IN NEW JERSEY BY MONTHS AND CAUSES OF DEATH, 1920.

Abridged Internal List No.	CAUSE OF DEATH.	MONTH OF DEATH.												
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	
1	Typhoid fever.	70	8	7	16	7	26	10	4	3	3	3	3	4
2	Typhus fever.	10	1	1	1	1	1	1	1	1	1	1	1	1
3	Malaria.	205	10	24	22	15	15	7	18	10	24	12	14	19
4	Smallpox.	40	4	4	9	5	8	1	2	1	3	3	3	3
5	Measles.	81	15	45	13	5	1	1	2	1	1	1	2	5
6	Whooping cough.	1	1	1	1	1	1	1	1	1	1	1	1	1
7	Diphtheria and group.	41	5	6	5	6	3	1	2	3	4	1	3	2
8	Scarlet fever.	4	4	1	6	6	4	5	3	2	1	3	4	3
9	Other epidemic diseases.	25	25	4	4	3	2	1	2	1	2	2	2	2
10	Tuberculous meningitis.	32	1	2	7	3	3	2	1	1	3	2	1	1
11	Other forms of tuberculosis.	10	1	1	1	1	1	1	1	1	1	1	1	1
12	Simple meningitis.	60	5	9	6	4	4	9	6	5	6	2	4	2
13	Cerebral hemorrhage and softening.	20	1	3	5	2	2	4	2	4	2	1	1	1
14	Organic diseases of the heart.	231	32	42	38	27	19	13	7	6	5	6	12	24
15	Acute bronchitis.	292	37	65	44	26	26	12	15	7	6	12	10	31
16	Pneumonia.	816	90	167	117	85	66	38	32	14	40	41	61	75
17	Other diseases of the respiratory system (tuberculosis excepted).	132	6	7	7	5	1	6	16	6	5	3	2	2
18	Diseases of the stomach (cancer excepted).	136	7	7	7	7	6	4	16	280	183	130	91	90
19	Appendicitis and typhlitis.	41	5	6	5	6	3	1	2	3	4	1	3	2
20	Hernia, intestinal obstruction.	1	1	1	1	1	1	1	1	1	1	1	1	1
21	Cirrhosis of the liver.	28	2	3	5	2	4	3	1	2	1	3	2	1
22	Necrotic hepatitis and Bright's disease.	1	1	1	1	1	1	1	1	1	1	1	1	1
23	Other diseases of the liver.	1	1	1	1	1	1	1	1	1	1	1	1	1
24	Female genital organs.	1	1	1	1	1	1	1	1	1	1	1	1	1
25	Puerperal septicaemia (puerperal fever, post-tonsillar).	2245	185	256	192	177	197	155	162	166	169	193	181	178
26	Other puerperal accidents of pregnancy and labor.	62	5	6	4	4	6	6	6	7	2	5	5	7
27	Senility.	969	97	79	98	90	86	65	39	64	79	72	67	66
28	Suicide.	27	2	3	4	4	4	1	1	1	1	1	3	2
29	Violent deaths (suicide excepted).	8672	577	754	670	542	535	399	323	628	652	698	608	477
30	Unknown or ill-defined diseases.													
Total.		8672	577	754	670	542	535	399	323	628	652	698	608	477

TABLE 11.—DEATHS IN NEW JERSEY ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATHS BY SUBDIVISION OF DAYS, WEEKS AND MONTHS OF THE FIRST YEAR OF LIFE (STILL-BIRTHS EXCLUDED), 1920.

Abridged International List Number.	CAUSE OF DEATH.	AGE, UNDER 1 YEAR, IN COMPLETED DAYS, WEEKS AND MONTHS.			DAYS.			WEEKS.			MONTHS.									
		Under 1 year.	Under 1.	One.	Two.	Three.	Under 1.	One.	Two.	Three.	Under 1.	One.	Two.	Three.						
															3 to 6.	7 to 14.	15 to 28.	29 to 42.	43 to 56.	57 to 70.
1	Typhoid fever.	70	1	1	1	1	1	1	1	1	1	1	1	1						
2	Typhus fever.	205	1	1	1	1	1	1	1	1	1	1	1	1						
3	Malaria.	41	1	1	1	1	1	1	1	1	1	1	1	1						
4	Smallpox.	91	1	1	1	1	1	1	1	1	1	1	1	1						
5	Scarlet fever.	205	1	1	1	1	1	1	1	1	1	1	1	1						
6	Whooping cough.	41	1	1	1	1	1	1	1	1	1	1	1	1						
7	Diphtheria and croup.	91	1	1	1	1	1	1	1	1	1	1	1	1						
8	Infantia.	25	1	1	1	1	1	1	1	1	1	1	1	1						
9	Cholera.	32	1	1	1	1	1	1	1	1	1	1	1	1						
10	Other epidemic diseases.	10	1	1	1	1	1	1	1	1	1	1	1	1						
11	Tuberculosis of the lungs.	25	1	1	1	1	1	1	1	1	1	1	1	1						
12	Tuberculous meningitis.	32	1	1	1	1	1	1	1	1	1	1	1	1						
13	Other forms of tuberculosis.	10	1	1	1	1	1	1	1	1	1	1	1	1						
14	Other forms of tuberculous meningitis.	10	1	1	1	1	1	1	1	1	1	1	1	1						
15	Other forms of tuberculous meningitis.	10	1	1	1	1	1	1	1	1	1	1	1	1						
16	Simple meningitis, malignant tumors.	6	1	1	1	1	1	1	1	1	1	1	1	1						
17	Cerebral hemorrhage and softening.	20	1	1	1	1	1	1	1	1	1	1	1	1						
18	Organic diseases of the heart.	201	1	1	1	1	1	1	1	1	1	1	1	1						
19	Acute bronchitis.	23	1	1	1	1	1	1	1	1	1	1	1	1						
20	Chronic bronchitis.	23	1	1	1	1	1	1	1	1	1	1	1	1						
21	Pneumonia.	23	1	1	1	1	1	1	1	1	1	1	1	1						
22	Other diseases of the respiratory system (tuberculosis excepted).	816	1	1	1	1	1	1	1	1	1	1	1	1						
23	Diarrhea and enteritis (cancer excepted).	1357	1	1	1	1	1	1	1	1	1	1	1	1						
24	Disorders of the stomach (cancer excepted).	1357	1	1	1	1	1	1	1	1	1	1	1	1						
25	Diarrhea and enteritis (under 2 years).	1357	1	1	1	1	1	1	1	1	1	1	1	1						
26	Other diseases of the digestive tract.	1357	1	1	1	1	1	1	1	1	1	1	1	1						
27	Other diseases of the digestive tract.	1357	1	1	1	1	1	1	1	1	1	1	1	1						
28	Other diseases of the digestive tract.	1357	1	1	1	1	1	1	1	1	1	1	1	1						
29	Other diseases of the digestive tract.	1357	1	1	1	1	1	1	1	1	1	1	1	1						
30	Other diseases of the digestive tract.	1357	1	1	1	1	1	1	1	1	1	1	1	1						
31	Other diseases of the digestive tract.	1357	1	1	1	1	1	1	1	1	1	1	1	1						
32	Other diseases of the digestive tract.	1357	1	1	1	1	1	1	1	1	1	1	1	1						
33	Other diseases of the digestive tract.	1357	1	1	1	1	1	1	1	1	1	1	1	1						
34	Other diseases of the digestive tract.	1357	1	1	1	1	1	1	1	1	1	1	1	1						
35	Other diseases of the digestive tract.	1357	1	1	1	1	1	1	1	1	1	1	1	1						
36	Other diseases of the digestive tract.	1357	1	1	1	1	1	1	1	1	1	1	1	1						
37	Other diseases of the digestive tract.	1357	1	1	1	1	1	1	1	1	1	1	1	1						
38	Other diseases of the digestive tract.	1357	1	1	1	1	1	1	1	1	1	1	1	1						
	Total.	8072	902	201	281	422	1090	406	313	226	2961	652	448	1113						

TABLE 12.—BIRTHS, MARRIAGES AND DEATHS UNDER ONE YEAR OF AGE BY COUNTIES, CITIES, BOROUGHS AND TOWNSHIPS—1920.

NAME OF PLACE.	ATLANTIC COUNTY.			
	Births.	Marriages.	Deaths.	Deaths under one year.
Abscon City.	19	4	14	2
Atlantic City.	963	681	72	84
Buena Vista Township.	90	..	40	9
E. Atlantic City.	..	..	..	..
Egg Harbor City.	75	43	35	3
Egg Harbor Township.	39	4	29	5
Folsom Borough.	46	4	1	2
Galloway Township.	46	4	21	4
Hamilton Township.	58	18	21	6
Hammonton Town.	197	70	84	15
Linwood Borough.	9	5	5	..
Longport Borough.	1	5	..	..
Margate City.	5	..	6	..
Mullica Township.	25	2	8	1
Northfield City.	30	8	16	2
Pleasantville City.	111	69	76	9
Pt. Republic City.	6	4	1	..
Somers Point City.	19	15	15	4
Ventnor City.	22	13	34	1
Weymouth Township.	21	2	21	3
Total.	1,730	974	1,203	149

NAME OF PLACE.	BERGEN COUNTY.			
	Births.	Marriages.	Deaths.	Deaths under one year.
Allendale Borough.	28	8	15	2
Alpine Borough.	10	3	7	1
Bergenfield Borough.	85	35	37	10
Bogota Borough.	69	33	37	2
Carlstadt Borough.	93	45	48	..
Cliffside Park Borough.	162	38	54	13
Closter Borough.	34	12	20	2
Cresskill Borough.	17	1	14	1
Delford Borough.	33	11	22	2
Demarest Borough.	8	5	6	1
Dumont Borough.	68	30	21	2
East Paterson Borough.	66	22	17	5
East Rutherford Borough.	133	54	42	4
Edgewater Borough.	77	29	38	7
Emerson Borough.	39	3	45	1
Englewood City.	230	150	146	33
Englewood Cliffs Borough.	9	4	7	..
Fairview Borough.	144	56	54	13
Fort Lee Borough.	131	46	79	9
Franklin Township.	14	3	32	..
Garfield Borough.	655	189	210	69
Glen Rock Borough.	31	15	20	1
Hackensack Town.	394	221	223	29
Harrington Park Borough.	8	5	3	..
Hasbrouck Heights Borough.	42	22	3	4
Haworth Borough.	11	6	8	1
Hillsdale Township.	43	12	23	2
Hobokus Borough.	14	8	12	1
Hobokus Township.	65	13	32	10
Leonia Borough.	49	15	32	1
Little Ferry Borough.	68	18	21	4
Lodi Borough.	277	110	78	24
Lodi Township.	20	..	4	1
Lyndhurst Township.	262	70	100	26
Maywood Borough.	32	20	18	3
Midland Township.	39	7	42	3
Midland Park Borough.	61	17	33	6
Montrala Borough.	12	3	6	..
Moonachie Borough.	26	10	11	1
North Arlington Borough.	55	2	28	8
Northvale Borough.	12	1	12	1
Norwood Borough.	17	4	6	1
Oakland Borough.	11	4	4	..
Old Tappan Borough.	6	1	4	..
Palisade Township.	39	6	18	3
Park Ridge Borough.	17	..	15	..
Palisade Park Borough.	67	34	28	6

BERGEN COUNTY—Continued.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Park Ridge Borough,	34	26	22	2
Ramsey Borough,	27	15	24	1
Ridgefield Borough,	21	5	21	4
Ridgefield Park Borough,	140	61	80	10
Ridgewood Village,	114	55	105	7
Riverside Borough,	20	6	22	4
Rivervale Township,	10	3	9	3
Rutherford Borough,	141	68	107	12
Saddle River Borough,	6	2	8	..
Saddle River Township,	63	10	29	3
Teaneck Township,	80	16	29	1
Tenafly Borough,	32	30	38	4
Teterboro Borough,	1	..	..	..
Upper Saddle River Borough, .....	..	..	2	..
Waldwick Borough,	24	12	16	2
Wallington Borough,	216	10	52	17
Washington Township,	2	..	..	..
Westwood Borough,	51	25	38	3
Woodcliff Lake Borough,	17	1	9	..
Woodridge Borough,	29	4	7	1
Total,	4,828	1,770	2,337	380

BURLINGTON COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Bass River Township,	15	8	8	1
Beverly City,	64	29	54	10
Beverly Township,	40	16	33	7
Bordentown City,	91	62	62	8
Bordentown Township,	9	1	6	..
Burlington City,	238	108	125	15
Burlington Township,	37	..	23	3
Chester Township,	154	67	100	15
Chesterfield Township,	26	10	8	..
Cinnaminson Township,	32	5	17	4
Delran Township,	44	2	15	2
Easthampton Township,	10	3	5	1
Evesham Township,	29	4	18	2
Fieldsboro Borough,	13	3	8	1
Florence Township,	208	39	83	20
Lumberton Township,	33	6	16	2
Mansfield Township,	22	5	25	3
Medford Township,	45	20	38	4
Mount Laurel Township,	54	7	27	5
New Hanover Township,	54	20	32	1
Northampton Township,	113	68	102	13
North Hanover Township,	11	1	10	1
Palmyra Township,	74	19	53	7
Pemberton Borough,	11	14	13	1
Pemberton Township,	24	8	24	2
Riverside Township,	182	78	78	23
Riverton Borough,	45	23	27	1
Shamong Township,	9	1	6	1
Southampton Township,	31	10	32	3
Springfield Township,	19	2	7	1
Tabernacle Township,	11	4	2	1
Washington Township,	6	2	8	2
Westhampton Township,	9	3	4	..
Willingboro Township,	9	2	4	1
Woodland Township,	4	2	4	3
Wrightstown Borough,	11	7	7	2
Total,	1,779	649	1,062	171

CAMDEN COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Audubon Borough,	96	20	56	8
Barrington Borough,	37	3	15	3
Berlin Township,	60	53	30	5
Camden City,	3,274	1,202	1,769	353
Centre Township,	155	24	68	18
Chesilhurst Borough,	7	3	7	2
Clementon Township,	92	19	47	6
Collingswood Borough,	138	90	98	4
Delaware Township,	30	2	24	3
Gloucester City,	241	104	130	48
Gloucester Township,	70	22	46	8
Haddonfield Borough,	98	38	91	4
Haddon Heights Borough,	27	25	47	3
Haddon Township,	30	7	25	6
Laurel Springs Borough,	20	12	11	3
Magnolia Borough,	30	6	28	4
Merchantville Borough,	49	49	51	4
Oaklyn Borough,	16	7	12	..
Pensauken Township,	113	19	70	16
Yorbes Township,	33	8	15	3
Waterford Township,	40	6	27	2
Winslow Township,	96	5	53	8
Wood Lynn Borough,	32	15	12	..
Total,	4,831	1,739	2,672	484

CAPE MAY COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Avalon Borough,	1	2	5	..
Cape May City,	42	46	31	5
Cape May Point Borough, .....	..	2	2	..
Dennis Township,	27	6	23	6
Lower Township,	25	10	18	8
Middle Township,	51	14	45	6
North Wildwood City,	56	5	11	2
Ocean City,	53	27	33	1
Sea Isle City,	19	6	10	1
South Cape May Borough,	3	4	4	..
Stone Harbor Borough,	3	4	4	..
Upper Township,	28	15	12	..
West Cape May Borough,	17	3	13	3
West Wildwood Borough, .....	..	..	..	..
Wildwood City,	65	45	35	6
Wildwood Crest Borough,	3	1	5	1
Woodbine Borough,	19	4	10	1
Total,	469	190	233	31

CUMBERLAND COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Bridgeton City,	307	162	247	84
Commercial Township,	41	12	41	3
Deerfield Township,	58	6	38	5
Downe Township,	33	22	24	2
Fairfield Township,	13	14	21	..
Greenwich Township,	14	4	4	3
Hopewell Township,	32	9	35	3
Landis Township,	126	7	85	8
Lawrence Township,	42	6	27	3
Maurice River Township,	37	12	39	4
Millville City,	317	151	200	24
Stow Creek Township,	18	6	14	2
Vineland Borough,	203	147	145	20
Total,	1,246	538	941	111

ESSEX COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Belleville Town,	427	134	163	30
Bloomfield Town,	485	187	241	36
Caldwell Borough,	90	27	64	4
Caldwell Township,	12	1	4	1
Cedar Grove Township,	19	3	22	2
East Orange City,	572	335	591	38
Essex Falls Borough,	3	1	5	..
Glen Ridge Borough,	78	23	49	3
Irvington Town,	489	179	280	20
Livingston Township,	18	12	13	1
Millburn Township,	105	33	54	8
Montclair Town,	570	238	840	33
Newark City,	11,138	4,983	5,613	980
North Caldwell Borough,	8	3	10	..
Nutley Town,	207	63	108	21
Orange City,	828	389	453	58
Roseland Borough,	12	3	7	..
South Orange Village,	143	79	88	4
South Orange Township,	111	56	67	8
Verona Borough,	49	32	32	4
West Caldwell Borough,	15	1	14	1
West Orange Town,	357	82	171	21
Total,	16,086	6,884	8,888	1,287

GLOUCESTER COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Clayton Borough,	40	16	4	3
Deptford Township,	46	1	32	9
East Greenwich Township,	82	9	24	4
Elk Township,	11	2	9	1
Franklin Township,	72	10	51	6
Glassboro Township,	43	30	43	4
Greenwich Township,	37	7	8	5
Harrison Township,	33	6	22	1
Logan Township,	24	9	13	..
Mantua Township,	38	4	29	3
Monroe Township,	45	22	35	9
National Park Borough,	38	7	16	2
Paulsboro Borough,	165	50	79	14
Pitman Borough,	47	22	51	3
South Harrison Township,	8	1	5	..
Swedesboro Borough,	61	19	38	7
Washington Township,	29	7	13	1
Wenonah Borough,	17	6	18	1
West Deptford Township,	55	20	22	4
Westville Borough,	55	12	30	3
Woodbury City,	117	55	101	10
Woodbury Heights Borough,	13	2	11	1
Woodwich Township,	18	1	5	..
Total,	1,104	318	699	94

HUDSON COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Bayonne City,	2,556	581	819	193
East Newark Borough,	62	19	38	9
Guttenberg Town,	153	29	65	7
Harrison Town,	497	148	266	62
Hoboken City,	1,809	1,809	1,427	147
Jersey City,	7,355	3,842	4,302	745
Kearny Town,	670	199	276	49
North Bergen Township,	512	163	267	37
Secaucus Borough,	89	125	96	..
Town of Union,	380	..	321	32
Weehawken Township,	223	120	153	19
West Hoboken Town,	770	466	469	51
West New York Town,	814	541	206	50
Total,	15,690	7,803	8,181	1,408

HUNTERDON COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Alexandria Township,	16	1	15	1
Bethlehem Township,	21	1	8	2
Bloomsbury Borough,	17	7	12	2
Califon Borough,	8	10	5	..
Clinton Borough,	15	4	12	2
Clinton Township,	31	5	21	..
Delaware Township,	39	7	33	4
East Amwell Township,	17	3	12	1
Flemington Borough,	45	24	37	1
Franklin Township,	14	12	16	..
Frenchtown Borough,	1	13	32	1
Glen Gardner Borough,	13	11	8	..
Hampton Borough,	20	14	13	..
High Bridge Borough,	37	17	19	2
Holland Township,	11	2	11	3
Kingwood Township,	12	4	21	2
Lambertville City,	96	36	65	9
Lebanon Township,	26	4	16	..
Milford Borough,	15	7	9	..
Raritan Township,	24	2	25	..
Readington Township,	51	7	49	7
Stockton Borough,	11	4	5	..
Tewksbury Township,	14	6	24	..
Union Township,	29	4	16	6
West Amwell Township,	15	2	8	..
Total,	600	207	495	44

MERCER COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
East Windsor Township,	8	..	8	..
Ewing Township,	94	7	54	10
Hamilton Township,	410	60	179	33
Hightstown Borough,	37	26	41	4
Hopewell Borough,	8	22	25	2
Hopewell Township,	51	9	32	7
Lawrence Township,	77	15	60	11
Pennington Borough,	16	6	13	2
Princeton Borough,	94	77	85	3
Princeton Township,	71	1	13	3
Trenton City,	3,171	1,904	1,583	327
Washington Township,	30	3	15	..
West Windsor Township,	28	2	26	5
Total,	4,123	1,532	2,114	407

MIDDLESEX COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Cranbury Township,	28	7	26	..
Dunellen Borough,	57	19	38	4
East Brunswick Township,	45	5	15	2
Helmetta Borough,	34	10	9	6
Highland Park Borough,	111	7	44	7
Jamesburg Borough,	78	28	28	4
Madison Township,	45	5	26	6
Metuchen Borough,	88	42	44	6
Middlesex Borough,	33	4	22	2
Milwauke Township,	37	32	32	6
Monroe Township,	27	2	16	3
New Brunswick City,	958	364	488	65
North Brunswick Township,	18	1	11	1
Perth Amboy City,	1,481	435	462	180
Piscataway Township,	15	16	36	1
Plainboro Township,	15	5	5	3
Raritan Township,	83	8	38	12
Roosevelt Borough,	401	76	130	49
Sayreville Borough,	262	48	60	17
South Amboy City,	223	73	100	27
South Brunswick Township,	42	6	29	4
South River Borough,	257	57	88	28
Spotswood Borough,	6	9	8	1
Woodbridge Borough,	503	63	175	39
Total,	4,946	1,336	1,970	465

MONMOUTH COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Allenhurst Borough,	9		18	..
Allentown Borough,	12	15	16	..
Asbury Park City,	213	221	205	30
Atlantic Township,	12	7	17	3
Atlantic Highlands Borough,	30	27	28	3
Avon Borough,	7	7	15	..
Belmar Borough,	55	19	39	8
Bradley Beach Borough,	49	34	31	6
Brielle Borough,	7	..	5	..
Deal Borough,	8	4	4	..
Eatontown Borough, .....	..	..	3	..
Eatontown Township,	27	20	22	..
Englishtown Borough,	12	6	5	..
Fair Haven Borough,	24	5	13	..
Farmingdale Borough,	15	8	15	..
Freehold Borough,	114	48	81	9
Freehold Township,	19	2	1	..
Highlands Borough,	40	22	25	2
Holmdel Township,	19	4	11	1
Howell Township,	35	8	24	3
Keansburg Borough,	37	16	21	6
Keport Borough,	93	59	44	4
Long Branch City,	344	145	180	28
Manalapan Township,	19	5	18	1
Mansquan Borough,	35	19	29	..
Marlboro Township,	12	18	16	1
Matawan Borough,	32	21	32	6
Matawan Township,	27	..	15	2
Middletown Township,	99	23	94	11
Millstone Township,	19	1	12	..
Monmouth Beach Borough,	2	2	8	..
Neptune Township,	154	55	86	12
Neptune City Borough,	9	..	5	..
Ocean Grove Borough,	24	29	54	1
Ocean Township,	24	8	33	2
Oceanport Borough,	5	5	5	..
Raritan Township,	33	2	11	..
Red Bank Borough,	179	126	132	20
Rumson Borough,	24	10	27	3
Sea Bright Borough,	12	10	13	1
Sea Girt Borough,	2	4	4	..
Surebury Township,	9	..	31	1
Spring Lake Borough,	30	15	19	1
Upper Freehold Township,	45	5	94	6
Wall Township,	55	31	33	3
West Long Branch Borough,	1	..	1	..
Total,	2,674	1,077	1,530	178

MORRIS COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Boonton Town,	114	60	85	6
Boonton Township,	4	1	2	..
Butler Borough,	82	27	82	7
Chatham Borough,	45	18	38	4
Chatham Township,	13	1	6	2
Chester Township,	27	4	20	1
Denville Township,	22	8	17	2
Dover Town,	246	104	113	26
Florham Park Borough,	8	1	13	..
Hanover Township,	103	28	95	11
Jefferson Township,	4	22	14	4
Madison Borough,	122	56	64	7
Mendham Borough,	19	5	15	1
Mendham Township,	8	1	11	1
Montville Township,	42	8	30	2
Morristown Town,	255	145	184	18
Morris Township,	42	2	38	..
Mount Arlington Borough,	6	..	7	..
Mount Olive Township,	18	6	6	..
Netcong Borough,	37	17	18	2
Passaic Township,	51	13	41	1
Pegannock Township,	46	16	25	3
Randolph Township,	61	7	31	3
Rockaway Borough,	55	44	46	7

MORRIS COUNTY—Continued.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Rockaway Township,	54	4	45	7
Rocky Township,	70	16	2	..
Washington Township,	19	6	28	4
Wharton Borough,	74	31	52	10
Total,	1,685	826	1,119	136

OCEAN COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Barnegat City Borough,	8	2	4	1
Bay Head Borough,	4	3	3	..
Beach Haven Borough,	7	8	3	1
Beachwood Borough, .....	..	..	..	..
Berkeley Township,	11	1	12	2
Brick Township,	15	9	17	3
Dover Township,	35	27	38	3
Eagleswood Township,	4	5	4	..
Harvey Cedars Borough, .....	..	..	..	..
Island Heights Borough,	4	2	5	..
Jackson Township,	25	5	20	6
Lacey Township, .....	..	..	2	..
Lakewood Township,	104	100	83	..
Lavellette Borough, .....	..	..	3	..
Little Egg Harbor Township,	6	..	4	..
Long Beach Township,	1	..	3	2
Manchester Township,	29	24	14	2
Mantoloking Borough, .....	..	..	..	..
Ocean Township,	6	1	4	1
Ocean Gate Borough, .....	..	..	..	..
Plumstead Township,	28	19	15	2
Point Pleasant Borough,	8	9	19	..
Point Pleasant Beach Borough,	18	14	19	2
Sea Side Heights Borough,	2	..	1	..
Seaside Park Borough,	5	2	..	..
Surf City Borough, .....	..	..	..	..
Staford Township,	5	4	10	..
Tuckerton Borough,	16	8	19	..
Union Township,	10	2	7	..
Total,	349	263	299	33

PASSAIC COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Bloomingsdale Borough,	75	23	24	..
Clifton City,	682	163	235	46
Haledon Borough,	49	34	31	5
Hawthorne Borough,	93	51	57	9
Little Falls Township,	76	25	40	7
North Haledon Borough,	14	3	12	3
Passaic City,	1,972	925	753	221
Paterson City,	3,036	1,673	1,668	233
Pompton Lakes Borough,	45	25	27	3
Prospect Park Borough,	96	38	37	5
Ringwood Borough,	35	6	15	3
Totowa Borough,	41	4	11	4
Wanaque Borough,	82	23	33	4
Wayne Township,	45	14	31	5
West Milford Township,	40	16	18	4
West Paterson Borough,	41	12	15	2
Total,	6,402	3,046	3,007	558

SALEM COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Alloway Township,	24	5	10	1
Elmer Borough,	26	12	21	3
Elsinboro Township,	5	..	14	..
Lower Alloways Creek Township,	20	4	10	..
Lower Penns Neck Township,	42	30	5	5
Mannington Township,	22	9	13	4
Oldmans Township,	20	7	16	2
Penns Grove Borough,	127	51	74	8
Pilesgrove Township,	35	5	25	3
Pittsgrove Township,	21	6	20	5
Quinton Township,	30	10	13	3
Salem City,	165	50	136	17
Upper Penns Neck Township,	217	18	79	34
Upper Pittsgrove Township,	23	10	17	1
Woodstown Borough,	32	28	43	1
Total,	814	254	528	90

SOMERSET COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Bedminster Township,	23	10	15	1
Bernards Township,	104	40	40	9
Bound Brook Borough,	197	65	60	12
Branchburg Township,	12	6	19	1
Bridgewater Township,	31	4	23	4
Franklin Township,	43	8	29	8
Hillsborough Township,	108	28	46	8
Millstone Borough,	3	1	3	..
Montgomery Township,	15	4	22	1
North Plainfield Borough,	136	64	98	8
North Plainfield Township,	7	2	12	2
Peapack-Gladstone Borough,	18	10	14	..
Raritan Borough,	113	39	44	7
Rocky Hill Borough,	6	2	6	..
Somerville Borough,	167	75	91	11
South Bound Brook Borough,	33	7	21	4
Warren Township,	20	6	9	..
Total,	1,088	371	557	74

SUSSEX COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Andover Borough,	8	4	10	3
Andover Township,	11	1	11	1
Branchville Borough,	10	2	13	1
Bryan Township,	16	..	3	..
Frankford Township,	17	2	19	2
Franklin Borough,	134	21	54	10
Fredon Township,	8	..	3	..
Green Township,	9	3	6	..
Hamburg Borough,	22	7	..	..
Hampton Township,	15	8	14	1
Hardyston Township,	37	9	14	3
Hopatecong Borough,	6	1	6	1
Lafayette Township,	21	2	10	1
Montague Township,	5	5	5	1
Newton Township,	38	56	39	8
Ogdensburg Borough,	31	2	10	6
Sandryston Township,	14	..	6	1
Sparta Township,	21	4	..	..
Stanhope Borough,	18	9	12	2
Stillwater Township,	12	6	13	3
Sussex Borough,	36	21	18	2
Vernon Township,	27	9	10	1
Walpack Township,	11	1	4	1
Wantage Township,	31	4	29	5
Total,	610	175	375	56

UNION COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Clark Township,	18	3	8	..
Cranford Township,	136	55	67	9
Elizabeth City,	2,703	935	1,154	215
Fanwood Borough,	12	2	14	1
Garwood Borough,	56	1	27	4
Hillside Township,	109	30	54	9
Kentworth Borough,	2	1	12	2
Linden Borough,	43	24	36	8
Linden Township,	217	6	73	30
Mountainside Borough,	10	2	6	1
New Providence Borough,	23	8	14	1
New Providence Township,	16	2	7	..
Plainfield City,	708	252	377	52
Rahway City,	229	103	163	30
Roselle Borough,	140	44	65	12
Roselle Park Borough,	151	29	53	13
Scotch Plains Township,	44	27	27	3
Springfield Township,	32	8	25	1
Summit City,	213	71	114	14
Union Township,	97	24	32	4
Westfield Town,	205	87	123	16
Total,	5,225	1,714	2,461	425

WARREN COUNTY.

NAME OF PLACE.	Births.	Marriages.	Deaths.	Deaths under one year.
Alpha Borough,	63	17	13	8
Allamuchy Township,	10	1	..	..
Belvidere Town,	31	12	32	3
Blairstown Township,	12	11	26	3
Franklin Township,	40	4	16	4
Fralinghuyen Township,	13	1	15	3
Greenwich Township,	31	19	21	1
Hackettstown Town,	65	26	53	5
Hardwick Township,	3	..	5	..
Harmony Township,	39	4	16	4
Hope Township,	9	4	12	1
Independence Township,	12	5	9	..
Knowlton Township,	20	6	21	3
Lopatcong Township,	19	..	1	1
Mansfield Township,	12	11	20	3
Oxford Township,	45	15	39	7
Pahaquarry Township,	1	..	4	..
Phillipsburg Town,	383	163	201	34
Pohatecong Township,	28	4	14	2
Washington Borough,	63	36	50	2
Washington Township,	6	1	14	1
White Township,	16	7	14	2
Total,	912	347	592	83
State Total,	76,431	31,327	40,820	6,672

TABLE 13.—DEATHS IN THE COUNTIES OF NEW JERSEY AND SELECTED MUNICIPALITIES AND FOLLOW):

Table with columns for various counties (Atlantic, Bergen, Essex, Gloucester, Hudson, etc.) and rows for different diseases like Typhoid fever, Cholera, Diphtheria, etc.

CAUSE OF DEATH, DETAILED INTERNATIONAL LIST (COUNTY FIGURES INCLUDE CITIES WHICH 1920.)

Table with columns for various municipalities (Camden City, Gloucester City, Cape May County, etc.) and rows for different diseases like Typhoid fever, Cholera, Diphtheria, etc.

TABLE 13.—DEATHS IN THE COUNTIES OF NEW JERSEY AND SELECTED MUNICIPALITIES AND FOLLOW: 1920

Table with 14 columns: State Total, Atlantic County, Atlantic City, Hantsminton, Bergen County, Englewood, Garfield, Hickenack, Ridgewood, Rutherford, Burlington County, Burlington City, Camden County. Rows list various diseases such as Anemia, chronic; Other general diseases; Alcoholism; etc.

CAUSE OF DEATH, DETAILED INTERNATIONAL LIST (COUNTY FIGURES INCLUDE CITIES WHICH —Continued.

Table with 16 columns: Camden City, Gloucester City, Cape May County, Cumberland County, Bridgeton, Millville, Vinland, Essex County, Bloomfield, East Orange, Irvington, Montclair, Newark, Nutley, Orange, South Orange, West Orange, Gloucester County, Hudson County, Bayonne, Guttenberg, Harrison, Hoboken, Jersey City. Rows list various diseases such as Anemia, chronic; Other general diseases; Alcoholism; etc.

TABLE 13.—DEATHS IN THE COUNTIES OF NEW JERSEY AND SELECTED MUNICIPALITIES AND FOLLOW): 1920

	State Total.	Atlantic County.	Atlantic City.	Hammonton.	Bergen County.	Englewood.	Garfield.	Hackensack.	Ridgewood.	Rutherford.	Burlington County.	Burlington City.	Camden County.
Suicide by poison.	155	37	1	1	1	1	1	1	1	1	1	1	1
Suicide by asphyxia.	156	100	6	5	1	1	1	1	1	1	1	1	1
Suicide by hanging or strangulation.	157	55	1	1	7	1	1	1	1	1	1	1	1
Suicide by drowning.	158	22	1	1	1	1	1	1	1	1	1	1	1
Suicide by firearms.	159	91	5	2	4	1	1	1	1	1	7	1	9
Suicide by cutting or piercing instruments.	160	23	1	1	3	1	1	1	1	1	1	1	1
Suicide by jumping from a high place.	161	14	1	1	1	1	1	1	1	1	1	1	1
Suicide by crushing.	162	3	1	1	1	1	1	1	1	1	1	1	1
Other suicides.	163	4	1	1	1	1	1	1	1	1	1	1	1
Poisoning by food.	164	15	1	1	1	1	1	1	1	1	1	1	1
Other acute poisonings.	165	65	1	1	3	1	1	1	1	1	4	1	6
Conflagration.	166	39	2	1	1	1	1	1	1	1	6	1	4
Burns (conflagration excepted).	167	249	8	5	13	3	1	1	1	1	7	3	16
Absorption of deleterious gases (conflagration excepted).	168	169	6	5	10	2	1	1	1	1	1	1	2
Accidental drowning.	169	239	4	3	15	1	2	1	1	1	15	2	12
Traumatism by firearms.	170	36	2	1	2	1	1	1	1	1	2	1	6
Traumatism by cutting or piercing instruments.	171	2	1	1	1	1	1	1	1	1	1	1	2
Traumatism by fall.	172	310	13	9	13	2	1	1	1	1	5	1	16
Traumatism in mines and quarries.	173	9	1	1	1	1	1	1	1	1	1	1	1
Traumatism by machines.	174	49	5	2	2	1	1	1	1	1	2	1	3
Traumatism by other crushing (vehicles, railroads, landfills, etc.).	175	791	20	9	6	42	3	5	7	2	18	1	71
Injuries by animals.	176	6	1	1	1	1	1	1	1	1	1	1	1
Starvation.	177	1	1	1	1	1	1	1	1	1	1	1	1
Excessive cold.	178	5	1	1	1	1	1	1	1	1	1	1	1
Effects of heat.	179	6	1	1	1	1	1	1	1	1	1	1	1
Lightning.	180	11	1	1	1	1	1	1	1	1	2	1	2
Electricity (lightning excepted).	181	28	2	1	2	1	1	1	1	1	1	1	3
Homicide by firearms.	182	74	2	1	8	1	1	1	1	1	1	1	6
Homicide by cutting or piercing instruments.	183	15	1	1	1	1	1	1	1	1	1	1	2
Homicide by other means.	184	37	1	1	4	1	1	1	1	1	2	1	4
Fractures (cause not specified).	185	9	1	1	1	1	1	1	1	1	1	1	1
Other external violence.	186	98	4	1	7	1	1	1	1	1	3	1	5
Ill-defined organic disease.	187	1	1	1	1	1	1	1	1	1	1	1	1
Sudden death.	188	6	1	1	1	1	1	1	1	1	1	1	1
Cause of death not specified or ill-defined.	189	65	7	1	6	1	1	1	1	1	1	1	1
Total.	40820	1203	772	84	2337	146	210	228	105	107	1092	125	2672

CAUSE OF DEATH, DETAILED INTERNATIONAL LIST (COUNTY FIGURES INCLUDE CITIES WHICH —Continued.

Camden City.	Gloucester City.	Cape May County.	Cumberland County.	Bridgeton.	Millville.	Vinland.	Essex County.	Bloomfield.	East Orange.	Irvington.	Montclair.	Newark.	Nutley.	Orange.	South Orange.	West Orange.	Gloucester County.	Hudson County.	Bayonne.	Guttenberg.	Harrison.	Hoboken.	Jersey City.	
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
7	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	1	5	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	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
8	2	4	9	2	3	1	60	3	6	1	2	36	1	3	2	5	66	4	1	1	1	9	39	
1	1	1	1	1	1	1	13	1	1	1	1	11	1	1	1	1	12	4	1	1	1	1	6	
49	3	5	10	1	3	154	9	10	5	1	114	2	9	1	11	156	22	1	14	13	75	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	
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	1	1	1	1	1	1	13	1	1	1	1	10	1	1	1	1	19	2	1	1	4	10		
1	1	1	1	1	1	1	3	1	1	1	1	3	1	1	1	1	2	1	1	1	1	1	1	
1	1	1	1	1	1	1	10	1	2	1	5	1	1	1	1	1	3	1	1	1	1	1	1	
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	
1	1	1	1	1	1	1	3	1	1	1	1	11	1	1	1	1	20	3	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	4	1	1	1	1	3	1	1	1	1	12	1	1	1	1	1	9	
1709	130	233	941	247	200	145	8388	241	591	290	340	5613	106	453	88	171	699	8181	819	55	256	943	4302	

TABLE 14.—DEATHS BY OCCUPATIONS, AGE GROUPS AND

Age Group	Tuberculosis of lungs	Cancer and other malignant tumors	Diseases of the nervous system and the organs of sense	Diseases of the circulatory system	PROFESSIONAL SERVICE																
					Architects	Chemists, assayers, etc.	Civil and mining engineers and surveyors	Clergymen	Dentists	Designers, draftsmen and inventors	Lawyers, Judges and Justices	Musicians and teachers of music	Photographers	Physicians and surgeons	Teachers						
10 to 19	1																				
20 to 29	1																				
30 to 39	1																				
40 to 49	1																				
50 to 59	1																				
60 to 69																					
70 to 79																					
80 to 89																					
90 and over																					
Totals	5	1	1	2	8	8	2	11	8	3	9	14	3	1	3	3	1	3	3	1	9

CERTAIN SELECTED CAUSES, NEW JERSEY, 1920—Continued.

Age Group	Other professional and semi-professional pursuits	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	Clerks (except in stores)	Other clerical pursuits																						
10 to 19	1																																							
20 to 29	11																																							
30 to 39	3																																							
40 to 49	1																																							
50 to 59	3																																							
60 to 69	1																																							
70 to 79	1																																							
80 to 89	1																																							
90 and over																																								
Totals	25	10	3	2	806	10	8	9	5	50	21	29	4	26	94	47	2	3	3	4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5		

TABLE 14.—DEATHS BY OCCUPATIONS, AGE GROUPS AND

	AGRICULTURE, FORESTRY AND ANIMAL HUSBANDRY.	Farmers.	Farm laborers.	Fishermen and oystermen.	Gardeners, florists, fruit growers and nurserymen.	Garden, greenhouse, orchard and nursery laborers.	Other agricultural and animal husbandry pursuits.	EXTRACTION OF MINERALS.	Foremen, overseers and inspectors.	Miners.	Quarry operatives.	MANUFACTURING AND MECHANICAL INDUSTRIES.
Nonvenereal diseases of the primary and secondary character and anæmia.												
10 to 19,	2	1	1		1							
20 to 29,	1		1									
30 to 39,	1											
40 to 49,	1		1									
50 to 59,	9	1	1	1	1							
60 to 69,	9	1										
70 to 79,	26	1										
80 to 89,	15	1										
90 and over,	1											
Totals,	123	14	9	15	1	1		1	3			
Diseases of the respiratory system (pneumonia and lungs excepted).												
10 to 19,	3	2										
20 to 29,	2											
30 to 39,	1											
40 to 49,	6		1									
50 to 59,	7	1	1									
60 to 69,	8	1										
70 to 79,	9	1	1	1								
80 to 89,	1											
90 and over,												
Totals,	31	2	2	5		1			4			
Diseases of the circulatory system.												
10 to 19,	1	1	1									
20 to 29,	1	1	1									
30 to 39,	2	1										
40 to 49,	6	1	1									
50 to 59,	3	1	1									
60 to 69,	8	1										
70 to 79,	9	1	1									
80 to 89,												
90 and over,												
Totals,	35	7	4	7		1			2	1		
Pneumonia.												
10 to 19,	10	1										
20 to 29,	9											
30 to 39,	12											
40 to 49,	12		1									
50 to 59,	6		1									
60 to 69,	6											
70 to 79,	7											
80 to 89,	4											
90 and over,	4											
Totals,	81	13			8		2			3		

CERTAIN SELECTED CAUSES, NEW JERSEY, 1920—Continued.

	Apprentices to building and hand trades.	Bakers.	Blacksmiths, forgemen and hammermen.	Boilermakers.	Brick and stone masons.	Builders and building contractors.	Carpenters, cooper and cabinet makers.	Compositors, linotypers and typesetters.	Dressmakers and seamstresses (not in factory).	Dyers.	Electricians and electrical engineers.	Engineers (stationary).	Baggagers.	Filers, grinders, buffers and polishers (metal).	Firemen (except locomotive and fire department).	Furnace men, smelter men, heaters, pourers, etc.	Glassblowers.	Jewelers, watchmakers, goldsmiths and silversmiths.	Laborers (general and not specified laborers).	
10 to 19,	1	1			1		1	1										1		6
20 to 29,	1	1			1		1	1			1	3			1			1		3
30 to 39,	1	1			1		1	1			1	1			1			1		4
40 to 49,	1	3			1		1	1			1	2			1			1		13
50 to 59,	1	1			1		1	1			1	1			1			1		14
60 to 69,	3	1			2		1	1			1	1			1			1		13
70 to 79,	3	1			1		1	1			1	1			1			1		14
80 to 89,	1	1			1		1	1			1	1			1			1		13
90 and over,																				2
Totals,	4	9	3	10	7	53	5	5	2	8	16	1	5	4	1	10	168	2	15	
10 to 19,	1	6	3	6	7	23	4	1	7				2	3		1	4	76		
20 to 29,								1										1	7	
30 to 39,								1										2	9	
40 to 49,	1	1						1	1									1	13	
50 to 59,	1	1						1	1									1	23	
60 to 69,	1	1						1	1									1	18	
70 to 79,	1	1						1	1									1	7	
80 to 89,																			2	
90 and over,																				
Totals,	3	4	3	15	10	32	5	1	6	6	1	3	2	3	2	2	7	82	1	
10 to 19,	1	3	1	2	1	5	1	1	1									1	10	
20 to 29,	1	1						1										1	1	
30 to 39,	1	1	1	1	1	6	1	1	1									1	3	
40 to 49,	1	1						1	1									1	10	
50 to 59,	1	1						1	1									1	22	
60 to 69,	1	1						1	1									1	22	
70 to 79,	1	1						1	1									1	23	
80 to 89,	1	1						1	1									1	23	
90 and over,	1	1						1	1									1	9	
Totals,	4	22	2	17	13	71	18	5	4	20	1	6	1	6	1	3	12	153		

TABLE 14.—DEATHS BY OCCUPATIONS, AGE GROUPS AND

Summary of decedents from all causes.	All other diseases and causes of death.	Violent deaths (suicide excepted).	Suicide.	Occupation																
				Building and hand trades.	Chemical industries.	Clay, glass and stone industries.	Iron, steel and other metal industries.	Lumber and furniture industries.	Textile industries.	Other industries.	Mechanics, millwrights and toolmakers.	Managers, superintendents and foremen (manufacturing).	Manufacturers and officials.	Mechanics (gunsmiths, locksmiths, wheelwrights, etc.).	Millers (grain, flour, feed, etc.).					
10 to 19.	1											1								
20 to 29.	1											1								
30 to 39.	1											1								
40 to 49.	1											1								
50 to 59.	1											1								
60 to 69.	1											1								
70 to 79.	1											1								
80 to 89.	1											1								
90 and over.	1											1								
Totals.	11	2	4	7		4		11	60	22	9	7		2						3
10 to 19.	12	1	2	5		4		6	14	5	2	2		2						2
20 to 29.	14	6	2	4		1		3	23	69	23	1		19						3
30 to 39.	16	9	3	19		3		35	81	85	35	5		10						11
40 to 49.	18	4	11	15		2		21	72	43	3	2		7						11
50 to 59.	11	2	2	7		30		9	34	68	19	3		23						11
60 to 69.	3	3	3	9		1		1	19	68	26	3		15						3
70 to 79.	4	1	1	2		4		5	36	14	20	1		3						3
80 to 89.	1		1	1				10	3	12	3	1		3						1
90 and over.								2	1	1				1						
Totals.	84	24	35	111	9	24		145	416	168	125	65		10						10

CERTAIN SELECTED CAUSES, NEW JERSEY, 1920—Continued.

Summary of decedents from all causes.	Occupation																			
	Milliners and millinery dealers.	Molders, founders and castors.	Painters, glaziers, varnishers, enamelers, etc.	Paperhangers.	Pattern and model makers.	Plasterers.	Plumbers and gas and steam fitters.	Pressmen (printing).	Rockers and slaters.	Semi-skilled operatives (factory employees, industry not stated).	Chemical industries.	Cigar and tobacco factories.	Clay, glass and stone industries (excepting potteries).	Clothing industries.	Food industries.	Iron, steel and other metal industries.	Liquor and beverage industries.	Lumber and furniture industries.	Potteries.	
10 to 19.	1		1	1																
20 to 29.																				
30 to 39.		1																		
40 to 49.		2																		
50 to 59.	2																			
60 to 69.	1	1	2	4	1															
70 to 79.	1	1	2	1																
80 to 89.	1	1	2	2																
90 and over.	1																			
Totals.	1	5	22	1			18	9	2	12	8	5	1	8	1	33		1	1	
10 to 19.																				
20 to 29.		1	2				5	1		4										
30 to 39.		2	3				6	6		1										
40 to 49.		2	5				3	2		1										
50 to 59.		4	4				3	1		1										
60 to 69.	1	1	2				1	1		1										
70 to 79.	1	1	2				1	1		1										
80 to 89.	1	1	2				1	1		1										
90 and over.	1						1													
Totals.	3	9	30	2	1	2	12	7	2	22	3	9	11	15	3	22	2	1	3	
10 to 19.	1		4																	
20 to 29.	6	5	15				2			17	1	16	1	13	3	9				
30 to 39.	10	3	33				11	1		21	3	21	7	17	12	24				
40 to 49.	6	4	35				23	2		12	5	7	11	10	6	37				
50 to 59.	14	5	59				31	2		18	8	15	14	12	22	50				
60 to 69.	8	10	39				22	4		12	3	11	7	7	11	35				
70 to 79.	5	13	59				33	1		22	4	15	14	6	27	50				
80 to 89.	1	4	15				11	1		9	1	10	7	19	4	30				
90 and over.	1	1	2				2			1		4	1	1	12	2				
Totals.	26	70	277	11	13	17	122	89	12	116	25	90	50	127	27	221	14	20	59	

TABLE 14.—DEATHS BY OCCUPATIONS, AGE GROUPS AND

	Rubber industries.	Shoe factories.	Tanneries and other leather industries.	Textile industries.	Other industries.	Shoemakers and cobblers (not in factory).	Stonecutters.	Tailors and tailresses.	Thamists and coppermiths.	Upholsterers.	Other manufacturing and mechanical industries.	TRANSPORTATION.
Summary of deaths from all causes.												
10 to 19.....	8	1	27	31	5	5	2	5	3	1	12	12
20 to 29.....	19	3	48	44	8	3	2	5	3	1	32	32
30 to 39.....	13	3	10	46	42	16	2	15	4	1	36	36
40 to 49.....	9	4	19	59	50	9	29	14	9	1	39	39
50 to 59.....	17	1	17	52	38	19	5	22	11	4	28	28
60 to 69.....	9	3	19	42	50	10	21	11	4	5	19	19
70 to 79.....	7	1	9	27	24	13	2	13	4	2	7	7
80 to 89.....	2	1	4	11	1	9	2	2	1	1	7	7
90 and over.....	1	1	1	1	1	1	1	1	1	1	1	1
Totals.....	73	13	84	309	283	95	22	100	46	12	106	106
Violent deaths (suicide excepted).												
10 to 19.....	2	1	4	8	1	1	1	1	1	3	3	3
20 to 29.....	4	1	12	15	8	3	1	1	1	1	4	4
30 to 39.....	1	1	3	6	3	3	1	1	1	1	4	4
40 to 49.....	1	1	3	3	3	3	1	1	1	1	4	4
50 to 59.....	1	1	1	3	3	3	1	1	1	1	2	2
60 to 69.....	1	1	1	1	1	1	1	1	1	1	2	2
70 to 79.....	1	1	1	1	1	1	1	1	1	1	2	2
80 to 89.....	1	1	1	1	1	1	1	1	1	1	2	2
90 and over.....	1	1	1	1	1	1	1	1	1	1	2	2
Totals.....	7	3	1	23	28	5	1	6	2	2	27	27
Suicide.												
10 to 19.....	1	1	1	1	1	1	1	1	1	1	1	1
20 to 29.....	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39.....	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49.....	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59.....	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69.....	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79.....	1	1	1	1	1	1	1	1	1	1	1	1
80 to 89.....	1	1	1	1	1	1	1	1	1	1	1	1
90 and over.....	1	1	1	1	1	1	1	1	1	1	1	1
Totals.....	5	2	1	4	5	2	1	1	1	1	4	4

CERTAIN SELECTED CAUSES, NEW JERSEY, 1920—Continued.

	Water.	Boatsmen, canal men, sailors and deck hands.	Longshoremen and stevedores.	Other pursuits.	Road and street.	Carriage and hack drivers, draymen, teamsters and expressmen.	Chauffeurs.	Contractors and foremen (road building).	Laborers (road building) and street cleaners.	Livery stable keepers and managers, hostlers and stable hands.	Other pursuits.	Railroad.	Baggage men and freight agents.	Blakemen.	Conductors.	Foremen, overseers and inspectors.	Laborers.	Locomotive engineers.	Locomotive firemen.
10 to 19.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20 to 29.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
80 to 89.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
90 and over.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals.....	11	3	10	26	24	3	5	2	1	33	7	10	31	7	5	7	5	5	5
10 to 19.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20 to 29.....	2	2	2	4	4	2	2	2	2	2	2	2	2	2	2	2	2	2	2
30 to 39.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
80 to 89.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
90 and over.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals.....	7	4	5	12	18	1	4	2	1	2	2	3	3	6	2	1	1	1	1
10 to 19.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20 to 29.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
80 to 89.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
90 and over.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals.....	56	32	77	243	128	7	28	80	17	21	55	49	46	85	44	1	1	1	16

TABLE 14.—DEATHS BY OCCUPATIONS, AGE GROUPS AND

	TABLE 14.—DEATHS BY OCCUPATIONS, AGE GROUPS AND											
	Motemen.	Officials and superintendents.	Switchmen, flagmen and yardmen.	Ticket and station agents.	Other parents.	Express, post, telegraph and telephone.	Express messengers and railway mail clerks.	Linemmen.	Mail carriers.	Telegraph operators.	Telephone operators.	Other pursuits.
Summary of accidents from all causes.												
10 to 19,	2	1	1	1	1	1	1	1	1	1	1	1
20 to 29,	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39,	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49,	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59,	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69,	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79,	1	1	1	1	1	1	1	1	1	1	1	1
80 to 89,	1	1	1	1	1	1	1	1	1	1	1	1
90 and over,	1	1	1	1	1	1	1	1	1	1	1	1
Totals,	5	5	5	5	5	5	5	5	5	5	5	5
Violent deaths (suicide excepted).												
10 to 19,	1	1	1	1	1	1	1	1	1	1	1	1
20 to 29,	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39,	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49,	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59,	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69,	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79,	1	1	1	1	1	1	1	1	1	1	1	1
80 to 89,	1	1	1	1	1	1	1	1	1	1	1	1
90 and over,	1	1	1	1	1	1	1	1	1	1	1	1
Totals,	2	1	11	.....	17	.....	7	1	1	.....	4	.....
Suicide.												
10 to 19,	1	1	1	1	1	1	1	1	1	1	1	1
20 to 29,	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39,	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49,	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59,	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69,	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79,	1	1	1	1	1	1	1	1	1	1	1	1
80 to 89,	1	1	1	1	1	1	1	1	1	1	1	1
90 and over,	1	1	1	1	1	1	1	1	1	1	1	1
Totals,	1	1	1	1	1	1	1	1	1	1	1	1

CERTAIN SELECTED CAUSES, NEW JERSEY, 1920—Continued.

	CERTAIN SELECTED CAUSES, NEW JERSEY, 1920—Continued.																					
	TRADE.	Bankers, brokers and moneylenders.	Clerks in stores.	Commercial travelers.	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).	Policemen.	Soldiers, sailors and marines.	Other pursuits.			
Summary of accidents from all causes.																						
10 to 19,	4	12	1	1	1	13	32	1	90	13	4	4	11	8	17							
20 to 29,	12	12	1	1	1	12	32	1	90	13	4	11	8	17								
30 to 39,	12	12	1	1	1	12	32	1	90	13	4	11	8	17								
40 to 49,	12	12	1	1	1	12	32	1	90	13	4	11	8	17								
50 to 59,	12	12	1	1	1	12	32	1	90	13	4	11	8	17								
60 to 69,	12	12	1	1	1	12	32	1	90	13	4	11	8	17								
70 to 79,	12	12	1	1	1	12	32	1	90	13	4	11	8	17								
80 to 89,	12	12	1	1	1	12	32	1	90	13	4	11	8	17								
90 and over,	12	12	1	1	1	12	32	1	90	13	4	11	8	17								
Totals,	85	8	53	13	102	4	16	24	17	22	24	35	8	53	13	102	4	16	24	17	22	24

TABLE 15.—TABULATION OF DEATHS IN NEW JERSEY FOR 1920, ACCORDING TO ABBRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns: Abridged International List No., Cause of Death, Total, Male, Female, Color, 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. Includes categories like Typhoid fever, Tuberculosis, Cholera, etc.

Total, 40820

Estimated population, 3,187,767.

Total resident deaths, 40,820.

Rate per 1,000 population, 12.80.

TABLE 16.—TABULATION OF DELATHS IN ATLANTIC COUNTY FOR 1920, ACCORDING TO ABBRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns: Abridged International List No., Cause of Death, Total, Male, Female, Color, 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. Includes categories like Typhoid fever, Typhus fever, Malaria, etc.

Total, 1298

Estimated population, 84,533.

Total resident deaths, 1,298.

Rate per 1,000 population, 14.23.

TABLE 17.—TABULATION OF DEATHS IN ATLANTIC CITY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Abridged International List No.	CAUSE OF DEATH.	Total.	Sex.		Color, If other than white.	AGE PERIODS.											90 and over.	Unknown.			
			Male.	Female.		Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.	40 to 49.			50 to 59.	60 to 69.	70 to 79.	80 to 89.
1	Typhoid fever.	1		1																	
2	Typhus fever.																				
3	Malaria.																				
4	Smallpox.	3	3																		
5	Measles.	6	6																		
6	Scarlet fever.	7	7																		
7	Whooping cough.	12	6	6																	
8	Diphtheria and croup.	11	6	5																	
9	Indiana.	11	6	5																	
10	Adaltic cholera.																				
11	Cholera nostras.	61	31	30																	
12	Other epidemic diseases.	1		1																	
13	Tyberulous meningitis.	5	2	3																	
14	Other forms of tuberculosis.	10	5	5																	
15	Cancer and other malignant tumors.	57	18	35																	
16	Cerebro-spinal meningitis.	17	6	11																	
17	Simple meningitis.	1	1																		
18	Brain abscess.	1	1																		
19	Organic diseases of the heart.	97	40	57																	
20	Acute bronchitis.	6	3	3																	
21	Chronic bronchitis.	4	2	2																	
22	Pneumonia.	40	17	23																	
23	Other ill-defined diseases of the respiratory system (tuberculosis excepted).	46	27	19																	
24	Diseases of the stomach (cancer excepted).	6	4	2																	
25	Diarrhoea and enteritis (under 2 years).	17	6	11																	
26	Other diseases of the intestines.	7	3	4																	
27	Hernia, Intestinal obstruction.	6	3	3																	
28	Cirrhosis of the liver.	6	5	1																	
29	Acute nephritis and Bright's disease.	101	47	54																	
30	Other diseases of the genito-urinary system and other diseases of the female genitalia.	4		4																	
31	Puerperal septicaemia (puerperal fever, puerperal tonsitis).	2		2																	
32	Other puerperal accidents of pregnancy and labor.	7	7																		
33	Other diseases of the placenta and membranes.	22	10	12																	
34	Scalds.	1		1																	
35	Scalds.	1		1																	
36	Violent death (suicide excepted).	38	23	15	0																
37	Other diseases.	139	70	69	1																
38	Unknown or ill-defined disease.	1		1																	
	Total.	772	338	414	224	64	16	8	5	8	114	20	221	57	77	111	136	101	85	42	7

Estimated population, 60,942.

Total resident deaths, 772.

Rate per 1,000 population, 15.15.

TABLE 18.—TABULATION OF DEATHS IN HAMMONTON TOWN FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Abridged International List No.	CAUSE OF DEATH.	Total.	Sex.		Color, If other than white.	AGE PERIODS.											90 and over.	Unknown.				
			Male.	Female.		Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.	40 to 49.			50 to 59.	60 to 69.	70 to 79.	80 to 89.
1	Typhoid fever.																					
2	Typhus fever.																					
3	Malaria.																					
4	Smallpox.																					
5	Measles.	1	1																			
6	Scarlet fever.																					
7	Whooping cough.	1		1																		
8	Diphtheria and croup.	2		2																		
9	Indiana.																					
10	Adaltic cholera.																					
11	Cholera nostras.																					
12	Other epidemic diseases.	4	1	3																		
13	Tyberulous meningitis.																					
14	Other forms of tuberculosis.	10	4	6																		
15	Cancer and other malignant tumors.	2		2																		
16	Cerebro-spinal meningitis.	1	1																			
17	Simple meningitis.	5	1	4																		
18	Brain abscess.	1	1																			
19	Organic diseases of the heart.	14	4	10																		
20	Acute bronchitis.	13	1	12																		
21	Chronic bronchitis.	5	1	4																		
22	Pneumonia.	5	2	3																		
23	Other ill-defined diseases of the respiratory system (tuberculosis excepted).	1		1																		
24	Diseases of the stomach (cancer excepted).	2		2																		
25	Diarrhoea and enteritis (under 2 years).	7	2	5																		
26	Other diseases of the intestines.	1		1																		
27	Hernia, Intestinal obstruction.	1		1																		
28	Cirrhosis of the liver.	6	2	4																		
29	Acute nephritis and Bright's disease.	1		1																		
30	Other diseases of the genito-urinary system and other diseases of the female genitalia.	1		1																		
31	Puerperal septicaemia (puerperal fever, puerperal tonsitis).																					
32	Other puerperal accidents of pregnancy and labor.	4		4																		
33	Other diseases of the placenta and membranes.	10	5	5																		
34	Scalds.	1		1																		
35	Violent death (suicide excepted).	23	15	8																		
36	Other diseases.	70	60	10																		
37	Unknown or ill-defined disease.	1		1																		
	Total.	81	36	46	46	15	6	1	6	3	28	5	2	5	6	7	9	10	11	6	1	

Estimated population, 6,486.

Total resident deaths, 84.

Rate per 1,000 population, 12.95.

TABLE 21.—TABULATION OF DEATHS IN GARFIELD BOROUGH FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Abridged International List No.	CAUSE OF DEATH.		AGE PERIODS.												Rate per 1,000 population, 10:57.						
	Total.	Color, If other than white.	Male.						Female.												
			Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.	40 to 49.	50 to 59.		60 to 69.	70 to 79.	80 to 89.	90 and over.	Unknown.	
1	Typhoid fever.	1																			
2	Typhus fever.	3																			
3	Malaria.	3																			
4	Smallpox.	1																			
5	Scarlet fever.	4																			
6	Measles.	4																			
7	Whooping cough.	1																			
8	Diphtheria and croup.	1																			
9	Influenza.	6																			
10	Cholera nostras.	3																			
11	Cholera nostras.	1																			
12	Other epidemic diseases.	12																			
13	Tuberculosis of the lungs.	14																			
14	Tuberculosis meningitis.	4																			
15	Tuberculosis of the brain.	7																			
16	Cancer and other malignant tumors.	1																			
17	Simple meningitis.	1																			
18	Cerebral hemorrhage and softening.	34																			
19	Organic diseases of the heart.	17																			
20	Cholelithiasis.	1																			
21	Chronic bronchitis.	1																			
22	Pneumonia.	16																			
23	Other diseases of the respiratory system (tuberculosis excepted).	11																			
24	Diseases of the ear, nose and throat (cancer excepted).	3																			
25	Diseases of the alimentary canal (cancer excepted).	27																			
26	Diarrhea and dysentery (under 2 years).	15																			
27	Appendicitis and typhilitis.	2																			
28	Hernia, intestinal obstruction.	1																			
29	Chronic of the liver.	8																			
30	Noncancerous tumors and other diseases of the female genital organs.	1																			
31	Puerperal septicemia (puerperal fever, puerperal fever).	9																			
32	Other puerperal septicemias and other diseases of the female genital organs (puerperal fever excepted).	12																			
33	Concussional disability and malformations.	7																			
34	Senility.	15																			
35	Suicide, deaths (suicide excepted).	24																			
36	Other diseases.	10																			
37	Other diseases.	12																			
38	Other diseases.	8																			
39	Unknown or ill-defined diseases.	3																			
40	Unknown or ill-defined diseases.	2																			
41	Total.	210	110	100	00	16	2	9	3	98	4	11	17	12	10	14	12	9	1		

Estimated population, 10,834.

Total resident deaths, 210.

TABLE 22.—TABULATION OF DEATHS IN HACEKSNACK TOWN FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Abridged International List No.	CAUSE OF DEATH.		AGE PERIODS.														Rate per 1,000 population, 12.77.						
	Total.	Color, If other than white.	Male.							Female.													
			Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.	40 to 49.	50 to 59.	60 to 69.	70 to 79.		80 to 89.	90 and over.	Unknown.			
1	Typhoid fever.	1																					
2	Typhus fever.	1																					
3	Malaria.	4																					
4	Smallpox.	1																					
5	Scarlet fever.	4																					
6	Measles.	7																					
7	Diphtheria and croup.	2																					
8	Influenza.	5																					
9	Cholera nostras.	2																					
10	Cholera nostras.	13																					
11	Cholera nostras.	6																					
12	Other epidemic diseases.	7																					
13	Tuberculosis of the lungs.	13																					
14	Tuberculosis meningitis.	6																					
15	Other forms of tuberculosis.	2																					
16	Cancer and other malignant tumors.	20																					
17	Simple meningitis.	18																					
18	Cerebral hemorrhage and softening.	12																					
19	Organic diseases of the heart.	24																					
20	Acute bronchitis.	2																					
21	Chronic bronchitis.	2																					
22	Other diseases of the respiratory system (tuberculosis excepted).	21																					
23	Diseases of the stomach (cancer excepted).	10																					
24	Diseases of the alimentary canal (cancer excepted).	5																					
25	Appendicitis and typhilitis.	2																					
26	Hernia, intestinal obstruction.	2																					
27	Chronic of the liver.	4																					
28	Acute nephritis and Bright's disease.	2																					
29	Other diseases of the urinary system.	13																					
30	Other diseases of the female genital organs.	2																					
31	Puerperal septicemia (puerperal fever, puerperal fever).	1																					
32	Other puerperal septicemias and other diseases of the female genital organs (puerperal fever excepted).	2																					
33	Concussional disability and malformations.	0																					
34	Senility.	1																					
35	Suicide.	4																					
36	Violent deaths (suicide excepted).	13																					
37	Other diseases.	15																					
38	Other diseases.	8																					
39	Unknown or ill-defined diseases.	3																					
40	Unknown or ill-defined diseases.	2																					
41	Total.	229	113	115	16	20	9	3	1	2	44	7	5	16	21	27	27	32	20	16	4		

Estimated population, 17,984.

Total resident deaths, 229.

TABLE 24.—TABULATION OF DEATHS IN BURLINGTON COUNTY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

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

Estimated population, 82,854.

Total resident deaths, 1,092.

Rate per 1,000 population, 13.22.

TABLE 25.—TABULATION OF DEATHS IN BURLINGTON CITY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

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

Estimated population, 9,098.

Total resident deaths, 120.

Rate per 1,000 population, 13.70.

TABLE 27.—TABULATION OF DEATHS IN CAMDEN COUNTY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns: Abridged Internat'l List No., Cause of Death, Total, Male, Female, Color, 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. Includes rows for Typhoid fever, Typhus fever, Malaria, and others.

Total. 2072 1394 1278 290 484 102 26 23 10 045

Total resident deaths, 2,972.

Rate per 1,000 population, 13.84.

TABLE 28.—TABULATION OF DEATHS IN CAMDEN CITY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns: Abridged Internat'l List No., Cause of Death, Total, Male, Female, Color, 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. Includes rows for Typhoid fever, Typhus fever, Malaria, and others.

Total. 1769 870 893 205 303 81 18 19 8 470

Total resident deaths, 1,769.

Rate per 1,000 population, 14.85.

TABLE 29.—TABULATION OF DEATHS IN GLOUCESTER CITY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Abridged International List No.	CAUSE OF DEATH.	Total.	Color, if other than white.		AGE PERIODS.											Total.							
			Male.	Female.	Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.	40 to 49.		50 to 59.	60 to 69.	70 to 79.	80 to 89.	90 and over.	Unknown.	
1	Typhoid fever.	1		1								1											
2	Typhus fever.																						
3	Malaria.																						
4	Smallpox.																						
5	Measles.																						
6	Scarlet fever.								1														
7	Whooping cough.																						
8	Diphtheria and croup.																						
9	Influenza.																						
10	Asiatic cholera.														2								
11	Cholera nostras.																						
12	Other epidemic diseases.																						
13	Tuberculosis meningitis.	12	2	4		1								2									
14	Other forms of tuberculosis.														1								
15	Cancer and other malignant tumors.	12	4	8										1									
16	Simple meningitis.														2								
17	Other forms of meningitis.																						
18	Organic diseases of the heart.	12	5	8		1									2								
19	Acute bronchitis.																						
20	Pneumonia.	7	3	4		1								3									
21	Chronic bronchitis.																						
22	Diseases of the respiratory system (tuberculosis excepted).	6	2	8		2			2					1									
23	Diseases of the stomach (cancer excepted).																						
24	Diarrhoes and enteritis (under 2 years).	6	4	2		6																	
25	Dysentery and typhilitis.																						
26	Ulcers of the intestine.																						
27	Cirrhosis of the liver.																						
28	Acute nephritis and Bright's disease.	23	10	13					1					2									
29	Non-neuracous tumors and other diseases of the female genital organs (gonorrheal fever, pect. tonitis).	1		1											1								
30	Other puerperal accidents of pregnancy and labor.																						
31	Constitutional debility and malformations.	6	6			6																	
32	Senility.																						
33	Violent deaths (suicides excepted).	5	4	1						3				1									
34	Other diseases.	12	6	6		4			4					3									
35	Unknown or ill-defined diseases.																						
36	Other diseases.																						
37	Violent deaths (suicides excepted).																						
38	Other diseases.																						
39	Unknown or ill-defined diseases.																						
40	Unknown.																						
Total.		1300	733	567	253	2	205	1	28		7	6	11	15	10	24	18	30					
	Estimated population, 12,391.	Rate per 1,000 population, 10.50.																					

Total resident deaths, 130.

Rate per 1,000 population, 10.50.

TABLE 30.—TABULATION OF DEATHS IN GAYE MAY COUNTY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Abridged International List No.	CAUSE OF DEATH.	Total.	Color, if other than white.		AGE PERIODS.											Total.							
			Male.	Female.	Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.	40 to 49.		50 to 59.	60 to 69.	70 to 79.	80 to 89.	90 and over.	Unknown.	
1	Typhoid fever.	1		1																			
2	Typhus fever.																						
3	Malaria.																						
4	Smallpox.																						
5	Measles.																						
6	Scarlet fever.																						
7	Whooping cough.																						
8	Diphtheria and croup.																						
9	Influenza.																						
10	Asiatic cholera.																						
11	Cholera nostras.																						
12	Other epidemic diseases.																						
13	Tuberculosis meningitis.																						
14	Other forms of tuberculosis.																						
15	Cancer and other malignant tumors.																						
16	Simple meningitis.	17	8	9	2									5	3	1	4						
17	Other forms of meningitis.																						
18	Organic diseases of the heart.	19	6	13											4	6	6	4					
19	Acute bronchitis.	48	23	25	5										4	10	15	8	2				
20	Pneumonia.	2	1	1																			
21	Chronic bronchitis.																						
22	Diseases of the respiratory system (tuberculosis excepted).	13	4	9		1								1	1								
23	Diseases of the stomach (cancer excepted).	3	2	1		4																	
24	Diarrhoes and enteritis (under 2 years).	6	1	5		6																	
25	Dysentery and typhilitis.																						
26	Ulcers of the intestine.																						
27	Cirrhosis of the liver.																						
28	Acute nephritis and Bright's disease.	37	16	21	5									2	8	0	8	4					
29	Non-neuracous tumors and other diseases of the female genital organs.	2		2																			
30	Other puerperal accidents of pregnancy and labor.	3		3																			
31	Constitutional debility and malformations.	10	7	3	3				10														
32	Senility.																						
33	Violent deaths (suicides excepted).	14	5	9	1					4				2	2	1	1						
34	Other diseases.	39	21	18	8	2			8					1	5	13	7	5	1				
35	Unknown or ill-defined diseases.																						
36	Other diseases.																						
37	Violent deaths (suicides excepted).																						
38	Other diseases.																						
39	Unknown or ill-defined diseases.																						
40	Unknown.																						
Total.		223	118	105	30	31	2	1	4	2	40	0	5	8	11	22	29	54	48	24	0		
	Estimated population, 10,445.	Rate per 1,000 population, 15.01.																					

Total resident deaths, 253.

Rate per 1,000 population, 15.01.

TABLE 31.—TABULATION OF DEATHS IN CUMBERLAND COUNTY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns: Abridged Internat. List No., Cause of Death, Total, Male, Female, Color, Age Periods (Under 1 year to 90 and over), and Unknown. Includes categories like Typhoid fever, Measles, Scarlet fever, Cholera, and Tuberculosis.

Estimated population, 61,068.

Total resident deaths, 941.

Rate per 1,000 population, 15.25.

TABLE 32.—TABULATION OF DEATHS IN BRIDGETON CITY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns: Abridged Internat. List No., Cause of Death, Total, Male, Female, Color, Age Periods (Under 1 year to 90 and over), and Unknown. Includes categories like Typhoid fever, Measles, Scarlet fever, Cholera, and Tuberculosis.

Estimated population, 14,250.

Total resident deaths, 247.

Rate per 1,000 population, 17.28.

TABLE 33.—TABULATION OF DEATHS IN MILLVILLE CITY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Abridged Interna- tional List No.	CAUSE OF DEATH.		AGE PERIODS.											Color, if other than white.	Female.	Male.	Total.				
	Male.	Female.	Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.	40 to 49.					50 to 59.	60 to 69.	70 to 79.	80 to 89.	90 and over.	Unknown.
1	2		1	1	1	1		1													
2																					
3																					
4																					
5			1	1																	
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13			1	1																	
14			1	1																	
15			1	1																	
16			1	1																	
17			1	1																	
18			1	1																	
19			1	1																	
20																					
21																					
22																					
23																					
24																					
25																					
26																					
27																					
28																					
29																					
30																					
31																					
32																					
33																					
34																					
35																					
36																					
37																					
38																					
Total.	249	112	88	6	24	8	3	36	6	4	7	18	17	19	33	39	22				

Estimated population, 14,807.

Total resident deaths, 290.

Rate per 1,000 population, 13.80.

TABLE 34.—TABULATION OF DEATHS IN VINELAND BOROUGH FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Abridged Interna- tional List No.	CAUSE OF DEATH.		AGE PERIODS.											Color, if other than white.	Female.	Male.	Total.					
	Male.	Female.	Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.	40 to 49.					50 to 59.	60 to 69.	70 to 79.	80 to 89.	90 and over.
1																						
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
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13																						
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16																						
17																						
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19																						
20																						
21																						
22																						
23																						
24																						
25																						
26																						
27																						
28																						
29																						
30																						
31																						
32																						
33																						
34																						
35																						
36																						
37																						
38																						
Total.	145	72	73	13	20	4	3	1	25	2	7	12	11	14	11	24	23	0	2			

Estimated population, 6,878.

Total resident deaths, 145.

Rate per 1,000 population, 21.06.

TABLE 35.—TABULATION OF DEATHS IN ESSEX COUNTY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns for Cause of Death, Total, Male, Female, Color, Age Periods (Under 1 year to 90 and over), and Total resident deaths (8,388). Rows include Typhoid fever, Typhus fever, Malaria, Smallpox, Measles, Whooping cough, Diptheria and croup, Influenza, Asiatic cholera, Other epidemic diseases, Tuberculosis of the lungs, Tuberculous meningitis, Cancer of malignant tumors, Simple meningitis, Cerebral haemorrhage and softening, Organic diseases of the heart, Cirrhosis of the liver, Pneumonia, Other diseases of the respiratory system, Diseases of the stomach, Appendicitis and typhlitis, Hernia, intestinal obstruction, Cirrhosis of the liver, Acute nephritis and Bright's disease, Non-specific and other diseases of the female genital organs, Puerperal septicaemia, Gonorrhoea, Syphilis, Venereal diseases, and Unknown or ill-defined diseases.

Estimated population, 650,245. Total resident deaths, 8,388. Rate per 1,000 population, 12.72.

TABLE 36.—TABULATION OF DEATHS IN BLOODFIELD TOWN FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns for Cause of Death, Total, Male, Female, Color, Age Periods (Under 1 year to 90 and over), and Total resident deaths (22,377). Rows include Typhoid fever, Typhus fever, Malaria, Smallpox, Measles, Whooping cough, Diptheria and croup, Influenza, Asiatic cholera, Other epidemic diseases, Tuberculosis of the lungs, Tuberculous meningitis, Cancer of malignant tumors, Simple meningitis, Cerebral haemorrhage and softening, Organic diseases of the heart, Cirrhosis of the liver, Acute nephritis and Bright's disease, Non-specific and other diseases of the female genital organs, Puerperal septicaemia, Gonorrhoea, Syphilis, Venereal diseases, and Unknown or ill-defined diseases.

Estimated population, 22,377. Total resident deaths, 2,941. Rate per 1,000 population, 10.76.

TABLE 43.—TABULATION OF DEATHS IN S. ORANGE VILLAGE FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

CAUSE OF DEATH.	AGE PERIODS.											Color, If other than white.	Female.	Male.	Total.						
	Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.	40 to 49.					50 to 59.	60 to 69.	70 to 79.	80 to 89.	90 and over.	Unknown.
	4	4	2	2	10	10	4	1	6	8	10					7	13	23	6	1	
1 Typhoid fever.																					
2 Typhus fever.																					
3 Smallpox.																					
4 Measles.																					
5 Scarlet fever.																					
6 Whooping cough.																					
7 Diphtheria and croup.																					
8 Influenza.																					
9 Asiatic cholera.																					
10 Cholera nostris.																					
11 Typhoid dysentery.																					
12 Tuberculous meningitis.																					
13 Other forms of tuberculosis.																					
14 Cancer and other malignant tumors.																					
15 Other forms of tuberculosis.																					
16 Other forms of tuberculosis.																					
17 Cerebral meningitis.																					
18 Organic diseases of the heart.																					
19 Acute nephritis and Bright's disease.																					
20 Acute bronchitis.																					
21 Chronic bronchitis.																					
22 Other diseases of the respiratory system.																					
23 Tuberculosis excepted.																					
24 Diseases of the stomach (cancer excepted).																					
25 Diarrhoea and enteritis (under 2 years).																					
26 Typhoid and typhilitis.																					
27 Hemorrhoids.																					
28 Cirrhosis of the liver.																					
29 Acute nephritis and Bright's disease.																					
30 Malignant tumors and other diseases of the																					
31 Puerperal septicaemia (puerperal fever, peritonitis).																					
32 Other puerperal accidents of pregnancy and labor.																					
33 Mental debility and malformations.																					
34 Senility.																					
35 Suicide.																					
36 Violent deaths (suicide excepted).																					
37 Other diseases.																					
38 Unknown or ill-defined diseases.																					
Total.	88	45	49	0	4	4	2	2	10	10	4	1	6	8	10	7	13	23	6	1	

Estimated population, 7,339.

Total resident deaths, 88.

Rate per 1,000 population, 11.90.

TABLE 44.—TABULATION OF DEATHS IN WEST ORANGE TOWN FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

CAUSE OF DEATH.	AGE PERIODS.											Color, If other than white.	Female.	Male.	Total.						
	Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.	40 to 49.					50 to 59.	60 to 69.	70 to 79.	80 to 89.	90 and over.	Unknown.
	5	7	4	2	2	1	2	6	10	14	21					21	22	16	11	2	
1 Typhoid fever.																					
2 Typhus fever.																					
3 Smallpox.																					
4 Measles.																					
5 Scarlet fever.																					
6 Whooping cough.																					
7 Diphtheria and croup.																					
8 Influenza.																					
9 Asiatic cholera.																					
10 Cholera nostris.																					
11 Typhoid dysentery.																					
12 Tuberculous meningitis.																					
13 Other forms of tuberculosis.																					
14 Cancer and other malignant tumors.																					
15 Other forms of tuberculosis.																					
16 Other forms of tuberculosis.																					
17 Cerebral meningitis.																					
18 Organic diseases of the heart.																					
19 Acute nephritis and Bright's disease.																					
20 Acute bronchitis.																					
21 Chronic bronchitis.																					
22 Other diseases of the respiratory system.																					
23 Tuberculosis excepted.																					
24 Diseases of the stomach (cancer excepted).																					
25 Diarrhoea and enteritis (under 2 years).																					
26 Typhoid and typhilitis.																					
27 Hemorrhoids.																					
28 Cirrhosis of the liver.																					
29 Acute nephritis and Bright's disease.																					
30 Malignant tumors and other diseases of the																					
31 Puerperal septicaemia (puerperal fever, peritonitis).																					
32 Other puerperal accidents of pregnancy and labor.																					
33 Mental debility and malformations.																					
34 Senility.																					
35 Suicide.																					
36 Violent deaths (suicide excepted).																					
37 Other diseases.																					
38 Unknown or ill-defined diseases.																					
Total.	171	84	87	1	21	7	4	1	2	35	5	6	10	14	21	21	22	16	11	2	

Estimated population, 15,800.

Total resident deaths, 171.

Rate per 1,000 population, 10.81.

TABLE 45.—TABULATION OF DEATHS IN GLOUCESTER COUNTY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns: Abridged International List No., Cause of Death, Total, Male, Female, Color (if other than white), Age Periods (Under 1 year to 90 and over).

Estimated population, 48,784.

Total resident deaths, 690.

Rate per 1,000 population, 14.32.

TABLE 46.—TABULATION OF DEATHS IN HUDSON COUNTY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns: Abridged International List No., Cause of Death, Total, Male, Female, Color (if other than white), Age Periods (Under 1 year to 90 and over).

Estimated population, 638,860.

Total resident deaths, 8,181.

Rate per 1,000 population, 12.90.

TABLE 47.—TABULATION OF DEATHS IN BAYONNE CITY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns: Cause of Death, Total, Male, Female, Color (White/Other), Age Periods (Under 1 year to 80 and over), and Total Resident Deaths (810). Rows include Typhoid fever, Typhus fever, Cholera, etc.

Estimated population, 77,947.

Total resident deaths, 810.

Rate per 1,000 population, 10.52.

TABLE 48.—TABULATION OF DEATHS IN GUTTENBERG TOWN FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns: Cause of Death, Total, Male, Female, Color (White/Other), Age Periods (Under 1 year to 90 and over), and Total Resident Deaths (65). Rows include Typhoid fever, Typhus fever, Cholera, etc.

Estimated population, 0.782.

Total resident deaths, 65.

Rate per 1,000 population, 8.10.

TABLE 51.—TABULATION OF DEATHS IN JERSEY CITY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

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

Total. 4902 2259 2643 304 745 215 881 560 461 114 100 100 357 369 415 520 531 441 183 21

Estimated population, 200,005.

Total resident deaths, 4,302.

Rate per 1,000 population, 4.35.

TABLE 52.—TABULATION OF DEATHS IN KEARNY TOWN FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

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

Estimated population, 27,140.

Total resident deaths, 270.

Rate per 1,000 population, 10.10.

TABLE 69.—TABULATION OF DEATHS IN TRENTON CITY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Abridged International List No.	CAUSE OF DEATH.		AGE PERIODS.															Color, If other than white.	Total.	Estimated population, 129,447.
	Male.	Female.	Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.	40 to 49.	50 to 59.	60 to 69.	70 to 79.	80 to 89.				90 and over.	Unknown.
1	6	3	1									2	1	2						
2																				
3																				
4																				
5	3	2																		
6	6	5																		
7	9	6																		
8	9	4																		
9	43	31	30	1	7	2	1	2	10	11	2	2	2	2	5	1				
10																				
11																				
12	143	77	4	4	4				12	45	35	23	17	6						
13	139	5	60						2											
14	10	5	15	1					3											
15	87	52	28	4	1				2	12	45									
16	8	21	4	1					1	2										
17	65	41	4	1	1				1	7	19	33	27	7						
18	108	98	10	3	1	1			4	1	0	9	20	19	52	35	16	4		
19	2	2																		
20	116	64	52	7	23	7	1	1	1	13	15	15	12	14	11	2				
21																				
22	110	61	53	4	38	19	4	4	60	5	4	7	4	6	9	9	5	4		
23	81	42	36	4	60	15	1		122	1	2	7	8	30	25	5	3			
24	122	60	22	0	121															
25	5	4																		
26	8	6	2																	
27	243	330	104	16	43	2			6	10	16	8	6	10	17	1				
28	2	1							4	1	1	1	2	1	1	1				
29	160	815	728	82	320	62	20	14	10	44	48	120	159	126	133	214	183	60	17	

Total resident deaths, 1,563.

Rate per 1,000 population, 12.97.

TABLE 60.—TABULATION OF DEATHS IN MIDDLESEX COUNTY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Abridged International List No.	CAUSE OF DEATH.		AGE PERIODS.															Color, If other than white.	Total.	Estimated population, 164,802.	
	Male.	Female.	Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.	40 to 49.	50 to 59.	60 to 69.	70 to 79.	80 to 89.				90 and over.	Unknown.
1	4	3																			
2																					
3																					
4	15	6	5	4	3	1	14														
5	2	1	16	10	3	1	31														
6	13	18	10	6	3	7	25	6	2	1											
7	63	34	20	1	3	4	11	5	0	11	1	1	7	3	1	2	1				
8	2	2																			
9	149	96	58	1	1	1	2	8	12	42	33	22	20	9	4	2					
10																					
11	117	40	7	1	2	1	2	1	2	0	13	32	50	18	12	1					
12	111	57	3	1	3	1	6	3	1	1	2	6	13	32	20	18	12	1			
13	124	74	45	6	3	1	2	1	7	1	20	32	20	21	2						
14	150	161	102	5	1	1	2	0	7	4	12	17	30	47	49	22					
15	15	16	1	1	2	0	13	6	1	1	1	1	1	1	3	1					
16	2	4	0	12	1	1	13	1	0	0	0	6	26	30	26	22	6	2			
17	104	89	71	0	21	13	6	3	2	45	3	4	18	24	10	16	11	4			
18	115	69	53	5	58	17	5	3	60	3	1	1	1	1	1	3	1				
19	161	84	67	4	125	20			151												
20	7	4	3																		
21	8	2	2																		
22	123	74	50	4	1	1			2												
23																					
24																					
25	22	22	22	0																	
26	140	77	69	3	144	1			146												
27	13	7	6																		
28	101	107	83	7	4	2	6	5	28	7	18	17	10	34	38	3	4				
29	237	123	122	4	58	2	3	3	6	11	12	1	1	1	1	1					
30	15	9	6																		
31	1970	1058	941	61	403	95	36	31	27	654	45	82	198	188	101	218	217	101	102	13	

Total resident deaths, 1,976.

Rate per 1,000 population, 12.0.

TABLE 61.—TABULATION OF DEATHS IN NEW BRUNSWICK CITY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns for Cause of Death, Total, Male, Female, Color, Age Periods (Under 1 year to 90 and over), and Unknown. Includes categories like Typhoid fever, Tuberculosis, Diphtheria, etc. Estimated population: 33,203.

Total resident deaths, 488. Rate per 1,000 population, 14.67.

TABLE 62.—TABULATION OF DEATHS IN PERTH AMBOY CITY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns for Cause of Death, Total, Male, Female, Color, Age Periods (Under 1 year to 90 and over), and Unknown. Includes categories like Typhoid fever, Tuberculosis, Diphtheria, etc. Estimated population: 42,201.

Total resident deaths, 402. Rate per 1,000 population, 11.65.

TABLE 71.—TABULATION OF DEATHS IN MORRISTOWN TOWN FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

CAUSE OF DEATH. International List No.	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 Typhoid fever.....																					
2 Typhus fever.....																					
3 Malaria.....																					
4 Smallpox.....																					
5 Measles.....																					
6 Scarlet fever.....																					
7 Whooping cough.....																					
8 Diphtheria and croup.....																					
9 Influenza.....																					
10 Asiatic cholera.....																					
11 Cholera nostras.....																					
12 Other epidemic diseases.....																					
13 Tuberculosis of the lungs.....																					
14 Tuberculosis meningitis.....																					
15 Other forms of tuberculosis.....																					
16 Cancer and other malignant tumors.....																					
17 Simple meningitis.....																					
18 Cerebral hæmorrhage and softening.....																					
19 Organic diseases of the heart.....																					
20 Acute bronchitis.....																					
21 Chronic bronchitis.....																					
22 Pneumonia.....																					
23 Other diseases of the respiratory system (tuberculosis excepted).....																					
24 Diseases of the stomach (cancer excepted).....																					
25 Diarrhoea and enteritis (under 2 years).....																					
26 Appendicitis and typhlitis.....																					
27 Hernia, intestinal obstruction.....																					
28 Cirrhosis of the liver.....																					
29 Acute nephritis and Bright's disease.....																					
30 Noncancerous tumors and other diseases of the female genital organs.....																					
31 Puerperal septicæmia (puerperal fever, peritonitis).....																					
32 Other puerperal accidents of pregnancy and labor.....																					
33 Congenital debility and malformations.....																					
34 Senility.....																					
35 Suicide.....																					
36 Violent deaths (suicide excepted).....																					
37 Other diseases.....																					
38 Unknown or ill-defined diseases.....																					
Total.....	184	98	86	16	18	2	1	1	1	2	2	2	2	8	10	14	19	27	35	20	2

Estimated population, 12,551. Total resident deaths, 184. Rate per 1,000 population, 14.66.

TABLE 72.—TABULATION OF DEATHS IN OCEAN COUNTY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

CAUSE OF DEATH. International List No.	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 Typhoid fever.....																						
2 Typhus fever.....																						
3 Malaria.....																						
4 Smallpox.....																						
5 Measles.....																						
6 Scarlet fever.....																						
7 Whooping cough.....																						
8 Diphtheria and croup.....																						
9 Influenza.....																						
10 Asiatic cholera.....																						
11 Cholera nostras.....																						
12 Other epidemic diseases.....																						
13 Tuberculosis of the lungs.....																						
14 Tuberculosis meningitis.....																						
15 Other forms of tuberculosis.....																						
16 Cancer and other malignant tumors.....																						
17 Simple meningitis.....																						
18 Cerebral hæmorrhage and softening.....																						
19 Organic diseases of the heart.....																						
20 Acute bronchitis.....																						
21 Chronic bronchitis.....																						
22 Pneumonia.....																						
23 Other diseases of the respiratory system (tuberculosis excepted).....																						
24 Diseases of the stomach (cancer excepted).....																						
25 Diarrhoea and enteritis (under 2 years).....																						
26 Appendicitis and typhlitis.....																						
27 Hernia, intestinal obstruction.....																						
28 Cirrhosis of the liver.....																						
29 Acute nephritis and Bright's disease.....																						
30 Noncancerous tumors and other diseases of the female genital organs.....																						
31 Puerperal septicæmia (puerperal fever, peritonitis).....																						
32 Other puerperal accidents of pregnancy and labor.....																						
33 Congenital debility and malformations.....																						
34 Senility.....																						
35 Suicide.....																						
36 Violent deaths (suicide excepted).....																						
37 Other diseases.....																						
38 Unknown or ill-defined diseases.....																						
Total.....	299	149	150	10	33	8	1	6	2	42	5	13	14	29	27	33	51	58	23	9	.....

Estimated population, 22,199. Total resident deaths, 299. Rate per 1,000 population, 13.46.

TABLE 79.—TABULATION OF DEATHS IN N. PLAINFIELD BORO FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

CAUSE OF DEATH.	AGE PERIODS.										Total	Male	Female	Color, if other than white.			
	Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.					40 to 49.	50 to 59.	60 to 69.	70 to 79.	80 to 89.	90 and over.	Unknown.
1 Typhoid fever,																	
2 Typhus fever,																	
3 Malaria,																	
4 Smallpox,																	
5 Measles,			1														
6 Scarlet fever,																	
7 Whooping cough,																	
8 Diphtheria and croup,			2														
9 Influenza,																	
10 Asiatic cholera,																	
11 Cholera nostras,																	
12 Other epidemic diseases,																	
13 Tuberculosis of the lungs,																	
14 Tuberculous meningitis,																	
15 Other forms of tuberculosis,																	
16 Cancer and other malignant tumors,																	
17 Simple meningitis,																	
18 Cerebral hemorrhage and softening,																	
19 Organic diseases of the heart,																	
20 Acute bronchitis,																	
21 Chronic bronchitis,																	
22 Pneumonia,																	
23 Other diseases of the respiratory system (tuberculosis excepted),																	
24 Diseases of the stomach (cancer excepted),																	
25 Diarrhoea and enteritis (under 2 years),																	
26 Appendicitis and typhlitis,																	
27 Hernia, intestinal obstruction,																	
28 Cirrhosis of the liver,																	
29 Acute nephritis and Bright's disease,																	
30 Noncancerous tumors and other diseases of the female genital organs,																	
31 Puerperal septicemia (puerperal fever, peritonitis),																	
32 Other puerperal accidents of pregnancy and labor,																	
33 Congenital debility and malformations,																	
34 Semility,																	
35 Suicide,																	
36 Violent deaths (suicide excepted),																	
37 Other diseases,																	
38 Unknown or ill-defined diseases,																	
Total,	98	44	54	2	8	2	8	13	1	1	6	7	7	21	28	12	1

Estimated population, 6,988.

Total resident deaths, 98.

Rate per 1,000 population, 14.08.

TABLE 80.—TABULATION OF DEATHS IN SOMERVILLE BOROUGH FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

CAUSE OF DEATH.	AGE PERIODS.										Total	Male	Female	Color, if other than white.			
	Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.					40 to 49.	50 to 59.	60 to 69.	70 to 79.	80 to 89.	90 and over.	Unknown.
1 Typhoid fever,																	
2 Typhus fever,																	
3 Malaria,																	
4 Smallpox,																	
5 Measles,																	
6 Scarlet fever,																	
7 Whooping cough,																	
8 Diphtheria and croup,																	
9 Influenza,																	
10 Asiatic cholera,																	
11 Cholera nostras,																	
12 Other epidemic diseases,																	
13 Tuberculosis of the lungs,																	
14 Tuberculous meningitis,																	
15 Other forms of tuberculosis,																	
16 Cancer and other malignant tumors,																	
17 Simple meningitis,																	
18 Cerebral hemorrhage and softening,																	
19 Organic diseases of the heart,																	
20 Acute bronchitis,																	
21 Chronic bronchitis,																	
22 Pneumonia,																	
23 Other diseases of the respiratory system (tuberculosis excepted),																	
24 Diseases of the stomach (cancer excepted),																	
25 Diarrhoea and enteritis (under 2 years),																	
26 Appendicitis and typhlitis,																	
27 Hernia, intestinal obstruction,																	
28 Cirrhosis of the liver,																	
29 Acute nephritis and Bright's disease,																	
30 Noncancerous tumors and other diseases of the female genital organs,																	
31 Puerperal septicemia (puerperal fever, peritonitis),																	
32 Other puerperal accidents of pregnancy and labor,																	
33 Congenital debility and malformations,																	
34 Semility,																	
35 Suicide,																	
36 Violent deaths (suicide excepted),																	
37 Other diseases,																	
38 Unknown or ill-defined diseases,																	
Total,	91	41	50	9	11	1	8	16	1	1	6	7	12	22	11	2	

Estimated population, 6,752.

Total resident deaths, 91.

Rate per 1,000, 13.47.

TABLE 83.—TABULATION OF DEATHS IN ELIZABETH CITY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns: 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).

Total resident population, 96,936.

Rate per 1,000 population, 11.90.

TABLE 84.—TABULATION OF DEATHS IN PLAINFIELD CITY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

Table with columns: 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).

Total resident population, 28,669.

Rate per 1,000 population, 13.43.

AGE PERIODS.

CAUSE OF DEATH.	AGE PERIODS.										Total.	Male.	Female.	Color, If other than white.				
	Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.					40 to 49.	50 to 59.	60 to 69.	70 to 79.	80 to 89.	90 and over.	Unknown.
Cholera,	1	1																
Dysentery,																		
Scarlet fever,		6				6												
Whooping cough,		2				4												
Diphtheria and croup,		2				4												
Measles,		2				4												
Infuenza,																		
Asiatic cholera,																		
Cholera nostras,		1				1												
Other epidemic diseases,		2				2												
Tuberculosis of the lungs,		1				1												
Other forms of tuberculosis,																		
Cancer and other malignant tumors,																		
Simple meningitis,		1				1												
Cerebral hemorrhage and softening,																		
Organic diseases of the heart,																		
Acute bronchitis,																		
Chronic bronchitis,																		
Pneumonia,																		
Other diseases of the respiratory system (tuberculosis excepted),																		
Diseases of the stomach (cancer excepted),																		
Diarrhoea and enteritis (under 2 years),																		
Appendicitis and typhlitis,																		
Hernia, intestinal obstruction,																		
Cirrhosis of the liver,																		
Acute nephritis and Bright's disease,																		
Noncancerous tumors and other diseases of the female genital organs,																		
Puerperal septicæmia (puerperal fever, peritonitis),																		
Other puerperal accidents of pregnancy and labor,																		
Congenital debility and malformations,																		
Senility,																		
Suicide,																		
Violent deaths (suicide excepted),																		
Other diseases,																		
Unknown or ill-defined diseases,																		
Total,	123	58	65	13	16	21	1	4	10	10	6	11	20	24	13	3		

Total resident deaths, 123.
 Rate per 1,000 population, 13.36.
 Estimated population, 9,200.

TABLE 88.—TABULATION OF DEATHS IN WARREN COUNTY FOR 1920, ACCORDING TO ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH.

CAUSE OF DEATH.	AGE PERIODS.										Total.	Male.	Female.	Color, If other than white.						
	Under 1 year.	1 year.	2 years.	3 years.	4 years.	Under 5 years.	5 to 9.	10 to 19.	20 to 29.	30 to 39.					40 to 49.	50 to 59.	60 to 69.	70 to 79.	80 to 89.	90 and over.	Unknown.
Typhoid fever,																				
Typhus fever,																				
Malaria,																				
Smallpox,																				
Measles,																				
Scarlet fever,		6				6														
Whooping cough,		2				4														
Diphtheria and croup,		2				4														
Infuenza,																				
Asiatic cholera,																				
Cholera nostras,		1				1														
Other epidemic diseases,		2				2														
Tuberculosis of the lungs,		1				1														
Other forms of tuberculosis,																				
Cancer and other malignant tumors,																				
Simple meningitis,		1				1														
Cerebral hemorrhage and softening,																				
Organic diseases of the heart,																				
Acute bronchitis,																				
Chronic bronchitis,																				
Pneumonia,																				
Other diseases of the respiratory system (tuberculosis excepted),																				
Diseases of the stomach (cancer excepted),																				
Diarrhoea and enteritis (under 2 years),																				
Appendicitis and typhlitis,																				
Hernia, intestinal obstruction,																				
Cirrhosis of the liver,																				
Acute nephritis and Bright's disease,																				
Noncancerous tumors and other diseases of the female genital organs,																				
Puerperal septicæmia (puerperal fever, peritonitis),																				
Other puerperal accidents of pregnancy and labor,																				
Congenital debility and malformations,																				
Senility,																				
Suicide,																				
Violent deaths (suicide excepted),																				
Other diseases,																				
Unknown or ill-defined diseases,																				
Total,	592	304	288	4	83	18	8	3	2	114	9	14	22	55	40	64	88	114	80	12

Total resident deaths, 592.
 Rate per 1,000 population, 13.11.
 Estimated population, 45,154.

TABLE 89.—TABULATION OF DEATHS IN PHILIPSBURG TOWN FOR 1930, ACCORDING TO 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.				
Typhoid fever.																									
Typhus fever.																									
Malaria.																									
Smallpox.																									
Measles.																									
Scarlet fever.																									
Whooping cough.																									
Diphtheria and croup.																									
Influenza.																									
Asiatic cholera.																									
Cholera nostras.																									
Other epidemic diseases.																									
Tuberculosis of the lungs.																									
Tuberculous meningitis.																									
Other forms of tuberculosis.																									
Cancer and other malignant tumors.																									
Simple meningitis.																									
Cerebral haemorrhage and softening.																									
Organic diseases of the heart.																									
Acute bronchitis.																									
Chronic bronchitis.																									
Pneumonia.																									
Other diseases of the respiratory system (tuberculosis excepted).																									
Diseases of the stomach (cancer excepted).																									
Diarrhoea and enteritis (under 2 years).																									
Appendicitis and typhilitis.																									
Hernia, intestinal obstruction.																									
Cirrhosis of the liver.																									
Acute nephritis and Bright's disease.																									
Noncancerous tumors and other diseases of the female genital organs.																									
Puerperal septicæmia (puerperal fever, peritonitis).																									
Other puerperal accidents of pregnancy and labor.																									
Congenital debility and malformations.																									
Senility.																									
Suicide.																									
Violent deaths (suicide excepted).																									
Other diseases.																									
Unknown or ill-defined diseases.																									
Total.	201	173	98	1	34	4	5	2	2	47	5	8	12	14	17	27	32	21	16	2					

Estimated population, 17,079. Total resident deaths, 201. Rate per 1,000 population, 11.76.

List of Licensed Health Officers and Sanitary Inspectors.

Following is a list of persons who have successfully passed the examination provided for in the act approved April 18th, 1903:

Health Officers.

Henry D. Abbott, M. D.	Bayonne.	Wm. S. Green, M. D.	Paterson.
John K. Adams, M. D.	Orange.	Chas. A. Griffin, D. V. M.	Orange.
T. Lee Adams.	Ocean City.	I. N. Griscom, M. D.	Ocean City.
Jos. Adler, M. D.	Bayonne.	Edward Gulon, M. D.	Atlantic City.
Martin E. Alpers.	Dover.	Selskar M. Gunn.	Orange.
Henry V. Amerman.	Kearny.	James J. Hagan.	Jersey City.
Fritz M. Arnolt.	Hackensack.	Orville R. Hagen.	Paterson.
T. Dudley Ballinger.	Princeton.	John J. Haley, M. D.	Gloucester City.
Wm. M. Barns, M. D.	Millburn.	John Hall.	Long Branch.
Howard L. Baumgartner.	Asbury Park.	Lester Hamblet.	Asbury Park.
J. Alonzo Beek, M. D.	Gloucester City.	Carl Hegstrom.	Perth Amboy.
John K. Bennett, M. D.	Gloucester City.	Alex. M. Heron, M. D.	Lakewood.
Joseph V. Bergen, M. D.	Paterson.	Richard B. Hiller.	Plainfield.
Richard Bew, M. D.	Atlantic City.	F. M. Hoffman, M. D.	New Brunswick.
Duncan W. Blake, Jr., M. D.	Gloucester City.	Wm. L. Holt, M. D.	Maplewood.
Wm. C. Blake.	Princeton.	J. I. Hoverder, M. D.	Atco.
Chas. B. Bleasby, M. D.	Garfield.	Robert N. Hoyt.	Summit.
Perkins Boynton.	Little Falls.	Edward R. Hunter, M. D.	Belanco.
Henry H. Brinkerhoff, M. D.	Jersey City.	Morton W. Huttenloch.	Montclair.
Chas. S. Brady, M. D.	Town of Union.	Ralph L. Huttenloch.	Montclair.
John J. Broderick, M. D.	Jersey City.	H. W. Ingling, M. D.	Freehold.
Wm. H. Brooke, M. D.	Bayonne.	Wm. H. Izard, M. D.	Camden.
James E. Brooks.	Glen Ridge.	Maximilian Jakob, M. D.	Chrome.
J. Alex. Browne, M. D.	Paterson.	Henry C. James, M. D.	Mays Landing.
David E. Buckley.	West Orange.	Charles E. Jamison, M. D.	Asbury Park.
Dundas R. Campbell, M. D.	Newark.	Ralph R. Jones, M. D.	Toms River.
Collis H. Case.	Plainfield.	John D. Jungmann, M. D.	Camden.
John J. Casey.	Plainfield.	Chas. A. Keating, M. D.	Paterson.
N. J. Randolph Chandler.	Plainfield.	Jay E. Kilpatrick.	Montclair.
T. A. Clay, M. D.	Paterson.	Chester H. King, M. D.	Oradell.
Ralph O. Clock, M. D.	Burlington.	I. Warner Knight, M. D.	Penn's Grove.
Morris W. Clouse, M. D.	Kearny.	Hugo Krause.	Ventnor City.
Nathan A. Cohen, M. D.	Wildwood.	W. U. Kurtz, M. D.	Asbury Park.
Max J. Colton.	New Brunswick.	Chas. J. Larkey, M. D.	Bayonne.
John T. Connelly, M. D.	Bayonne.	Herbert B. Larner.	Montclair.
Wm. C. Craig, M. D.	Ridgewood.	Geo. W. Lawrence, M. D.	Lakewood.
Chas. V. Craster, M. D.	Rosebank, N. Y.	Jesse B. Leslie.	Hackensack.
Jos. J. Craven, M. D.	Jersey City.	Malcolm Lewis.	Montclair.
E. Irving Cronk, M. D.	New Brunswick.	J. William Long.	Trenton.
Grant P. Curtis, M. D.	Town of Union.	J. C. Loper, M. D.	Bridgeton.
Samuel S. DeCou.	Trenton.	John L. Lund, M. D.	Perth Amboy.
Jeremiah J. Donovan, M. D.	Rosindale, Mass.	Henry MacDonald.	Newark.
W. D. Dotterer.	Princeton.	Wm. H. MacDonald.	Trenton.
Thos. J. Duffield.	Asbury Park.	J. Scott MacNutt.	Orange.
Wallace T. Eakins.	New Brunswick.	L. F. Maloney, M. D.	Clifton.
Chas. P. Eaton.	Jersey City.	Alex. Marcy, M. D.	Riverton.
Frank H. Edsall, M. D.	Jersey City.	V. M. E. Marcy, M. D.	Cap. May.
Nelson Elliott, M. D.	Passaic.	T. W. Margerum.	Princeton.
R. Clifford Erickson.	Long Branch.	Elias J. Marsh, M. D.	Paterson.
Edward P. Essertier, M. D.	Hackensack.	Emery Marvel, M. D.	Atlantic City.
James A. Exton, M. D.	Arlington.	Harriet O. Mattison.	Plainfield.
Wm. T. Fales.	Glen Ridge.	Samuel D. Mayhew, M. D.	Bridgeton.
Morris Farkas, M. D.	West Orange.	John T. McClure.	Harrison.
A. S. Fell, M. D.	Trenton.	Charles McNabb.	Bound Brook.
Geo. W. Finke, M. D.	Hackensack.	John J. McDonald.	Jersey City.
Geo. W. Fithian, M. D.	Perth Amboy.	Frank B. Meeker, M. D.	Newark.
Jay G. Foose.	Montclair.	Josiah Meigh, M. D.	Bernardsville.
Morris Frank, M. D.	Bayonne.	Chas. J. Merrell.	Bound Brook.
Frank A. Frederick, Jr.	West Hoboken.	Chas. S. Mills, M. D.	Riverton.
Frank A. Frederick, Sr.	West Hoboken.	Philip Morris, C. E.	Passaic.
Richard Frederick.	Jersey City.	William Morris.	Roselle Park.
John Gaub.	Montclair.	Alfred A. Mutter, M. D.	Arlington.
Russell W. Gies.	Elizabeth.	Nels A. Nelson.	Long Branch.
A. I. Goehrig.	Trenton.	Marcus W. Newcomb, M. D.	Burlington.
Eugene H. Goldberg, M. D.	Kearny.	Paul F. Nichols.	Jersey City.
Hyman L. Goldstein, M. D.	Camden.	Stanley H. Nichols, M. D.	Long Branch.
		Budd H. Obert.	Asbury Park.

John O'Brien, Jr. Montclair.
James L. Olliff Plainfield.
Frank J. Osborne Montclair.
George T. Palmer Trenton.
Wm. B. Palmer Orange.
H. H. Farson, M. D. Mt. Holly.
H. T. Partrise, M. D. Eatontown.
Raymond S. Patterson Brunswick.
Joseph Payne, M. D. Midland Park.
Roy G. Perham, M. D. Hasbrouck Heights.
Harry H. Pettit, M. D. Ridgewood.
Carl P. Pomery Passaic.
David N. Rappoport, M. D. Philadelphia.
Talbot Reed, M. D. Atlantic City.
Louis J. Richards Elizabeth.
Edward B. Rogers, M. D. Arlington.
John N. Ryan, M. D. Collingswood.
Jos. C. Saile Passaic.
Samuel L. Salasin, M. D. Atlantic City.
Ferdinand N. Sauer Jersey City.
Wm. D. Sarre, M. D. Red Bank.
Wm. G. Schaeffer, M. D. Lakewood.
Wm. Schieur Orange.
Wm. H. Schmidt, M. D. Atlantic City.
Fred W. Sell, M. D. Rahway.
Maurice Shapiro, M. D. Bayonne.
Lewis L. Sharp, M. D. Burlington.
J. LeClere Shedaker Burlington.
Alton S. Sherman, M. D. West Orange.
Wm. H. Shipps, M. D. Bordentown.
Ellen B. Smith Belleville.
W. Brand Smith Belleville.
Wm. B. Smith, M. D. Roselle Park.
Milton L. Somers, M. D. Atlantic City.
Henry J. Spaulding, M. D. Union Hill.
Gobin Stair Jersey City.

Sanitary Inspectors of the First Class.

Frank Ackley Woodbury.
William H. Addis Plainfield.
Thomas Ainge Lansing, Mich.
Wm. C. Allen Trenton.
Henry V. Amerman Kearny.
Fred J. Anderson Hoboken.
Fritz M. Arnold Albany, N. Y.
Nathan Aronson South Orange.
Samuel Bachman Newark.
Fred S. Ball, M. D. Lakewood.
Joseph B. Bartlett Atlantic City.
Milton E. Baster Jersey City.
John H. Becker Clerks Haven.
J. Alonzo Beek, M. D. Gloucester City.
John J. Belbey Morristown.
Charles E. Bellows Bridgeton.
Alfred C. Benedict, M. D. South Orange.
Chester L. Bennett Newark.
John K. Bennett, M. D. Gloucester City.
Casper Benz Newark.
Harry B. Berry Paterson.
Chas. A. Bettighoffer Jersey City.
Wm. S. Bird Summit.
Joseph C. Bitler, M. D. Hampton.
Thomas F. Boles Newark.
Henry C. Bondage, M. D. Ridgewood.
Fred S. Bootay, M. D. Belleville.
Lewis E. Boutillier Newark.
John F. Boylan Bayonne.
Peter Brancato, M. D. Wyckoff.
Thomas M. Brennan, M. D. Jersey City.
Patrick J. Brogan Newark.
John A. Brown Glen Ridge.
Harvey S. Brown, M. D. Freehold.
Alonzo Brower Freehold.
Frank Browner Denville.
David E. Buckley West Orange.
Robert A. Buhler Belmar.
Chauncey V. Bunnell Jersey City.
S. Alton Burk Atlantic City.

Fred A. Stetter Asbury Park.
Elsmore Stiles, M. D. Bridgeton.
Fred H. Stover Boston, Mass.
Frank H. Straightfoot Montclair.
Eugene H. Sullivan Orange.
Eugene M. Syrett Newark.
George H. Taylor, M. D. Maplewood.
John G. Taylor Dover.
Walter Taylor, M. D. Jersey City.
Lewis O. TAYATOR Montclair.
Chas. S. Thompson, D. V. S. Perth Amboy.
Leon R. Thurlow Plainfield.
James A. Tobe Summit.
George T. Tracey, M. D. Beverly.
John A. C. Tull, M. D. Paterson.
Wm. Veenstra, M. D. Paterson.
Moria M. Vinton, M. D. East Orange.
Georgia G. Walton, M. D. Paterson.
Joe Wanton Carteret.
Gertrude Ward, M. D. Bloomfield.
Alex. Weir, Jr. West Hoboken.
Chester H. Wells Montclair.
Wm. A. Wescott, M. D. Berlin.
Wm. J. Whalen, M. D. Paterson.
John H. Whitcar, M. D. Ocean City.
Arthur G. Wigley New Brunswick.
Thos. W. Wilhelm Perth Amboy.
Hiram Williams Paterson.
Wm. J. Willsey, M. D. Passaic.
John S. Wilson Bridgeton.
Clarence W. Winchell Jersey City.
John H. Window, M. D. Vineland.
Fred C. Witte, M. D. Paterson.
Wm. C. Woodward, M. D. Washington, D. C.
Shirley W. Wynn, M. D. New York City.
Lenore Young, B. N. Orange.
Warren H. Young, M. D. Little Falls.

Sylvanus S. Carri Salem.
Stephen Campbell, M. D. Woodbury.
Andrew Carney, Jr. North Plainfield.
Thomas J. Carrier Newark.
Collis H. Case Plainfield.
John J. Casey Plainfield.
Matthew J. Casey Jersey City.
N. J. H. Chandler Newark.
James J. Clark Jersey City.
Mabel M. Clarke Franklin.
Edward A. Cleary Newark.
Albert Cleaver Perth Amboy.
Michael J. Clegg Newark.
Max J. Colton New Brunswick.
Obadiah S. Cole Newark.
John H. Concannon Woodbridge.
Charles F. Condit Newark.
Wm. F. Conroy Jersey City.
John D. Corrigan Newark.
Irwin C. Dakin Newark.
Wm. J. Davis Newark.
Harris Eay, M. D. Chester.
Newton DeBaum Hackensack.
Burdick Decker Newark.
Walter B. Delaney Jersey City.
Frank Denckla Plainfield.
Henry P. Dendale, M. D. Springfield.
Samuel Denton Bayonne.
M. J. Devereaux Sea Bright.
Edward J. Devitt Jersey City.
C. F. Lopez, M. D. Newark.
Charles E. Divine Newark.
Andrew J. Dolan, M. D. Jersey City.
John A. Donovan Newark.
Daniel J. Donohue, M. D. Jersey City.
Christopher J. Doran, Jr. Jersey City.
Roseluis I. Downs, M. D. Silverdale.
John J. Duff Jersey City.
Leo G. Duffy Newark.
Marine Dunn Rutherford.

Fred J. Dyer Grantwood.
H. G. Eakin Union Hill.
Wallace T. Eakins New Brunswick.
J. I. Ebels Montclair.
Edolph O. Edwards Newark.
Leonard B. Faugauer, M. D. Jersey City.
Charles W. Feeney Paterson.
Edward F. Flynn Newark.
Jay G. Foose Montclair.
Fortner R. W. Fox Newark.
Frank A. Frederick West Hoboken.
Richard Frederick Jersey City.
Gustavus E. Freideman Newark.
Fred J. Freitag Jersey City.
Edward M. French, M. D. Gibbstown.
Charles S. Gall Paterson.
John W. Garey Atlantic City.
Bayard T. Garrabrant Montclair.
Dennis E. Garvin North Plainfield.
Edward F. Gaynor Newark.
Albert E. Geissler Kearny.
Wallace M. Gill Perth Amboy.
George W. Gilmore Newark.
William H. Glueck, Jr. Trenton.
A. I. Goehrig Trenton.
Hyman I. Goldstein, M. D. Camden.
John Greaves Jersey City.
Louis H. Greenwald New Brunswick.
Ed. M. Greig Penn. Grove.
Lydia B. Griener Newark.
Ambrose J. Gulton Jersey City.
Herbert H. Haines Trenton.
Earl J. Halligan, M. D. Jersey City.
Robert J. Harbo Jersey City.
Lester J. Hamblin Asbury Park.
H. L. Harlet, M. D. Pleasantville.
John C. Harnett Jersey City.
Charles W. Harrays, M. D. Ridgewood.
Frank S. Harris Newark.
Fred C. Harris Jersey City.
Wm. H. Harrison Paterson.
H. W. Hartman, M. D. Keyport.
Eugene G. Henner, M. D. Lakewood.
William W. Heberton, M. D. South Orange.
Carl Hegstrom Perth Amboy.
Wm. H. Helm, Jr. Belmar.
Patrick J. Hennessy Jersey City.
Fred W. Hering Jersey City.
Wm. M. Heron, M. D. Lakewood.
A. Gertrude Hines Franklin.
Harry M. Hitchner Salem.
Adolph E. Hoernig Newark.
James C. Howell Jersey City.
Howard H. Huffert Newark.
Martha I. Hunt Newark.
J. H. C. Hunter Dover.
Ralph L. Huttenloch Dover.
Henry R. Inglis Asbury Park.
H. Wesley Jack Collingswood.
Richard Jackson Newark.
Wm. A. Keane Newark.
William F. Kearney, M. D. Paterson.
Charles J. Keating, M. D. Paterson.
Gerald J. Keating Jersey City.
Leavett F. Kelley Newark.
Harry E. Kelly Jersey City.
John A. Kelly Trenton.
Robert J. Kelly Jersey City.
Stewart Kidd Paterson.
John F. Kilkenny Morristown.
Jay E. Kilpatrick Montclair.
John E. Klamon Newark.
Tuné Kivett Paterson.
H. J. Klein Wood Ridge.
Henry F. Kneller Newark.
John H. Kohler Tuckerton.
William C. Kramer Linden.
John A. Kuhnmann Newark.
Clarence A. Lambert Asbury Park.
Bertram S. Lambertson Newark.
Patrick J. Lang Jersey City.
George W. Langdon Jersey City.

John A. Larkin Jersey City.
W. H. Laver, Jr. Red Bank.
Sadle H. Layton Asbury Park.
Harry F. Leeds Asbury Park.
Gilbert C. Leigh Asbury Park.
John Levine Newark.
Jos. F. Linhart South Orange.
Hillard L. Lockwood, M. D. Jersey City.
George C. Loewy Washington.
William H. Lowry, D. V. S. Paterson.
John L. Lund, M. D. Perth Amboy.
Abram A. Lydecker, M. D. Haledon.
John J. Magner, M. D. Jersey City.
Frank W. Malhallett, M. D. Jersey City.
Wm. H. Manson Dover.
Timothy U. Margerum Princeton.
Irwin Markowitz, M. D. Jersey City.
Charles F. Martin Newark.
Cullen E. Maxson, M. D. Jersey City.
Henry S. McAuley Atlantic City.
James J. McCarron Newark.
John T. McClure Harrison.
John T. McClure, Jr. Harrison.
Thorn J. McGearry, M. D. Jersey City.
Felix McGee Millburn.
Edward McGilverin, M. D. Jersey City.
Richard J. McGrath Paterson.
William McKean Paterson.
Edward F. McLarney Jersey City.
Frank J. McLaughlin, M. D. Jersey City.
Chas. H. McLaughlin Newark.
Jeremiah J. McMahon, Jr. Newark.
Charles McNeil Bound Brook.
James P. McNair Paterson.
Claudia E. McNeeney, M. D. Jersey City.
Robert W. Meeker Plainfield.
Chas. E. Messerschmidt Newark.
H. Garrett Miller, M. D. Millville.
Harry P. Moffet Newark.
John Morlot Paterson.
Phillip Morris, C. E. Passaic.
William Morris, M. D. Roselle Park.
B. E. Mosedale Bernardsville.
Elmer M. Mount, Jr., M. D. Jersey City.
Edward Mulvaney, M. D. Jersey City.
Daniel J. Murphy Newark.
Abraham J. Newman, M. D. Jersey City.
Frederick W. Nichols Newark.
George C. Nicol Jersey City.
A. C. Obergfell Atlantic City.
M. William O'Gorman, Jr. Jersey City.
Bernard F. O'Hara Jersey City.
James L. Olliff Plainfield.
John H. O'Neill, M. D. Jersey City.
John O'Neill Jersey City.
Russell Burton Opitz, Ph.D. New York City.
Eric Ordell Newark.
Cedric H. Ostrom Plainfield.
Jos. G. O'Sullivan Newark.
Richard H. L. Osthoff Bogota.
William B. Palmer Newark.
William B. Palmer Orange.
William D. Pelan Trenton.
Christian Petry Jersey City.
Peter Pirola Trenton.
Henry J. Pray Jersey City.
Elmer D. Prickeitt, M. D. Mt. Holly.
Jeremiah P. Quinlan Clifton.
J. F. Reason, M. E. Carteret.
Edward M. Reilly Montclair.
Thomas E. Reynolds Atlantic City.
James E. Rich Trenton.
Fred C. Robertson, M. D. Jersey City.
Edward S. Rogers Trenton.
Albert H. Rose Trenton.
Mary A. Ross Newark.
John E. Rowe, D. V. S. Summit.
John H. Rowland New Brunswick.
Walter A. Rowland Ventnor City.
Edward A. Ryan Newark.
Joseph C. Saile Bloomfield.

DEPARTMENT OF HEALTH.

Garrett E. St. John.....Newark	Ella Tilton.....Newark
Edward H. Salmon, M. D.....Jersey City	Edward L. Titus.....Trenton
Richard Savage.....Orange	Wm. Tompkins, M. D.....Ridgewood
George Seales.....Bahway	Thomas A. Tonge.....Paterson
Wm. C. Schlrmer.....Jersey City	J. F. Travers.....New Brunswick
Elvia Scott.....South Orange	Emil J. Tschupp.....West Hoboken
Paul Scott.....Penn's Grove	Lynford E. Tuttle, M. D. V.....Bernardsville
Timothy J. Scott.....Summit	Archiester Utter, M. D.....Paterson
B. F. Seaman, M. D.....Raritan	Albert Van Erde, M. D.....Haworth
W. J. E. Seder.....Newark	Alfred J. Van Horn.....Paterson
Myron J. Seely.....Montclair	William Van Loo.....Paterson
George R. Sees.....Atlantic City	Lloyd M. Van Ness.....New Brunswick
Leon A. Sever.....Beverly	C. H. W. Van Selver.....Burlington
Henry J. Seymour.....Roselle Park	Charles S. Voorhis.....Palmyra
George F. Shafer.....Hackensack	Burt F. Walsh.....Jersey City
J. LeClere Shedaker.....Burlington	Thomas P. Walsh.....Newark
Geo. W. Shinn.....Salern	Michael Warshawsky.....Bayonne
Ruth S. Sickler.....Burlington	James J. Waters.....New Brunswick
Percy W. Sipp.....Newark	Harry E. Watt.....New Brunswick
C. C. Slesmann.....Bayonne	James Weldon.....Jersey City
Edward A. Smith.....Newark	William A. Weber.....Orange
George N. Smith, M. D.....Roselle Park	George A. West.....Marlton
Wm. R. Smith.....Roselle Park	Joseph Whalley.....Passaic
F. Wm. Stabuber.....Trenton	Thomas D. Wilhem.....Perth Amboy
Thomas J. Steele.....Jersey City	Frank V. Wilkinson.....Newark
Louis D. Stern.....Hoboken	Fred M. Williams.....Kahway
Frederick A. Steyer.....Asbury Park	Stanley S. Williams.....Newark
Herbert A. Stine.....Plainfield	Lewis M. Willis.....Paterson
Andrew F. Stovcken.....Jersey City	John H. Winslow, M. D.....Vineland
John P. Stout, M. D.....Jersey City	Frederick E. Wilson.....Bayonne
Daniel B. Street, M. D.....Jersey City	H. S. Winterhalter.....Bayonne
Lester H. Stryker, D. V. S.....Red Bank	John Woodruff.....Perth Amboy
Dennis J. Sullivan, Jr.....Jersey City	Thomas Wood.....Campton
J. Frank Summers.....Salern	James A. Woods.....Atlantic City
Engene M. Syrett.....Montclair	Katherine E. Yellon.....Newark
Edwice E. Taber.....Long Branch	James A. Young, Jr.....Paterson
John G. Taylor.....Dover	John Young, M. D.....Paterson
Joseph Ten Broeck.....Asbury Park	Sara D. Yard.....Trenton
David R. Thompson.....Delaware City, Del.	

Sanitary Inspectors of Second Class.

Robert Ballagh.....Hackensack	Frederick J. Dyer.....Granatwood
John M. Bessel.....Pleasantville	George S. Everlit.....Linden
Frank Born Shinn, M. D.....Hamburg	Geo. Shinn, M. D.....Linden
John C. Clayton, M. D.....Freehold	Franklin P. Vanlier.....Woodstown
Joseph J. Chickenger.....Irvington	George Wildman.....Belmar
Charles Cunningham, M. D.....Hammoncton	

Sanitary Inspectors of Third Class.

John J. Bennett.....Belleville	Robert A. Hlmer.....Woodbridge
Charles Butcher, M. D.....Helsleville	Adrian Homnell.....Asbury Park
Joseph G. Coleman, M. D.....Hamburg	Emerson Hornstra.....Clifton
Charles Covert.....Leesburg	Fred D. Hurley.....Asbury Park
Ellis W. Crater, M. D.....Oceanport	David Jamieson.....Glooucester City
William B. Davis.....Morris Plains	Ter A. Deegan.....Ocean Grove
Robert Dickson.....Fair Haven	Stanley H. Ljon.....Morris Plains
George W. Earl.....Mt. Taber	Henry Moser.....North Bergen
Wm. Everhart.....South Plainfield	Lewis E. Potter.....Woodbridge
J. N. Fowler.....Port Norris	William B. Smith.....Belleville

Meat Inspectors.

Samuel Bruce, D. V. S.....Philadelphia, Pa.	G. F. Harker, D. V. S.....Trenton
Wilhet H. Cooper, D. V. S.....Trenton	Richard W. Hewitt, D. V. S.....Camden
Chas. Edelhauer.....Newark	Albert T. Sellers, D. V. S.....Camden

Milk and Dairy Inspectors.

Herman C. Alberts.....Jersey City	Herman H. North.....Jersey City
Matthew P. Casey.....Jersey City	Ansel D. Parker.....Delaware, N. J.
Emmet E. Ferguson.....Sussex	Clarence H. Rider.....Jersey City
Richard Jackson.....Newark	Edward S. Rogers.....Trenton
Herbert H. Haines.....Trenton	Samuel J. Shultise, Jr.....New Brunswick
W. Wesley Hubbard.....Jersey City	Harold E. Stearns, D. V. S.....Kearny
Henry F. Kneller.....Newark	Thomas J. Steele.....Jersey City
J. Wesley Maple.....Trenton	Thos. A. Tonge.....Paterson
Arthur McRoberts.....Jersey City	George D. White, Jr.....Newark
David E. Morgan.....Newark	

Milk and Food Inspectors.

Harry P. Cassidy.....Philadelphia, Pa.	Harold Mellen.....Hoboken
Louis J. Levy.....Hoboken	Abe L. Teifeld.....Hoboken

Food and Drug Inspectors.

Louis G. Abell.....Elizabeth	Henry C. Handleman.....Caldwell
Chester L. Bennet.....Newark	Adolph E. Hoering.....Newark
Lillian G. Blumenau.....Newark	Jerome Kahn.....New Brunswick
Martin L. Conley.....Passaic	Edwin J. Kaiser.....Newark
James E. Conolly.....Elizabeth	Henry F. Kneller.....Newark
John J. Coughlin.....Newark	John C. Prosch, Ph.D.....Newark
James W. Culbert.....Newark	Max H. Siegel.....Newark
Adolph O. Elsassser.....Newark	Albert Spies.....Newark
Abe Halperin.....Newark	Thomas A. Tonge.....Paterson

Plumbing Inspectors.

R. C. Adamson, Jr.....Long Branch	Charles R. Ellis.....Rutherford
Vincent Ahlemeyer.....Jersey City	Alfred T. England.....Haddonfield
Gustave A. Albex.....Caldwell	David Eastwistle.....Jersey City
Henry J. Babcock.....Caldwell	Robert Ewans.....Guttenberg
Richard T. Bagg.....Vineland	Robert J. Fair.....Gloucester City
Wm. F. Bailey.....Jersey City	Charles W. Fenny.....Paterson
G. E. Bangs.....West Hoboken	Hubbard Ferguson.....Ridgewood
Wm. C. Banta.....Ridgewood	Frank H. Fitzgeorge.....Trenton
James Barnard.....Trenton	Joseph Fleming.....West Orange
Lewis Barnett.....Millville	Henry B. Francis.....Camden
Wm. C. Beuler.....Bergenfield	Howard Frey.....Red Bank
Edward Beck.....North Bergen	James J. Garland, Jr.....Perth Amboy
Hugo W. Roberts.....Elizabeth	Bayard T. Garabrant.....Montclair
P. W. Borrows.....Ridgedale Park	Napoleon Gomm.....Englewood
Thos. W. Bradley.....Edgewater	Walter E. Graham.....Vineland
Conrad Brocking.....West York	William H. Graham.....Verona
William F. Brode.....Atlantic City	George G. Haines.....Ventnor
L. Hopkins Brooks.....Lake Como	Adam J. Hammer.....Elizabeth
Herbert A. Buzzard.....Audubon	James T. G. Hand.....Ventnor
John Campbell.....Paterson	August Handley.....West Hoboken
John L. Campbell.....Hammoncton	Bernard M. Hanley.....Jersey City
Cornelius V. Carty.....East Rutherford	Thomas P. Harris.....Orange
Anthony P. Clark.....Nutley	Michael H. Healey.....Lyndhurst
Thomas D. Clark.....Woodbury	Thomas P. Healy.....Verona
Joseph P. Cochran.....Ventnor	James F. Heffery.....New Brunswick
Benjamin M. Cohen.....Newark	Wm. E. Heim, Jr.....Belmar
George M. Crawler, Jr.....Newark	George Helmer.....Rutherford
Edwin J. Craythorn.....Beverly	Patrick J. Hennessy.....Jersey City
Alexander Creamer.....Corteseville	Fred Henniger.....Jersey City
Francis Cumsiskey.....Guttenberg	Henry Herman.....Passaic
Newton DeBaun.....Hackensack	Thos. V. Higgins.....Jersey City
Peter A. Deegan.....Newark	Conrad C. Hofmeier.....West Hoboken
Irving Demarest.....Westwood	G. Fred Holtje.....Town of Union
Herbert L. de Nourie.....East Orange	Joseph F. Hourigan.....Hoboken
J. Elmer Deppa.....Newark	Maurice Huckman.....Newark
Conrad Deuchler.....Newark	Arthur A. Hulise.....South Amboy
Luke J. Derling.....Elizabeth	Joseph A. Hurley.....Guttenberg
Charles J. Digum.....West Orange	A. E. Irwin.....Atlantic Highlands
Waldburg C. Dobbins.....Belmar	John E. Joyce.....Newark
Edward F. Doran.....Jersey City	James A. Judge.....Jersey City
William J. Dorney.....Orange	Archibald A. Kafar, Jr.....Bordentown
Thomas J. Dowling.....Newark	Martin D. Karl.....Garfield
Martin V. Driscoll.....Jersey City	Joseph E. Keeton.....East Orange
Edward A. Dugan.....Gloucester City	Edward J. Kelly.....Jersey City
Margie Dunn.....Rutherford	Leavett F. Kelly.....Newark
Frederick J. Dyer.....Granatwood	Wm. J. Kelton.....Audubon
Marcus J. Elsie.....Newark	John H. Kerr.....Perth Amboy
David M. Elin.....Newark	James H. Kiernan.....Jersey City

Frank S. Kierlitt.....	Passaic.	Alfred B. Rooney.....	Jersey City.
John F. Kilkenny.....	Morrisstown.	Anthony S. Ruddy.....	East Orange.
John N. Krauss.....	Leonia.	Patrick J. Ryan.....	Wallington.
August C. Krieger.....	Town of Union	Anthony H. Sachs.....	Carlstadt.
Jacob Kull.....	West Orange.	Michael Saul.....	Newark.
Charles Kunz.....	Riverside.	Edgar A. Sceurman.....	Perth Amboy.
W. George Lambert.....	East Orange.	George J. Scheurle.....	Weehawken.
George W. Lang.....	Newark.	Roy J. Schleich.....	Clifton.
Eugene Lau.....	Newark.	Wm. A. Scher.....	Palisades Park.
W. J. Large.....	Vineland.	George F. Shafer.....	Hackensack.
Joseph P. Leahy.....	Jersey City.	Michael A. Shanshan.....	Jersey City.
Joseph Lendner.....	West New York.	Charles F. Shaw.....	Collingswood.
Tunis Lool.....	Loth.	John H. Singer.....	Pitman.
Jo-seph M. Loeffler.....	Newark.	Harry R. Skimmerman.....	Highland Park.
Warren Mack.....	East Orange.	R. LeRoy Skillman.....	Newark.
Matthew P. Malon.....	Jersey City.	Clarence B. Slack.....	Trenton.
William Maloney.....	Jersey City.	Henry A. W. Smith.....	Ocean City.
Louis Marengli.....	Roselle Park.	Harold L. Snyder.....	Camden.
James A. Marnell.....	Hoboken.	Joseph Sonnenberg.....	Irrington.
Howard H. Martindell.....	Trenton.	John Specht.....	Newark.
Herbert J. Mason.....	Vineland.	William F. Specht, Jr.....	Atlantic City.
Henry F. Metzger.....	Jersey City.	H. H. Sooy.....	Atlantic City.
Andrew McGookin, Jr.....	Newark.	Charles Steller.....	Town of Union.
Robert A. McGuire.....	Perth Amboy.	G. H. Soult.....	Jersey City.
George F. McIntyre.....	Hammonton.	Andrew F. Stoveken.....	Newark.
Harry L. McClure.....	Hammonton.	Edward A. Sullivan.....	Newark.
James McTague.....	Newark.	Fred. Taylor.....	East Rutherford.
Frank Miller.....	Newark.	Charles Turkowak.....	West New York.
Patrick J. Monaghan.....	Newark.	Thomas Vail.....	Newark.
William S. Moore.....	Jersey City.	Wm. P. VanKirk.....	Beverly.
Robert F. Moran.....	Newark.	Geo. W. VanVerrick.....	Clifton.
George M. Mortenson.....	South Amboy.	Frank V. Verhoek.....	Round Brook.
James F. Mulhall.....	East Orange.	Frank Vermilise.....	Irrington.
Charles Munzing.....	Jersey City.	Robert J. Walker, Jr.....	Atlantic City.
Edward F. Murphy.....	North Bergen.	Thomas Walton.....	Camden.
Robert B. Murphy.....	Ridgewood.	Michael Warrhowsky.....	Bayonne.
Frederick W. Nichols.....	Newark.	John J. Waters.....	Jersey City.
John Nolan.....	Bayonne.	George S. Webb.....	Wildwood.
George H. Northam.....	Long Branch.	James C. Wegham.....	Wildwood.
Joseph J. Norton.....	East Orange.	Alex. Weir, Jr.....	West Hoboken.
Richard J. O'Crowley, Jr.....	Newark.	C. H. Weller.....	Hightstown.
John O'Shea.....	West New York.	Charles F. West.....	GloUCESTER City.
Richard W. L. Osthoff.....	Bokota.	Joseph Whalley.....	Passaic.
Hugh F. Parle.....	Jersey City.	Charles M. Whelan.....	Trenton.
Raymond W. Pettibone.....	Island Heights.	Jason H. Wildrick.....	Washington.
Samuel Powell.....	Roselle Park.	Levie H. Williams.....	East Orange.
Charles Reeve.....	Long Branch.	Charles S. Willmot.....	Haddon Heights.
Arthur G. Reeves.....	Cape May City.	John Wodder.....	Perth Amboy.
John B. Reeves.....	Haddon Heights.	Harry A. Wilkins.....	Newark.
Bernards B. Reller.....	New Brunswick.	Louis W. Ziesler.....	Ridgewood Park.
Rudolph Riemenschneider.....	Town of Union.	William G. Ziegler.....	West Hoboken.
Edward A. Rogers.....	Trenton.		

Sewage Plant Operators.

Elijah E. Batts.....	Avalon.	William Kerr.....	North Arlington.
Theodore Bellis.....	Flemington.	Robert W. Lindsay.....	Lyndhurst.
Vernon W. Blanchard.....	Dover.	John W. Norton.....	Maywood.
Raymond C. Case.....	Oaklyn.	Richard H. L. Osthoff.....	Bokota.
Anthony Chiodo.....	Lodi.	Ernest H. Priest.....	Metuchen.
C. W. Collins.....	Westfield.	Walter J. Pumpy.....	Trenton.
Reinhold W. Daust.....	Highlands.	John T. Reichard.....	Stone Harbor.
George H. Davis.....	Wildwood Crest.	Frank Rippler.....	Neshanic.
Fred. J. Dyer.....	Cliffside Park.	John H. Simmerman.....	Pitman.
William Edgerbranch.....	East Rutherford.	Ernest W. Smille.....	Piscataway.
Charles D. Flynn.....	New Brunswick.	Chester S. Smith.....	Avoncliff.
William Foley.....	Ridgewood.	G. Cleveland Stanton.....	Avon.
John Garis.....	Stone Harbor.	Harry Stark.....	Leonia.
Clarence E. Jack.....	Wayne.	Walter Wittemann.....	Hasbrouck Heights.
Allan W. James.....	Keilworth.	Henry Young.....	River Edge.

Water Plant Operators.

Arthur G. Faul.....	Keansburg.	John L. Radcliffe.....	Elizabeth.
George B. Greenwald.....	Lumberton.	B. Ney Ridgway.....	Piscataway.
W. M. Hedden.....	Dover.	George J. Ruckert.....	High Bridge.
Harold T. Hinchman.....	Medford.	Wesley Sheppard.....	Salem.
William A. Kelly.....	Long Branch.	Harry Taylor.....	Freshtown.
Edwin F. Langford.....	Paterson.	C. E. Tilton.....	Phillipsburg.
A. T. McMichael.....	South Amboy.		

List of Sanitary Districts.

CITIES.

Absecon, Atlantic county. E. H. Madden, President; Samuel Johnson, Secretary; Dr. C. C. Allen, Inspector.

Asbury Park, Monmouth county. Thomas J. Winckler, Director of Public Safety; B. H. Ober, Health Officer and Registrar.

Atlantic City, Atlantic County. Hon. Edw. L. Bader, Mayor; Samuel L. Salasin, M. D., Secretary.

Bayonne, Hudson county. W. Homer Axford, M. D., President; Morris Brodman, Secretary and Reporting Officer; W. W. Brooke, M. D., Health Officer.

Beverly, Burlington county. Jos. E. Hammell, President; A. Y. Woolston, Secretary and Registrar; W. P. Van Kirk, Inspector.

Bordentown, Burlington county. Jos. R. Malone, Secretary; C. D. Mendenhall, Health Officer; A. P. Thorne, Inspector.

Bridgeton, Cumberland county. Encs Paullin, President; Sidney O. Williams, Secretary; Chas. E. Bellows, Inspector.

Burlington, Burlington county. William R. Schuyler, President; J. Le Clere Shedaker, Secretary and Health Officer.

Camden, Camden county. Harry F. Bushey, M. D., President; Eugene B. Roberts, Secretary; John F. Leavitt, M. D., Health Officer.

Cape May City, Cape May county. John T. Hewitt, President; Walter Porter, Secretary; V. M. D. Marcy, Health Officer; Arthur C. Reeves, Inspector.

Clifton City, Passaic county. A. P. Rosenkrans, President; W. A. Miller, Secretary and Registrar; J. P. Quinlan, Inspector.

East Orange, Essex county. Dr. C. P. Moulton, President; T. Dudley Ballinger, Secretary and Health Officer.

Egg Harbor City, Atlantic county. Henry M. Cressman, President; Wm. Morgenweck, Secretary and Reporting Officer.

Elizabeth, Union county. P. B. Bunting, M. D., President; Louis J. Richards, Reporting Officer and Health Officer.

Englewood, Bergen county. Walter Phillips, President; Benjamin Woodruff, Secretary; John A. Munson, Inspector.

GloUCESTER City, Camden county. Harlen S. Miner, President; H. M. Black, Secretary; Dr. J. A. Beck, Health Officer and Reporting Officer.

Hoboken, Hudson county. Patrick R. Griffin, President; John Berocelo, Clerk and Registrar; William Lundrian, Reporting Officer.

Jersey City, Hudson county. Frank Hague, Director; J. J. Craven, Health Officer and Reporting Officer; John Harnett, Inspector.

Lambertville City, Hunterdon county. Chas. Mathews, President; I. L. Smith, Clerk and Registrar; C. C. B. John, Inspector.

Long Branch, Monmouth county. Charles Rosencrans, President; R. C. Erickson, Secretary.

Margate City, Atlantic county. A. Gertzen, Jr., Secretary.

Millville City, Cumberland county. Chas. P. Estbell, President; H. L. Thomas, Secretary; Frank Bullock, Reporting Officer and Registrar.

Newark, Essex county. William J. Buehler, Clerk and Reporting Officer; Chas. V. Craster, M. D., Health Officer.

New Brunswick, Middlesex county. Wm. C. Jacques, Commissioner; E. I. Cronk, M. D., Reporting Officer and Health Officer.

Northfield City, Atlantic county. Wm. Oxley, President; A. R. Vickers, Secretary and Registrar.

Orange, Essex county. Leonora Young, Health Officer.

Passaic, Passaic county. John H. McGuire, President; Virginia Hand, Secretary; John N. Ryan, M. D., Health Officer.

Paterson, Passaic county. James J. Maher, President; Isaac S. Bentley, Secretary; J. Alexander Browne, M. D., Health Officer and Reporting Officer.

Perth Amboy, Middlesex county. Dr. M. F. Urbanski, President; Anna Burkard, Clerk; Dr. C. S. Thompson, Health Officer.

Plainfield, Union county. Stephen H. Voorhees, President; Dr. Edward S. Kraus, Secretary; N. J. Hanch Candler, Reporting Officer and Health Officer.

Fort Republic City, Atlantic county. Jos. S. Brown, President; J. H. Champion, Secretary and Reporting Officer.

Rahway, Union county. Wm. H. Randolph, President; Fred M. Williams, Secretary and Health Officer.
 Salem, Gloucester county. Chas. E. Markler, President; Geo. Kirk, Secretary; Harry M. Hitchner, Reporting Officer.
 Sea Isle City, Cape May county. William J. Sheilan, President; Claude J. Town, Secretary.
 Somers Point, Atlantic county. Geo. Goll, President; Walter A. Smith, Secretary.
 South Amboy, Middlesex county. Thomas Looley, President; John S. Tomaszowski, Secretary; William J. Nagle, Registrar; Nicholas Hawley, Inspector.
 Summit, Union county. Burton L. Boye, President; Wm. S. Bird, Secretary and Registrar.
 Trenton, Mercer county. A. S. Fell, M. D., Health Officer; Howard H. Ely, Registrar; Wm. C. Allen, Inspector.
 Ventnor City, Atlantic county. Dr. Thomas Youngman, President; James G. Scull, Secretary; Walter A. Rulon, Health Officer.
 Wildwood City, Cape May county. Benj. C. Ingersoll, Acting Health Officer.
 Woodbury, Gloucester county. Alfred Twells, President; W. E. Kent, Secretary; Frank Ackler, Sanitary Inspector.

BOROUGHES.

Allendale, Bergen county. G. M. Parkhurst, M. D., President; C. S. Roswell, Secretary; A. B. Sullivan, Inspector.
 Allenhurst, Monmouth county. T. C. Cottrell, President; Chas. E. King, Secretary and Registrar.
 Allentown, Monmouth county. Chas. A. Spaulding, President; M. B. Buckalew, Secretary; Harry Disbrow, Registrar; Geo. Wilbur, Inspector.
 Alpha, Warren county. Dr. Wm. H. Albright, President; Cleveland M. Iben, Secretary.
 Alpine, Bergen county. Joseph M. Garvey, President; Robert H. Monroe, Secretary.
 Andover, Sussex county. S. S. Wills, President; Wm. E. Wilson, Secretary.
 Atlantic Highlands, Monmouth county. Mathew Mortenson, President; Edgar C. Cook, Secretary.
 Audubon, Camden county. Dr. W. H. Haines, President; Horace H. Brown, Clerk and Registrar; Wm. J. Kelton, Inspector.
 Avalon, Cape May county. Geo. H. Jackson, Clerk and Registrar.
 Avon, Monmouth county. Leroy Shield, Mayor; C. Cleveland Stanton, Clerk.
 Barnegat City, Ocean county. Wm. H. Bailey, Secretary.
 Barrington, Camden county. Wm. Havens, President; John J. Frank, Secretary and Registrar.
 Bay Head, Ocean county. R. H. Metcalf, President; Julius Foster, Jr., Secretary and Registrar.
 Beach Haven, Ocean county. Walter C. Sharp, President; Dr. Herbert Willis, Secretary and Health Officer.
 Beachwood, Ocean county. Frank W. Goodrich, Secretary.
 Belmar, Monmouth county. Jacob Rosenfeld, President; Fred V. Thompson, M. D., Clerk and Registrar; Harold Hoffman, Sanitary Inspector.
 Bergenfield, Bergen county. Frank Rehl, President; Henry J. Brock, Secretary; W. Regan, Registrar.
 Bloomingdale, Passaic county. William Tice, President; James L. Clove, Secretary; Edward E. Bell, Registrar.
 Bogota, Bergen county. John T. Black, President; Harlon P. Ross, Secretary; Dr. G. L. Edwards, Inspector.
 Bound Brook, Somerset county. H. S. Smalley, Jr., President; John W. Reed, Secretary; Chas. McNabb, Health Officer and Inspector.
 Bradley Beach, Monmouth county. Frank C. Borden, Jr., Mayor; Fred Reichey, Clerk and Registrar; Geo. B. Bostick, Inspector.
 Branchville, Sussex county. A. A. Ramson, President; Wm. G. Harding, Registrar.
 Brielle, Monmouth county. Melville K. Packer, President; H. N. Folk, Secretary.
 Butler, Morris county. Edward Bodinere, President; Allan Looker, Secretary and Registrar.
 Caldwell, Essex county. Richard J. Waugh, President; A. E. Broadbent, Secretary; Wilson Husk, Assistant Health Officer.
 Califon, Hunterdon county. Lester M. Apgar, President; John W. Beatty, Clerk and Registrar; Dr. Thomas R. Adams, Inspector.
 Cape May Point, Cape May county. Washington Le Noir, President; Frank W. Hughes, Secretary; John T. Huff, Health Officer.
 Carlsbad, Bergen county. W. Lehman, President; Oscar M. Macher, Secretary; Anthony Sachs, Inspector.
 Chatham, Morris county. Henry M. Read, President; J. Thomas Scott, Secretary; Geo. L. Kelley, Inspector.

Chesterbury, Camden county. Harry Horton, President; J. T. Humphries, Clerk.
 Clayton, Gloucester county. Dr. G. C. Brown, President; C. F. Fiesler, Secretary and Registrar.
 Cliffside Park, Bergen county. Robert Cadden, President; O. R. McElwain, Secretary and Registrar.
 Clinton, Hunterdon county. H. S. Leatherman, President; Geo. S. Hall, Clerk and Reporting Officer.
 Closter, Bergen county. J. M. Haring, President; Alfred Anderson, Secretary and Registrar.
 Collingswood, Camden county. Geo. B. Whidder, President; C. C. Powell, Secretary and Registrar.
 Crosskill, Bergen county. John F. Meyer, President; H. R. Le Manuais, Secretary and Registrar.
 Deal, Monmouth county. Robert Offenbach, President; Michael F. Weir, Secretary.
 Demarest, Bergen county. Watson J. Mosler, President; Geo. V. Morton, Secretary and Registrar.
 Dumont, Bergen county. F. W. Patterson, President; Henry J. Borach, Secretary and Registrar; Geo. F. Shafer, Inspector.
 Dunellen, Middlesex county. Albert J. Meyers, President; Alfred W. Day, Secretary.
 East Atlantic City, Atlantic county. E. R. Smith, Registrar.
 East Newark, Hudson county. Thomas L. Callen, President; Jos. A. McDonald, Clerk; Frank Smith, Registrar; William Gilchrist, Health Officer; John Keenan, Inspector.
 East Paterson, Bergen county. John Cooper, President; Wm. S. Childs, Secretary and Registrar; Dr. John J. Ritter, Health Officer.
 East Rutherford, Bergen county. Oscar Fortenback, President; Wm. Eigenranch, Secretary and Registrar; Dr. G. D. Brooks, Health Officer; Fred Taylor, Sanitary Inspector.
 Edgewater, Bergen county. Louis J. Scheld, President; Arthur J. Carleton, Secretary and Registrar; Geo. W. Allison, Health Officer.
 Elmer, Salem county. H. J. Conover, President; Irvine R. Wentzell, Secretary and Reporting Officer.
 Emerson, Bergen county. Chas. F. Hopper, President; Arthur J. Sharpe, Secretary and Reporting Officer; Geo. Schaffer, Health Officer and Inspector.
 Englewood Cliffs, Bergen county. Dr. Christian E. G. Forst, President; H. S. Enger, Secretary and Registrar; G. F. Shafer, Inspector.
 Englishtown, Monmouth county. J. A. Lambert, President; S. H. Mount, Secretary; S. B. Ely, Registrar; W. E. Anderson, M. D., Health Officer.
 Essex Fells, Essex county. Earle L. Legg, Secretary and Registrar.
 Fair Haven, Monmouth county. Wm. H. Lawes, Jr., President; Wm. Curchin, Registrar and Reporting Officer.
 Fairview, Bergen county. Wm. Wingerath, President; E. R. Greenhalgh, Secretary and Registrar; Fred Dyer, Inspector.
 Fanwood, Union county. Dr. F. W. Wescott, President; Edith M. Lidgate, Secretary.
 Far Hills, Somerset county. No report.
 Farmingdale, Monmouth county. John Cook, President; Wm. H. Thompson, Secretary; Dr. John B. Boyd, Inspector.
 Fieldsboro, Burlington county. Frank Perry, President; W. H. Errickson, Secretary and Registrar.
 Flemington, Hunterdon county. Geo. Webster, President; Barclay S. Fuhrmann, Secretary.
 Florham Park, Morris county. Chas. H. Gerring, President; Wm. V. Tunis, Secretary and Registrar.
 Folsom, Atlantic county. Louis Schulze, Secretary; Dr. Chas. Cunningham, Health Officer.
 Fort Lee, Bergen county. Edward Kelder, President; Joseph Cook, Secretary; Fred J. Dyer, Health Officer.
 Franklin, Sussex county. Dr. C. M. Denning, President; James R. Stephens, Secretary and Registrar; Mabel M. Clarke (Mrs.), Inspector.
 Franktown, Hunterdon county. Chas. Williamson, President; E. J. Stryker, Secretary; Hugh M. Sinclair, Health Inspector.
 Garfield, Bergen county. Dr. E. Caslin, President; Louis Heinzmann, Secretary; Dr. Chas. E. Bleasby, Reporting Officer and Health Officer.
 Garwood, Union county. J. A. Wanzler, President; Louis M. Wenzel, Secretary; Wm. T. Frost, Registrar; William Morris, Inspector.
 Glassboro, Gloucester county. F. P. Supplee, President; Samuel D. Beeket, Secretary and Registrar.
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 Glen Ridge, Essex county. Louis E. Thompson, President; John A. Brown, Secretary.

Glen Rock, Bergen county. A. H. Magnussen, President; G. H. Lane, Clerk; Dr. Joseph Payne, Health Officer.

Haddonfield, Camden county. J. K. Lippincott, Jr., President; Allen Clymer, Registrar.

Haddon Heights, Camden county. A. T. Eaton, President and Inspector; Edw. Jenks, Secretary; E. N. C. Davis, Registrar.

Haledon, Passaic county. John W. Grimshaw, President; Thos. B. Kegelman, Clerk and Registrar; A. A. Lydecker, Health Officer and Inspector.

Hamburg, Sussex county. Edward L. Stanback, President; Frank E. Smith, Secretary.

Hampton, Hunterdon county. Fred G. Byerlee, President; H. J. Dalrymple, Secretary.

Harrington Park, Bergen county. G. A. Massack, President; H. D. Chapman, Secretary; Dr. Chas. A. Richardson, Inspector.

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Hasbrouck Heights, Bergen county. Martin H. Jackson, President; Wm. J. Schwelckert, Secretary and Registrar; Roy G. Perham, M. D., Health Officer; D. M. Davidson, Inspector.

Haworth, Bergen county. Charles S. Forbes, President; I. M. Clark, Secretary and Registrar.

Hawthorne, Passaic county. P. A. Wieland, President; Edward F. Keefe, Secretary; Albert Van Erde, M. D., Inspector; Joseph Jewett, Assistant Inspector.

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High Bridge, Hunterdon county. W. H. Hendrickson, President; R. Somerville, Secretary; C. A. Longley, Registrar; Dr. Rufe, Medical Examiner.

Highland Park, Middlesex county. A. P. Daire, President; D. H. McCann, Secretary and Reporting Officer.

Highlands, Monmouth county. Wm. H. Belge, President; W. M. Hennessy, Secretary and Registrar; Jacob S. Hoffman, Inspector.

Hightstown, Mercer county. D. B. Day, President; G. Allen Ely, Secretary; Dr. Wm. L. Wilbur, Reporting Officer and Inspector.

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Hopewell, Mercer county. Dr. Robt. P. Miller, President; Fred I. Sutphen, Secretary and Registrar.

Island Heights, Ocean county. Allie B. Ayers, President; W. T. McKalg, Secretary and Registrar.

Jamesburg, Middlesex county. J. B. Pownall, President; J. A. Thompson, Secretary; J. L. Suydam, Inspector.

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Kenilworth, Union county. Mrs. T. J. Wilkinson, President; Paul H. Van Der Zee, Secretary; Alex. Vardalls, Inspector.

Keypert, Monmouth county. S. H. Casidy, M. D., President, Reporting Officer and Inspector; C. F. Tutthill, Secretary.

Laurel Springs, Camden county. Dr. Chester Bradley, President; M. A. Wetherill, Secretary; C. J. Clark, Reporting Officer and Registrar.

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Linden, Union county. J. L. Neubauer, President; J. M. Capraun, Secretary and Registrar.

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Little Ferry, Bergen county. Henry Bergman, Sr., President; Emil Danacher, Secretary; Carl Lancker, Reporting Officer and Inspector.

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Mendham, Morris county. G. S. De Groot, M. D., President; G. S. Thompson, Secretary and Registrar.

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Metuchen, Middlesex county. H. F. Smith, President; Chas. P. Hull, Secretary and Registrar.

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Milwata, Middlesex county. C. W. Waddington, President; Henry A. Christ, Secretary; R. A. Harkins, Registrar.

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Montvale, Bergen county. August F. Girard, President; Walter Wellman, Secretary and Registrar; Geo. F. Shafer, Inspector.

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Norwood, Bergen county. John Deffer, President; Clifton Demarest, Secretary and Registrar.

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Ocean City, Cape May county. T. Lee Adams, Health Officer.

Ocean Gate, Ocean county. H. D. Black, Reporting Officer.

Ocean Grove, Monmouth county. Titan Summers, President; C. H. Tucker, Secretary; Frank B. Smith, Reporting Officer.

Oceanport, Monmouth county. R. Cook, President; M. C. Russell, Secretary.

Ogdensburg, Sussex county. Francis J. Kaunaley, President; Frank Gregory, Secretary; Harris Day, M. D., Reporting Officer.

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Oradell, Bergen county. J.-D. Hoffmire, President; G. R. Spalding, Secretary.

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Paulsboro, Gloucester county. Mrs. Herman Hohlweg, President; S. Walter Loucks, Clerk and Registrar.

Pasack, Somerset county. W. D. Vanderbeck, President; F. H. Ludlow, Clerk and Reporting Officer.

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Pennington, Mercer county. Dr. William R. Little, President; Chas. M. Titus, Clerk; Frank A. Blackwell, Inspector.

Penn's Grove, Salem county. Samuel J. Hurff, President; Wm. F. Yeager, Secretary and Registrar.

Pitman, Gloucester county. David H. Schock, President; Albert V. Peterson, Secretary and Registrar.

Pleasantville, Atlantic county. R. A. Cole, President; Jesse Bowen, Secretary; Neil D. Campbell, Reporting Officer; Dr. W. J. Hudson, Inspector.

Point Pleasant Beach, Ocean county. Dr. Chas. D. Ripley, President; H. C. Shoemaker, Secretary and Registrar; Mrs. E. E. Johnson, Inspector.

Point Pleasant, Ocean county. Abram W. Johnson, President; Peter R. Erickson, Secretary and Registrar.

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Princeton, Mercer county. Ulric Dahlgren, President; W. B. Howe, Secretary; William C. Blake, Registrar and Health Officer.

Prospect Park, Passaic county. Frank Duvalois, President; Lambertus Touw, Secretary and Registrar.

Ramsey, Passaic county. F. Wm. Gertzen, President; H. P. Farvia, Clerk and Reporting Officer.

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Ridgefield, Bergen county. Chas. H. Ahearns, Jr., President; Victor Ansel, Secretary.

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Riverside, Bergen county. Homer Hasbrouck, President; W. L. Reilb, Secretary; G. F. Shafer, Inspector.

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Rockaway, Morris county. James H. Bolithe, Mayor; Wm. A. Parleman, Clerk and Reporting Officer; John H. Rogers, Inspector.

Rocky Hill, Somerset county. C. R. Baldwin, President; Randall Wilson, Secretary and Registrar.

Rosevelt, Middlesex county. Edward J. Hell, President; R. Joseph Murphy, Clerk; Frank Born, Reporting Officer; C. C. Sheridan, Registrar.

Roseland, Essex county. H. G. Rinkle, President; E. A. Williams, Secretary and Registrar.

Roselle, Union county. Wm. P. Howe, President; Jos. E. Greene, Secretary; Wm. Morris, Registrar and Health Officer.

Roselle Park, Union county. John W. Wirth, President; Chas. E. Renton, Secretary and Registrar.

Rumson, Monmouth county. Geo. H. Churchill, President; Jas. E. Bogle, Secretary; Dewitt Scott, Inspector.

Rutherford, Bergen county. G. L. Barrows, President; John De Groot, Secretary; Marine Dunn, Reporting Officer.

Saddle River, Bergen county. J. C. Ware, President and Health Officer; Russel G. Ackerman, Secretary.

Bayerville, Middlesex county. Edwin Cordes, President; P. F. McCutcheon, Secretary; Hugh Singleton, Inspector.

Sea Bright, Monmouth county. Walter Reed, President; M. J. Devereaux, Secretary and Registrar; Abram Embly, Inspector.

Seaside Heights, Ocean county. Jos. G. Endres, President, Clerk and Reporting Officer.

Seaside Park, Ocean county. Aaron Wilbert, Reporting Officer and Registrar.

Secaucus, Hudson county. Thomas Sprouls, President; Gerson Lowenstein, Clerk; J. Werner, Inspector.

Sea Girt, Monmouth county. Eleanor Spencer, President; Edilphia Cranmer, Secretary and Registrar; Chas. H. Roberts, Inspector.

Somerville, Somerset county. Thomas H. Flynn, President; Wm. R. Sutphin, Secretary and Reporting Officer; Geo. D. Falten, Inspector.

South Bound Brook, Somerset county. Dr. J. T. Robbins, President; T. L. Waters, Secretary and Reporting Officer.

South Cape May, Cape May county. E. B. Martin, Secretary and Reporting Officer.

South River, Middlesex county. Ralph J. Davenport, President; Wm. H. Kline, Clerk; John W. Ledvon, Reporting Officer and Registrar; Wm. B. Peterson, Inspector.

Spotswood, Middlesex county. James Beebee, President; Phineas M. Bowne, Secretary, Registrar and Health Officer.

Spring Lake, Monmouth county. Dr. S. R. Knight, President; D. H. Hills, Secretary.

Stanhope, Sussex county. Peter J. Kelly, President; J. J. Shaw, Secretary.

Stockton, Hunterdon county. Col. H. M. Reading, President; Wm. P. Mason, Secretary; P. A. Sheppard, Reporting Officer.

Stone Harbor, Cape May county. Edw. T. Frier, Clerk.

Surf City, Ocean county. H. L. Lukens, Borough Clerk.

Sussex, Sussex county. Dr. H. D. Gaasbeck, President; F. B. Ewald, Secretary and Reporting Officer; L. J. Fuller, Inspector.

Swedesboro, Gloucester county. Wm. F. Denny, President; W. H. Rieger, Secretary and Registrar; Dr. V. E. De Groot, Inspector.

Tavistock, Camden county.

Tenafly, Bergen county. Dr. J. B. Lansing, President; Herman D. Hensel, Secretary and Reporting Officer.

Teterboro, Bergen county. H. Trossbach, Registrar.

Totowa, Passaic county. Ernest Marrell, Secretary and Registrar; Wm. Veenstra, M. D., Health Officer.

Tuckerton, Ocean county. James E. Otis, President; John H. Kohler, Secretary and Reporting Officer.

Upper Saddle River, Bergen county. Carl Ibsen, President; August Weiss, Secretary and Inspector.

Verona, Essex county. Judson W. Parker, President; Louis C. Miller, Secretary; T. Brooks, Registrar.

Vineland, Cumberland county. Louis Basso, President; Fred Koetz, Secretary and Registrar.

Walidwick, Bergen county. L. M. Terhune, President; D. W. Bush, Secretary; D. W. Keefe, Jr., Reporting Officer and Registrar.

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Wanaque, Passaic county. Dr. D. N. Shippee, President; Joseph C. Beam, Secretary.

Washington, Warren county. Dr. F. J. La Riew, President; R. B. Groat, Secretary and Registrar; Geo. C. Losey, Reporting Officer and Inspector.

Wenonah, Gloucester county. Joseph E. Troncner, President; Jesse W. English, Secretary and Registrar; George H. Buzby, Health Officer; Dr. Harry A. Stout, Inspector.

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West Cape May, Cape May county. W. H. Smith, President; F. R. Hughes, Secretary and Reporting Officer.

West Long Branch, Monmouth county. Chas. Stillwagon, President; Frank A. Poole, Clerk and Registrar.

West Paterson, Passaic county. Harry Acton, Chairman; Reuben H. Reifin, Clerk; Floyd Hughes, Registrar; Dr. A. F. Graham, Health Officer.

Westville, Gloucester county. J. D. Haines, President; W. B. Atkinson, Secretary; F. A. Ellender, Reporting Officer and Registrar.

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Westwood, Bergen county. James Musson, Jr., President; James E. Ackerman, Secretary and Registrar; Irving J. Demerest, Inspector.

Wharton, Morris county. James Williams, President; W. C. Myers, Secretary and Registrar.

Wildwood Crest, Cape May county. R. Scampton, President; E. B. Fagan, Clerk and Registrar.

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Woodcliff Lake, Bergen county. Edwin Gibbs, President; N. B. Ackerman, Secretary and Reporting Officer.

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Wood Ridge, Bergen county. Chas. Nussbaum, President; Jos. F. Beck, Secretary and Registrar.

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Freehold, Monmouth county. C. J. Strahan, President; Dr. Mac Millan, Secretary and Registrar.

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Nutley, Essex county. Ernest P. Cook, Commissioner; Eugene H. Sullivan, Health Officer.

Phillipsburg, Warren county. John Houser, President; Dr. Millston, Reporting Officer and Health Officer; Harvey G. Wismer, Registrar.

Town of Union, Hudson county. Dr. Wm. J. Sweeney, President; Geo. H. Grebe, Secretary; Dr. Grant P. Curtis, Health Officer.

Westfield, Union county. Dr. R. G. Savoye, President; C. W. Harder, Registrar.

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West New York, Hudson county. A. C. Einbeck, President; Edward D. Dilworth, Secretary; August Goetz, Reporting Officer and Inspector.

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Ridgewood, Bergen county. R. W. Muns, President; E. L. Zabriske, Secretary; Dr. H. H. Pettit, Reporting Officer and Health Officer; R. B. Murphy, Inspector.

South Orange, Essex county. R. D. Freeman, President; E. C. Stout, Secretary; A. C. Benedict, Inspector.

TOWNSHIPS.

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Allamuchy, Warren county. Wm. Grover, President; Geo. Hartman, Clerk and Registrar, both of Allamuchy.

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Andover, Sussex county. Thomas J. Cuff, President; R. F. D. No. 3, Newton; W. H. Fritts, Secretary and Reporting Officer, R. F. D. No. 1, Newton.

Atlantic, Monmouth county. Jonathan H. Jones, President, Holmdel; James P. Desmond, Clerk, Colts Neck.

Bass River, Burlington county. William T. Cramer, President; C. S. Cramer, Secretary and Registrar, New Gretna.

Bedminster, Somerset county. Richard Whitney, President; Far Hills; H. McMurty, Secretary and Registrar, R. F. D. No. 8, Somerville.

Berkely, Ocean county. Benjamin P. Butler, President, Bayville; Newell R. Harker, Clerk; Frank Brouwer, Inspector, both of Toms River.

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Beverly, Burlington county. J. R. Maul, President, Riverside; Jos. B. Carter, Secretary, Delanco.

Blairstown, Warren county. D. J. Shotwell, President, Delaware; Jos. A. Dugan, Clerk, Vall; Dr. E. O. Carhart, Inspector, Blairstown.

Boonton, Morris county. John Bott, Jr., President; Edmund H. Stickle, Clerk and Registrar, Boonton R. F. D. No. 2.

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Branchburg, Somerset county. D. H. Conover, President, Nesbanic sta.; Wm. H. Higgins, Secretary and Reporting Officer; Dr. M. V. Davis, Inspector, both of North Branch.

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Bridgewater, Somerset county. Samuel Glasser, President; John Slattery, Secretary and Registrar; George W. Hope, Inspector, Raritan.

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Bryam, Sussex county. Walter Burdge, President, Waterloo; Chas. E. Carter, Secretary and Reporting Officer, Andover.

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Cedar Grove, Essex county. Lewis G. Bowden, President; H. B. Whitehouse, Secretary; Dr. Edw. M. Kelly, Reporting Officer and Health Officer; A. A. Pletz, Registrar, C. H. Walls, Inspector, all of Verona.

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Chester, Morris county. Geo. W. Howell, President; J. Cecil Hoffman, Secretary and Registrar, both of Chester.

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Cinnaminson, Burlington county. Howard H. Taylor, President; Geo. C. Frank, Secretary and Reporting Officer; Chas. B. Jessup, Registrar, all of Riverton.

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Cranford, Union county. John G. Rouch, President; Alfred H. Miller, Secretary and Reporting Officer; Alfred H. Miller, Inspector, all of Cranford.

Dearfield, Cumberland county. E. R. Parvin, President; James McNab, Secretary; E. R. Parvin, Registrar, all of E. F. D. No. 5, Bridgeton.

Delaware, Camden county. W. B. Groff, President; W. B. Jennings, Secretary and Health Officer, both of Haddonfield.

Delaware, Hunterdon county. Charles Opdyke, President, Stockton; N. V. Myers, Secretary, Sergeantsville.

Delran, Burlington county. L. S. Farnum, President; Geo. Friday, Clerk and Registrar, both of Bridgeboro.

Dennis, Cape May County. Albert E. Corson, President, Dennisville; Thomas J. Durell, Secretary and Registrar, Belleplain.

Deenville, Morris county. Calvin L. Laurence, President, Dover; Joseph Ellsworth, Clerk and Registrar, Leunville; Geo. H. Foster, Inspector, Rockaway.

Dayford, Gloucester county. John Beckett, President; E. K. Turner, Secretary, Sewell.

Dover, Ocean county. Lucien B. Gravatt, President; Theodore Fischer, Clerk and Reporting Officer; Dr. Frank Brouwer, Inspector, all of Toms River.

Downe, Cumberland county. Harry E. Love, President; Sheppard Campbell, Clerk and Registrar, both of Newport.

Eagleswood, Ocean county. H. G. Shinn, President; Robert F. Rutter, Secretary and Registrar, both of West Creek.

Easthampton, Burlington county. C. H. Cooper, Chairman, Smithville; J. P. Croshan, Secretary and Reporting Officer; Dr. E. D. Prickett, Inspector, both of Mt. Holly.

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East Greenwich, Gloucester county. Amos G. Haines, President, Clarksboro; J. C. Dauson, Clerk and Registrar, Mickleton.

East Windsor, Mercer county. Chas. Probasco, President; Cranbury; Wm. Kirby, Secretary and Registrar, Etra; Dr. G. H. Franklin, Health Officer, Hightstown.

Eatontown, Monmouth county. Mathew Stothart, President; Wm. E. Morris, Secretary; E. W. Carter, M. D., Reporting Officer and Inspector, all of Eatontown.

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