

TWENTY-FIRST ANNUAL REPORT

OF THE

# Board of Health

OF THE

STATE OF NEW JERSEY,

AND REPORT OF THE

Bureau of Vital Statistics.

1897.



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## SECRETARY'S REPORT.

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*Hon. John W. Griggs, Governor of New Jersey :*

YOUR EXCELLENCY—In presenting the Twenty-first Annual Report of the State Board of Health, and the Nineteenth Annual Report of the Bureau of Vital Statistics, it is gratifying to be able to show that the past year has been attended by no widespread epidemics of preventable disease, and also to record a lower death-rate than that of 1896, notwithstanding that the rate for 1896 was lower than any other recorded during the seven years 1889-1895, inclusive.

The total number of deaths which occurred in the State during the year ending June 30th, 1897, was 29,822,\* and the estimated population is 1,764,194,† thus giving an annual death-rate of 16.90 per 1,000.

New Jersey has an area of 5,263,641 acres, of which there is 4,809,218 acres of land surface, and the population in 1895 was 1,673,106, or 2.87 acres for each inhabitant. But these figures do not represent the distribution of the population, for in the central and northeastern portions of the State, the estimated urban and suburban inhabitants now constitute not less than 86 per cent. of the entire population of the State, and they occupy an area of 2,198,508 acres, or 41 per cent. of the area of the whole State.

The comparative mortality among these two classes of inhabitants is shown in the following table :

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\*The table of mortality for the present year has been prepared one month earlier than has heretofore been customary, because of the provisions of the act of the legislature approved June 15th, 1895, and we estimate that about five hundred returns from local registrars of vital statistics will be received too late for tabulation. These returns will appear in the report for 1898.

†The method adopted in estimating the population is the same which has been used since this bureau was established, and assumes that the rate of increase is constant through the quinquennial period between the census years.



TABLE SHOWING THE COMPARATIVE MORTALITY AMONG THE URBAN AND SUBURBAN AND THE RURAL INHABITANTS OF NEW JERSEY.

STATISTICAL DIVISIONS.	Area—acres.	Population.	Total deaths.	Death-rate per 1,000.	Deaths under one year.	Deaths under five years.	Percentage of deaths under five years to total deaths.
Urban and suburban districts—							
Bergen county.....	156,581	72,461	935	12.90	205	197	.....
Burlington county.....	575,223	60,161	807	13.44	169	232	.....
Camden county.....	144,813	105,070	2,025	19.27	513	765	.....
Essex county.....	83,623	334,000	5,816	17.41	1,469	2,155	.....
Hudson county.....	38,709	349,260	6,930	19.84	1,701	2,688	.....
Mercer county.....	145,858	87,762	1,581	18.01	343	483	.....
Middlesex.....	207,639	73,373	1,176	16.03	233	455	.....
Monmouth.....	314,286	78,109	1,117	14.30	232	313	.....
Morris county.....	307,318	61,710	963	15.61	195	267	.....
Passaic county.....	123,100	144,494	2,631	18.55	755	1,204	.....
Union county.....	67,164	90,578	1,412	15.59	401	521	.....
Total.....	2,198,508	1,456,888	25,443	16.45	6,266	9,378	36.85
Rural districts—							
Atlantic county.....	382,633	37,114	712	19.18	160	220	.....
Cape May county.....	282,915	13,484	170	12.60	30	44	.....
Cumberland county.....	438,636	51,555	644	11.91	130	190	.....
Gloucester county.....	217,139	32,207	398	12.36	89	122	.....
Hunterdon county.....	281,037	35,334	517	14.63	87	122	.....
Ocean county.....	432,389	19,135	254	13.27	50	62	.....
Salem county.....	249,198	26,456	464	17.27	82	121	.....
Somerset county.....	195,213	31,301	486	15.53	100	137	.....
Sussex county.....	342,903	22,596	261	11.55	44	63	.....
Warren county.....	233,376	37,575	533	14.18	107	155	.....
Total.....	3,065,133	308,762	4,379	14.04	879	1,236	28.22

These figures show the relative healthfulness of the cities and the country districts, and the number of deaths under five years is a fair indication of the influence which closely built-up localities have upon the public health. In the smaller proportion of deaths among children in rural localities, we also have an indication of the degree of benefit which improved sanitary conditions are capable of effecting in the promotion of the healthiness of the various sections of the State, for it has long been established that overcrowding, impure food and impure air have a much more unfavorable influence upon the health of

infants than upon adults, and in the thinly populated districts, these conditions are less frequently found than in more populous localities.

**Estimating Population.**—The method of estimating the population of the State for the use of the bureau of vital statistics, in the annual tabulation of marriages, births and deaths, has been to assume that the same rate of increase continues as that which prevailed between the two previous census years. There has, therefore, been added to the population by the last census (the State census of 1895), one fifth of the difference between that and the preceding census (the U. S. census of 1890), for each intermediate year. Thus for 1896 there was added one-fifth of the difference between the census of 1890 and 1895, viz., 228,010. The following table shows the figures which have been employed as a basis of calculation from year to year:

TABLE SHOWING THE ESTIMATED ANNUAL INCREASE OF POPULATION, AND THE ACTUAL POPULATION BY CENSUS IN NEW JERSEY, 1890-1897.

Year.	Population.
* 1890.....	1,441,017
1891.....	1,478,784
1892.....	1,511,653
1893.....	1,538,759
1894.....	1,578,373
* 1895.....	1,672,942
1896.....	1,718,543
1897.....	1,764,144

**Registration.**—The following table shows the number of marriages, births, still-births and deaths registered each year since the establishment of the bureau of vital statistics, with all supplements included, together with a separate column showing how many of the recorded marriages were of non-residents—1886-1897, inclusive:

\* Census figures are in heavy type.

YEAR.	Marriages.	Births.	Deaths.	Still-births.	Non-resident marriages.
June, 1878 .....	542	1,845	1,501	.....	.....
Year ending June 30, 1879..	7,188	23,205	20,575	1,306	.....
" " " *1880..	<b>8,100</b>	<b>24,292</b>	<b>19,125</b>	<b>1,475</b>	.....
" " " 1881..	8,336	24,263	21,039	1,492	.....
" " " 1882..	9,094	23,812	26,082	1,409	.....
" " " 1883..	9,911	25,667	23,445	1,511	.....
" " " 1884..	9,329	26,539	21,821	1,400	.....
" " " *1885..	<b>9,343</b>	<b>25,189</b>	<b>23,966</b>	<b>1,782</b>	.....
" " " 1886..	12,838	27,322	23,923	1,494	2,572
" " " 1887..	15,639	28,016	24,556	1,580	4,332
" " " 1888..	16,574	29,084	27,479	1,739	4,475
" " " 1889..	15,969	30,407	26,778	1,859	4,072
" " " *1890..	<b>15,954</b>	<b>31,770</b>	<b>28,773</b>	<b>1,819</b>	<b>4,187</b>
" " " 1891..	16,847	30,023	29,179	1,809	3,411
" " " 1892..	16,572	32,726	33,016	1,848	3,767
" " " 1893..	17,627	34,639	30,929	1,852	4,073
" " " 1894..	16,690	35,108	37,355	2,022	3,881
" " " *1895..	<b>16,537</b>	<b>33,198</b>	<b>30,901</b>	<b>1,933</b>	<b>3,232</b>
" " " 1896..	18,774	33,006	31,315	2,033	4,132
" " " 1897..	18,171	31,595	29,822	2,031	4,090
Totals .....	259,033	551,771	503,580	32,434	46,274

\* Census figures are in heavy type.

Grand total.....	1,346,818
Yearly average.....	70,885
Year ending June 30, 1897.....	81,619

The following table shows the number of certificates of marriages, births and deaths received and recorded, and also the number of searches and certified copies made by the bureau of vital statistics during the past year :

YEAR ENDING JUNE 30th, 1897.	Certificates received and recorded.	Increase over pre- vious year.	Decrease over pre- vious year.	Searches made.	Certified copies issued.	Per-son cases.
Marriages .....	18,171	.....	199	392	213	243
Births.....	31,595	388	.....	293	144	189
Deaths .....	29,822	.....	945	776	531	508

**Births.**—The system which is in operation in New Jersey for obtaining reports of vital facts has proved to be satisfactory so far as it relates to marriages and deaths, but the reports of births are incomplete. The law provides that it shall be the duty of the physi-

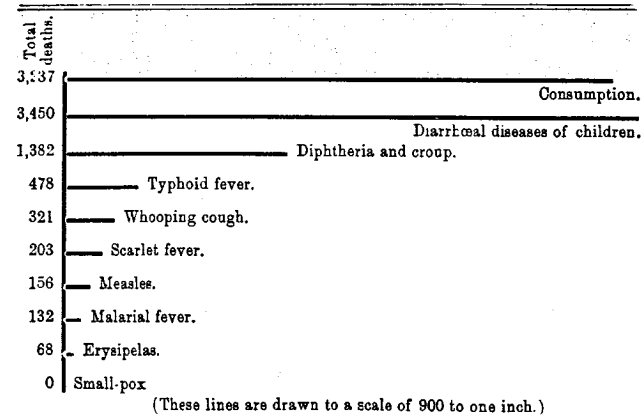
cian or midwife who may be present at the birth to prepare and transmit the certificate, and if no physician or midwife be present that the parents shall perform this duty, and the enforcement of the act is placed in the hands of the local board of health, the penalty for violation of this requirement being twenty dollars.

But it is found that in some sanitary districts none of the births which occur are reported, and in many other localities there are physicians who fail to make reports. Doubtless the responsibility for this state of affairs should fall mainly upon the local board of health, but this is no reason for excusing the professional attendant at a birth for neglecting to comply with the law. Better service would be obtained if every local registration officer keenly comprehended the value to the inhabitants of his district which attaches to an accurate record of births.

It has been observed that in every district where the local officer or board determines to enforce the payment of the penalty for non-report, the returns of births are secured without further difficulty.

**Deaths from Preventable Diseases.**—The number of deaths from the ten chief preventable diseases was 9,427. In 1896 there were 10,938 deaths from these affections, or 1,511 more than during 1897, and the average number of deaths from these causes during the past eight years has been 10,414, or 987 more than for the last year.

The following diagram shows the comparative mortality from the specified preventable diseases during the year ending June 30th, 1897 :





**Consumption.**—This disease caused 3,237 deaths during the year, which is 121 less than during the previous year, and 255 less than the average for the ten years 1887–1896. We may reasonably expect that a steady reduction in the death-rate from all of the tuberculous affections will attend the rapid extension of public information concerning the methods by which these diseases are conveyed, and when hygiene shall become one of the regular branches of instruction taught in the public schools, this greatest of all plagues will doubtless be brought within much narrower limits. Efforts to restrict the spread of this disease are being made by health boards in several of the cities of the United States, but no general agreement has yet been reached among sanitarians concerning the extent to which such efforts shall extend. Much evidence has been collected showing that early recognition of the disease greatly enhances the patient's chances for recovery, and also promotes the safety of those with whom he may dwell or be associated.

**Diphtheria.**—There has been a decrease in the number of deaths from diphtheria, notwithstanding that its prevalence has been quite as widespread as in previous years. The lessened fatality is probably due mainly to the employment of antitoxin in the treatment of the disease, but it may also be owing in some degree to the fact that this affection varies greatly from year to year in malignancy.

DEATHS IN THE CITIES OF OVER 10,000 POPULATION IN NEW JERSEY FROM DIPHThERIA FOR TEN YEARS, 1883-97.

NAME OF PLACE.	Population— Census 1886.	Years										Total.	
		1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.		
Atlantic City.....	18,329	7	8	4	15	8	8	8	7	11	8	54	
Bayonne.....	19,856	23	69	10	14	16	13	13	15	52	14	234	
Bord-entown.....	5,178			7	2	30	7	1	5	1		53	
Brickton.....	13,292	10		6	40	10	2		1			85	
Burlington.....	7,344	27	4		10	19	11	16	9	24	9	128	
Camden City.....	63,467	73	32	78	192	150	69	90	34	60	95	941	
Dover.....												5	
Elizabeth.....	43,834	77	40	40	51	18	47	44	22	49	32	420	
Englewood.....	5,721											1	
Gloucester City.....	6,225	11	11	13	5	6	4	4	7	3	6	70	
Hackensack.....	7,282						1	2	1	1		8	
Harrison.....	9,672	14	28	3	10	8	6	7	8	13	4	103	
Hoboken.....	54,083	76	162	126	93	70	77	56	96	103	53	911	
Jersey City.....	182,713	223	223	341	295	261	221	272	167	299	229	2,613	
Long Branch.....	7,333	15	4	9	6	2	4	4	2	8	7	62	
Mt. Airy.....	10,463	33	9	17	27	3	2		6	6	3	133	
Montclair.....										9	2	11	
Morristown.....	10,296	13	30	5	5	5	8		9	6	1	82	
Newark.....	215,806	397	343	314	198	219	275	173	256	339	177	2,680	
New Brunswick.....	19,910	50	50	23	5	29	7	11	17	23	9	224	
Orange.....	22,757	17	22	44	41	39	23	11	15	47	18	277	
Passaic.....	17,894	15	23	20	32	23	14	13	14	29	33	218	
Paterson.....	97,744	97	73	63	131	142	96	131	83	123	177	1,180	
Perth Amboy.....	13,030	31	8	6	29	12	22	20	11	4	18	161	
Phillipsburg.....	9,081	7	12	7	2	2	8	11	2	10	6	84	
Plainfield.....	13,629	16	3	12	4	5	33	14	14	4	1	106	
Rahway.....	7,945	3	1	4	4		2	9	1	3	1	33	
Salem.....	6,337	1	13	1			1	6	2	2	15	11	52
South Amboy.....												34	
Town of Union.....	13,336	20	7	44	33	12	17	13	25	10	7	228	
Trenton.....	62,518	82	20	43	67	133	91	36	138	90	33	755	
Total.....	939,454	1,423	1,214	1,248	1,359	1,233	1,104	973	1,070	1,344	1,017	11,967	

**Typhoid Fever** caused fewer deaths than during either of the seventeen previous years, as the following table shows.

DEATHS FROM TYPHOID FEVER IN NEW JERSEY FOR SEVENTEEN YEARS, 1881-1897.

Years.....	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Deaths.....	374	854	561	640	642	545	522	620	724	782	695	628	506	485	568	577	478

LIST OF SANITARY DISTRICTS IN NEW JERSEY IN WHICH DEATHS FROM TYPHOID FEVER OCCURRED DURING THE YEAR ENDING JUNE 30TH, 1897, WITH NUMBER OF DEATHS, SOURCE OF WATER SUPPLY AND NATURE OF DRAINAGE.

NAME OF DISTRICT.	Number of deaths.	Water-supply	Drainage
Acquackanonk township.....	1	Domestic.	No sewers.
Alloway township.....	1	"	"
Atlantic City.....	4	Public.	Sewers.
Atlantic township.....	1	Domestic.	No sewers.
Bayonne city.....	7	Public.	Sewers.
Bedminster township.....	1	Domestic.	No sewers.
Belvidere.....	1	Public.	Sewers.
Bergen township.....	2	Domestic.	No sewers.
Buena Vista township.....	2	"	"
Beverly township.....	1	"	"
Bloomfield township.....	3	Public.	Sewers.
Boonton.....	1	"	"
Bordentown.....	2	"	"
Burlington.....	1	"	"
Bridgeton.....	1	"	No sewers.
Bridgeton township.....	4	Domestic.	"
Bridgewater township.....	4	Domestic.	Sewers.
Camden.....	38	Public.	"
Cape May City.....	1	"	No sewers.
Chester township (Burlington).....	2	Domestic.	"
Chester township (Morris).....	1	"	"
Clayton borough.....	1	Public.	"
Clinton township (Essex).....	2	Domestic.	"
Clinton township (Hudson).....	1	"	"
Commercial township.....	1	"	"
Cranbury township.....	1	"	"
Deerfield township.....	1	"	"
Dover city.....	4	Public.	"
Dover township.....	4	Domestic.	"
East Amwell township.....	2	"	"
East Brunswick township.....	1	"	"
East Greenwich township.....	2	Public.	Sewers.
East Orange township.....	3	Domestic.	No sewers.
Eatontown township.....	3	Domestic.	"
Egg Harbor township.....	1	"	"
Egg Harbor township.....	7	Public.	Sewers.
Elizabeth city.....	1	Domestic.	No sewers.
Elk township.....	2	Public.	Sewers.
Englewood city.....	2	Public.	"
Ewing township.....	1	Domestic.	No sewers.
Fanwood borough.....	1	"	"
Franklin township (Bergen).....	1	"	"
Franklin township (Gloucester).....	1	"	"
Franklin township (Somerset).....	1	"	"
Freehold town.....	6	Public.	Sewers.
Glassboro township.....	1	"	No sewers.
Gloucester city.....	5	"	Sewers.
Gloucester township.....	3	Domestic.	No sewers.
Greenwich township (Gloucester).....	1	"	"
Greenwich township (Warren).....	1	"	"
Guttenberg township.....	1	Public.	No Sewers.

LIST OF SANITARY DISTRICTS IN NEW JERSEY IN WHICH DEATHS FROM TYPHOID FEVER OCCURRED DURING THE YEAR ENDING JUNE 30TH, 1897, WITH NUMBER OF DEATHS, SOURCE OF WATER SUPPLY AND NATURE OF DRAINAGE.—Cont.

NAME OF DISTRICT.	Number of deaths.	Water-supply.	Drainage.
Haddon township.....	2	Public.	Sewers.
Hamilton township (Atlantic).....	1	Domestic.	No sewers.
Hamilton township (Mercer).....	5	"	"
Hardyston township.....	1	"	"
Harrington township.....	1	"	"
Harrison city.....	3	Public.	Sewers.
Harrison township.....	1	Domestic.	No sewers.
High Bridge township.....	3	"	"
Hillsboro township.....	1	"	"
Hoboken.....	9	Public.	Sewers.
Holland township.....	1	Domestic.	No sewers.
Holmdel township.....	1	"	"
Hopewell borough.....	2	"	"
Hopewell township (Cumberland).....	2	"	"
Jersey City.....	38	Public.	Sewers.
Kearny town-ship.....	2	"	"
Lacey township.....	1	Domestic.	No sewers.
Lambertville city.....	14	Public.	"
Laudis township.....	1	Domestic.	"
Little Egg Harbor township.....	2	"	"
Logan township.....	1	"	"
Long Branch.....	3	Public.	Sewers.
Lopatcong township.....	1	Domestic.	No sewers.
Lower Alloways Creek township.....	1	"	"
Lower Penns Neck township.....	3	"	"
Manalapan township.....	1	"	"
Manchester township (Passaic).....	1	"	"
Man-field township (Morris).....	1	"	"
Maurice River township.....	2	"	"
Mid-letown township.....	2	"	"
Midville city.....	2	Public.	Sewers.
Monroe township.....	2	Domestic.	No sewers.
Montclair city.....	3	Public.	Sewers.
Mount Laurel township.....	2	Domestic.	No sewers.
Neptune township.....	7	"	"
Newark city.....	45	Public.	Sewers.
New B-unswick city.....	3	"	"
Northampton township.....	1	Domestic.	"
North Bergen township.....	4	"	No sewers.
North Brunswick township.....	2	"	"
Orange city.....	5	Public.	Sewers.
Oxford township.....	2	Domestic.	No sewers.
Passaic city.....	12	Public.	Sewers.
Passaic township.....	2	Domestic.	No sewers.
Paterson city.....	49	Public.	Sewers.
Pemberton borough.....	2	"	"
Perth Amboy city.....	7	"	"
Phillipsburg city.....	1	"	"
Pilesgrove township.....	2	Domestic.	No sewers

LIST OF SANITARY DISTRICTS IN NEW JERSEY IN WHICH DEATHS FROM TYPHOID FEVER OCCURRED DURING THE YEAR ENDING JUNE 30TH, 1897, WITH NUMBER OF DEATHS, SOURCE OF WATER-SUPPLY AND NATURE OF DRAINAGE—Cont.

NAME OF DISTRICT.	Number of deaths.	Water-supply.	Drainage.
Pittsgrove township.....	2	Domestic.	No sewers.
Plainfield city.....	3	Public.	Sewers.
Pohatcong township.....	2	Domestic.	No sewers.
Princeton township and borough.....	5	Public.	Sewers.
Rahway city.....	1	"	"
Randolph township.....	1	Domestic.	No sewers.
Raritan township (Middlesex).....	3	"	"
Ridgefield township.....	2	"	"
Rockaway township.....	4	"	"
Saddle River township.....	1	"	"
Sayreville township.....	2	"	"
Shrewsbury township.....	4	"	"
South Harrison township.....	1	"	"
South Orange village.....	2	Public.	"
Stockton township.....	4	"	"
Trenton city.....	25	"	Sewers.
Union township (Hunterdon).....	1	Domestic.	No sewers.
Union township (Union).....	1	"	"
Upper Pittsgrove township.....	1	"	"
Wall township.....	2	"	"
Washington borough.....	2	Public.	Sewers.
Washington township (Bergen).....	1	Domestic.	No sewers.
Washington township (Morris).....	1	"	"
Waterford township.....	3	"	"
West Ansell township.....	1	"	"
Westfield township.....	1	"	"
West Hoboken township.....	2	Public.	Sewers.
Winslow township.....	1	Domestic.	No sewers.
Woodbridge township.....	2	Domestic.	No sewers.
Woodbury city.....	1	Public.	Sewers.

TABLE SHOWING NUMBER OF DEATHS FROM TYPHOID FEVER PER 10,000 INHABITANTS IN CITIES OF OVER 10,000 POPULATION, FOR YEAR ENDING JUNE 30TH, 1897.

Name of City.	Estimated population.	Number of deaths from typhoid.	Rate per 10,000.
Atlantic City.....	10,437	4	1.95
Bayonne.....	20,184	7	3.46
Bridgeton.....	14,043	4	2.84
Camden.....	65,527	38	5.79
Elizabeth.....	46,762	7	1.51
Hoboken.....	58,257	9	1.54
Jersey City.....	190,597	38	1.99
Millville.....	10,650	2	1.87
Morristown.....	11,142	.....	.....
Newark.....	229,396	44	1.91
New Brunswick.....	20,432	3	1.46
Orange.....	24,370	3	1.23
Passaic.....	19,840	12	6.04
Paterson.....	104,942	49	4.66
Perth Amboy.....	14,436	7	4.84
Plainfield.....	14,573	3	2.05
Town of Union.....	14,412	.....	.....
Trenton.....	64,542	25	3.87

TABLE SHOWING TOTAL NUMBER OF DEATHS FROM TYPHOID FEVER IN THE CITIES OF NEW JERSEY FOR TEN YEARS 1888-1897.

NAME OF PLACE.	Population Census 1885.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	Totals.
Atlantic City.....	18,329	2	6	6	4	4	9	15	3	8	4	61
Bayonne.....	19,836	6	4	7	7	13	7	7	11	4	7	71
Bordentown.....	5,776	3	3	2	2	4	5	3	3	2	2	25
Bridgeton.....	13,292	5	3	5	8	9	9	8	3	3	4	40
Burlington.....	7,844	6	4	6	7	3	1	4	3	1	1	35
Camden City.....	61,467	55	90	82	33	38	38	42	64	32	38	312
Elizabeth.....	43,834	12	9	19	6	11	8	4	14	8	1	77
* Englewood.....	5,721	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
Gloster City.....	6,225	6	1	2	5	1	5	2	5	7	5	39
Hackensack.....	7,282	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12
Harrison.....	9,672	9	4	6	2	4	2	2	5	8	3	45
Hoboken.....	34,083	15	24	19	14	15	10	17	11	21	9	155
Jersey City.....	182,713	114	132	159	167	123	116	96	174	153	38	1,577
Long Branch.....	7,333	2	1	4	1	3	.....	.....	.....	.....	.....	20
Millville.....	10,466	4	4	3	10	4	4	2	3	.....	.....	36
* Monclair.....	10,260	1	2	2	1	.....	.....	.....	.....	.....	.....	4
Morristown.....	10,260	1	2	2	1	.....	.....	.....	.....	.....	.....	21
Newark.....	215,865	76	131	194	124	153	63	43	43	61	44	942
New Brunswick.....	19,910	14	5	10	6	9	8	4	2	8	3	64
Orange.....	22,793	4	7	14	9	6	6	11	5	6	3	71
Passaic.....	17,894	7	7	.....	.....	.....	.....	.....	.....	.....	.....	12
Paterson.....	97,344	21	28	4	17	15	35	7	24	43	49	241
Perth Amboy.....	13,030	3	2	1	9	1	1	1	.....	.....	.....	12
Phillipsburg.....	9,031	1	5	5	1	4	3	2	5	3	1	27
Plainfield.....	13,629	3	1	1	3	3	3	3	4	3	2	24
Rahway.....	7,945	5	5	1	2	4	.....	.....	.....	.....	.....	31
Salem.....	6,337	7	10	1	3	1	3	1	1	.....	.....	29
Town of Union.....	13,336	6	6	8	5	.....	.....	.....	.....	.....	.....	29
Trenton.....	62,513	12	20	11	15	15	19	16	11	16	25	160
Totals.....	959,464	399	512	569	487	457	349	328	410	422	279	4,232

\* Record begins in 1897.  
\* Record begins in 1896.

Whooping Cough has caused a larger number of deaths during each of the four years 1894-1897 than has resulted from scarlet fever. The comparative number of deaths from these diseases is shown in the following table:

Year.	1894.	1895.	1896.	1897.	Total.
Whooping cough.....	328	272	275	321	1,196
Scarlet fever.....	272	164	183	23	922

As the infective stage in this disease begins with the first onset of the catarrhal symptoms, and before its character is recognized, the affection spreads in a manner which defies all of the precautions which sanitary authorities have thus far employed as preventive measures; and it appears periodically as an epidemic in every community about every fourth year.

Measles has thus far baffled all attempts to prevent its frequent re-appearance as an epidemic, and it continues to recur as often as a new group of susceptible individuals is added to a community. Measles is not included among the notifiable diseases mentioned in the act of 1895, and health officers have found by experience that all measures heretofore employed to check the spread of this affection, except the successful isolation of the first cases, will prove useless.

Malarial Fevers have not prevailed to any great extent during the year, the number of deaths from these diseases being only 132, which is a smaller mortality from these affections than has occurred in any one year since 1879, with the exception of 1896, when 119 occurred. These facts are shown in the following table.

DEATHS FROM MALARIAL FEVER FOR NINETEEN YEARS, 1879-1897.

Years.....	1879.	1880.	1881.	1892.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Deaths.....	283	293	481	379	290	230	209	243	217	264	203	195	180	198	148	162	144	119	132

Small-pox caused no deaths, but the absence of this scourge should not lead to continuance of the neglect which now prevails concerning vaccination. It was shown in the report of this board for 1896 that not less than 21 per cent. of the children of the State, within school age, were unvaccinated, and the table for this year shows an increasing proportion of unvaccinated children. Conditions are

therefore ripe for the general prevalence of small-pox, and every local board of health should make a standing offer to vaccinate free all indigent persons who may apply for the protection which this prime hygienic precaution affords.

TABLE SHOWING NUMBER OF UNVACCINATED SCHOOL CHILDREN IN NEW JERSEY, BY COUNTIES, 1897.

County.	Total number enrolled.	Unvaccinated.
Atlantic.....	8,870	2,837
Bergen.....	16,951	2,671
Burlington.....	14,457	5,935
Camden.....	24,890	6,145
Cape May.....	3,232	1,906
Cumberland.....	12,736	8,347
Essex.....	82,403	6,680
Gloucester.....	7,978	3,937
Hudson.....	109,805	9,615
Hunterdon.....	8,656	3,262
Mercer.....	21,018	4,733
Middlesex.....	17,649	5,016
Monmouth.....	19,983	7,001
Morris.....	14,988	7,174
Ocean.....	5,445	3,518
Passaic.....	37,739	6,737
Salem.....	6,533	2,764
Somerset.....	7,566	984
Sussex.....	5,831	3,907
Union.....	21,623	3,010
Warren.....	9,509	6,113
Totals.....	458,862	102,292

Isolation Hospitals.—The most effectual, and in many situations the only reliable defense against the spread of the dangerous communicable diseases is hospital isolation, and every populous district should be provided with a suitable isolation establishment. Domestic quarantine is rarely maintained voluntarily by the family of the patient, either from lack of appreciation of the danger of spreading the disease or from indifference to the welfare of other persons, or because of indisposition to be subjected to the personal inconvenience which attends exclusion from relatives and others.

It has been estimated that one bed to every thousand inhabitants will be sufficient hospital accommodation under ordinary conditions. The city of Paterson has led the way (see annual report of this board

for 1896, page 327) in the construction of an institution of this nature adapted to the uses of the larger municipalities. In the smaller communities the cottage hospital plan is more appropriate to the local necessities.

In dealing with diphtheria and certain other affections we know that absolute isolation of the infected persons and disinfection of the infected articles and premises will unquestionably arrest the spread of the disease, but so long as we employ inadequate methods for preventing communication between the sick and those who are unaffected there will continue to be new cases developing within the town or beyond its borders. Hospitals for the reception of infected persons should be erected and made ready in advance of the appearance of an epidemic, for their greatest value consists in their readiness to receive the first cases which appear. In small communities the necessary protection may be afforded by arrangement with the occupants of a well-situated cottage, where there are no children, that they will receive and nurse patients placed in their care by the board of health.

**The Notification of Infectious Diseases** required by the act approved March 22d, 1895, has not yet been enforced with sufficient energy by many of the local boards in rural situations, and the information thus far obtained of the prevalence of these diseases is unsatisfactory. Failure to comply with the requirements of the law is not so often due to negligence on the part of the physician as it is to inattention on the part of local officers charged with the duty of receiving, recording and transmitting the reports.

It is the right of communities in which active efforts are made to restrict the spread of infectious diseases, that they shall be informed of the existence of these affections in adjoining or neighboring sanitary districts, and it is one of the proper functions of the State board of health to obtain and judiciously distribute this information.

The card-index system which is employed in the office of the State board for recording all reports received under the provisions of the act referred to, places the facts, so far as they are reported, in a form which renders them accessible for instant reference at all times.

The records already obtained have assisted in showing the comparative healthfulness of communities, and they indicate with considerable accuracy the degree of efficiency which has been attained in the local sanitary administration.

Inasmuch as many individuals suffer sickness for every one who dies, the morbidity statistics have greater value from an economical standpoint than have the mortality records.

Doubt has been expressed concerning the right of local boards to bring suit for the penalty in cases where physicians neglect or refuse to make reports of the diseases specified in the act above referred to, and the question was submitted by this board to the Attorney-General.

The following letter was received :

STATE OF NEW JERSEY,  
OFFICE OF ATTORNEY GENERAL.  
TRENTON, June 17th, 1897.

*Henry Mitchell, M.D., Secretary State Board of Health, Trenton, N. J.:*

DEAR SIR—The right of action for the penalties under chapter 260, laws of 1895, "for the protection of the public health," is not given by that statute to any person or persons specifically. It is not a penalty in the nature of a remedy for an injury sustained by any individual, but it is a penalty to secure the enforcement of a public duty, and may be recovered for the use of the State of New Jersey under section 5 of the act in question. I think if the local board of health brings the suit for the penalty in the 1st, 2d, 3d or 4th sections of the act, in an action upon contract, "to the use of the State of New Jersey," the action could be supported. \* \* \* I am inclined to the opinion that any citizen might bring such action "to the use of the State of New Jersey."

Truly yours,  
S. H. GREY,  
Attorney-General.

The Sanitary Supervision of Schools was urgently brought to the attention of local boards of health in New Jersey as early as 1882, and the benefits which would result from frequent inspections have often been pointed out. During an outbreak of diphtheria in 1896, in Monmouth county, five adjoining sanitary districts employed one physician to visit the schools daily and examine all children whom the teachers judged to be ill. In this manner one hundred and fifteen suspected cases were investigated, and thirty-two of these were found to be true diphtheria. Specimens from all suspected cases were sent to the State bacteriological laboratory in Princeton, and diagnoses were not announced until they were verified by reports from the bacteriologist. All suspected cases were isolated pending final diagnosis, and the isolation restrictions in the cases of convalescents were removed only when the cultures showed that the diphtheria bacilli were no longer present.





in the cleansing of cans, bottles and utensils by sending scrapings from the corners of these articles to the bacteriological laboratory of the State board of health for examination.

Instances have come to light where the grossest pollution of milk has occurred without any comprehension on the part of the producer and dealer that the life or health of the consumer is in any way affected by filthy habits in collecting and storing the milk, and these inquiries have already brought out so many interesting facts in relation to the practices of those who handle milk before it is sold, that it is apparent that a general enforcement of the act by local health boards throughout the State would work a revolution in the milk business. But thus far it has been observed that local boards having jurisdiction in dairying districts will not, with a few exceptions, enforce any regulation of the traffic in milk. In localities where the dairying interests are prominent, the health board is generally made up of men who are themselves engaged in the farming business, and the whole milk product may be sold in other districts, often in an adjoining State. Under these circumstances, the local authorities refuse to hamper themselves with what many of them honestly believe to be needless precautions, and the only way, therefore, by which improvement in dairy premises can be secured in such districts will, for the present, be by the exercise of authority exerted by influences wholly outside of the sanitary districts in which the producers and dealers may be located.

The State board of health is successfully executing the act prohibiting the sale of milk which has been produced or stored on premises where there is any person sick with any communicable disease, but further legislation is needed, and a larger force of inspectors is required to enable the board to protect the public against the unsanitary conditions on dairy premises above referred to.

The inspections heretofore made by the officers of the dairy commission have been continued, but they avail nothing unless they are followed by action on the part of local boards of health. Commercial interests demand protection against the adulteration of milk with water, but the public health will not suffer materially from the addition of water to milk unless the water is from a polluted source.

Certain characteristics of the epidemics due to contaminated milk have been pointed out, as follows:

"1. The cases appear suddenly, many new cases each day, and the subsidence is equally marked a few days after stopping the harmful milk-supply.

"2. The houses invaded are often widely distributed and not restricted to some particular part of town.

"3. The houses of the rich are apt to be more seriously invaded than those of the poor, because poor people, as a rule, use very little milk. The houses invaded often have the best hygienic surroundings, and frequently they have a different water-supply and a different sewerage system from others in which the disease exists, so that these possible causes of the epidemic may be eliminated.

"4. The special milk drinkers in each family are most liable to become affected. Those who take but little of the infected milk are not, however, exempt from the disease. In a recent epidemic of typhoid fever, caused by milk, one gentleman who carefully procured his milk from an excellent dairy, inadvertently purchased ice-cream without inquiring the source of the milk from which it was made. The ice-cream had been made from the milk of the infected dairy. The result was the death of one child from typhoid and the illness of all the other members of the family, including the father, mother and one other child.

"5. Children are most liable to be affected. In the Stamford epidemic of typhoid fever, out of 386 cases, 134, or 34.8 per cent., were children, although the greatest liability to typhoid exists between the ages of twenty and thirty. In the Yorktown and Camberly epidemic of diphtheria, while only 17.6 per cent. of the adult drinkers of the milk were affected, 30.2 per cent. of the children suffered.

"6. In the epidemics those affected are found to be, for the most part, the drinkers of a certain milk-supply—in Stamford, 376 of a total of 386; in Springfield, Mass., 135 of 150; in Somerville, Mass., 30 of 35; in Manchester, Eng., 107 of 115. In some other epidemics all the cases were among drinkers of the contaminated milk. When it is found that the same milkman does not supply most of the houses invaded, it is sometimes found that several milkmen obtain their supply from one dairy, and that in this dairy the infection has taken place. In other epidemics but a small portion of the suspected milkman's route is invaded, as in Springfield, and this is, on investigation, explained by the fact that the milkman obtained but a

small portion of his milk from the farm where the infection took place.

"7. In more than half of these epidemics due to milk, cases of the disease preceding the epidemic have been found among the milk handlers. When such cases have not been found, it is usually not possible to say that they have not existed."

**Bacteriological Laboratory.**—The legislative action necessary to maintain the bacteriological laboratory which was established by the State board of health in Princeton in 1895, was secured by the united efforts of many physicians and health officers, and the institution is now in operation under the direction of Dr. B. Meade Bolton. A statement of the work done since the laboratory was re-opened appears further on in this report.

Additional experience in the use of the mailing packages which are permitted under the provisions of Order 88, issued February 5th, 1896, shows that the convenience of those employing the mails for transmitting specimens of deceased tissues for bacteriological examination would be promoted by the substitution of a less complicated package, and the following communication has been sent to the Postmaster-General :

In New Jersey a bacteriological laboratory has been operated by the State board of health since December, 1895, and the service, which is rendered without charge, has revolutionized the methods employed by physicians, health officers and school officers in preventing the spread of diphtheria, and has already saved many lives. The use of the mails has not been attended with any risk whatever, and in no case has a package been received in a damaged condition.

Our experience, however, has developed several minor objections to the mailing cases now in use, the principal one of which is the necessity for the use of an adhesive substance for holding the papier-mache upon the outside of the outer tin box. When we place the entire case in the oven to render it sterile before sending it out from the laboratory, the pitch softens and allows the paper to become separated from the metal. It has therefore been suggested, and we respectfully request, that Order 88 be so modified that the papier-mache may be placed upon the inside of the box, instead of upon the outside as at present. This arrangement will prevent the separation of the paper during sterilization, and the packages will be much stronger when constructed in this manner, for the heavy pasteboard when rolled into a cylinder and released, presses firmly against the tin, thus adding materially to the resistance of the case to crushing weights. The proposed construction will also permit the paper to extend to the top of the box, whereas in the present package, the upper end of the box must be left without the paper covering in order to screw the cover on.

Many of the specimens sent for examination are dry, and for their transmission the use of the second box is superfluous.

The matter has again recently been brought to the attention of the postal department, and it seems probable that some modification of the order will be made.

**Maritime Quarantine.**—In 1896 the attention of the State board of health was called to certain complaints or statements relative to the inefficiency of the quarantine service at the port of Perth Amboy. An investigation was made and the following report was presented :

*Hon. John W. Griggs, Governor of New Jersey :*

SIR—Investigation has been made, in accordance with your request, concerning the methods which are at present employed to prevent the introduction into this State of infected persons, baggage and merchandise from vessels which may arrive from foreign or domestic ports, and the facts relating to this subject which have thus far been collected are as follows:

The State of New York has established two quarantine stations, one on Staten Island near Fort Wadsworth, and one at City Island in Long Island sound, and all vessels from foreign ports and also certain vessels from domestic ports which enter the port of New York are boarded by the quarantine officer at one of these stations.

All vessels found to be free from the dangerous communicable diseases are allowed to proceed, and a permit or pass is issued in the following form :

Form A 3. PORT OF NEW YORK.

QUARANTINE, S. I. ....189..

This permit to be exhibited at the office of the board of health of the city of New York if docked on the New York side, or at the city of Brooklyn board of health if on the Brooklyn side, within 24 hours (Sunday excepted) of your arrival, under a penalty of \$200.

Regulations complied with according to act of Congress, February 15th, 1895.

Arrived.....

Commander.....

Date of sailing.....

From.....

.....

.....

Officers and crew.....

First cabin.....Second.....Steerage.....Total.....

Cargo.....

Consignee.....

Health.....

*This Vessel has Permission to Proceed.*

.....  
Health Officer.

*To the Captain or Person having Charge of the Vessel named in this Permit.*

Any person except the master, owner or consignee, who shall go on board the vessel before this permit shall be delivered, shall be guilty of a misdemeanor, punishable by a fine of five hundred dollars, and imprisonment.

Any person, also, who shall neglect or refuse to comply with any provision of the law relative to quarantine, or with any direction or regulation which the health officer may prescribe in the execution of the powers imposed and conferred upon him by law, shall be guilty of the like offense, and subject to the like punishment. [Health code, article 6, chapter 661, laws of N. Y., 1893.]

QUARANTINE, S. I. ....189...

The undersigned master of.....

..... being duly sworn, deposes and says: that the port or ports from which he sailed were, to the best of his knowledge and belief, perfectly healthy, being free from all malignant, contagious or infectious disease, except such as are recorded in the bill of health from said port or ports. That no death or sickness has occurred on outward or inward voyage except such as has been duly reported to the health officer. And the surgeon further affirms and declares that the number of persons examined with reference to their protection from small-pox, and found sufficiently protected, and the number so protected by him by vaccination, is faithfully and truly rendered below.

No. found sufficiently protected.....

No. vaccinated by surgeon.....

SWORN BEFORE ME THIS ..... }  
DAY OF.....189... } .....Master.  
.....Surgeon.

When such vessels are bound to the city of New York, or to Brooklyn, the quarantine officer causes notices to be immediately sent to the office of the board of health of the municipality, to enable the proper local health officer to at once place such vessels under such supervision as the facts in each case may demand.

Each of such vessels is then met upon arrival at her wharf by an officer of the city health department, and no opportunity is allowed for the landing of sick persons who may have been secreted, nor for the unloading of rags, hides and other especially dangerous sorts of cargo, except under such regulations as may have been previously established.

The necessity for this notice to the city health authorities is best shown in the case of yellow fever. The incubation period of this disease is at times as long as five days, and, therefore, a vessel from a Cuban or other near-by Southern port, having made a quick trip, might pass the New York quarantine without any symptom having yet appeared to indicate that the disease was developing, but during the following day or two an outbreak might occur among the persons comprising the passengers and crew.

When such vessels are bound to any point in New Jersey, however, notice is not sent to the New Jersey health authorities by the New York quarantine officer, and no surveillance is exercised over the vessels in such cases.

Inquiries at various points in this State show that the practice in dealing with such vessels is as follows:

In Hoboken.—Five lines of transatlantic steamers regularly dock at the wharves of this city, and the ships of these five companies conform to the following rules, but all other vessels which arrive do so without the knowledge of the city health board and are not subjected to any restraint. In the case of the ships belonging to the said five companies the permit (see page 1) issued by the New York quarantine officer is presented soon after arrival at the office of the local board of health. The clerk of the board places upon it the date and his name and official title and returns it to the messenger. He also issues a permit to discharge cargo in the following form:

BOARD OF HEALTH.

No. .... HOBOKEN, N. J. ....189...

Permission is hereby given to.....  
to discharge the cargo of S. S. ....  
from..... at Pier, foot of..... street.

By order of the Board of Health,

.....Clerk.

New York quarantine permit has been filed in this office.

No rags, hides or skins shall be discharged upon this permit.

A certificate in the following form, signed by a representative of the company, is also sent to the health officer:

HOBOKEN, N. J. ....189...

This is to certify that the bedding ex S. S. .... arrived..... from  
..... has been disinfected by steam before being discharged.

This certificate is stamped with the date and name of the clerk of the board and then returned to the superintendent on the dock.

Upon inquiry at the office of one of the steamship companies it was learned that the steaming of bedding is conducted by the employes of the ship, and that no attempt is made to learn to what degree the heat is carried. The work is not done under the supervision of the Hoboken health board, and the board has no evidence that the operation is conducted in a manner that will sterilize the bedding. In the case of two of the said lines of steamers the bedding is said to be taken as a perquisite by the contractor who removes the ashes from the wharf, and more or less of it is carted by Thomas Toole to Jersey City, where it is purchased by a party named Martin, who bales up the contents of the ticking and sells it for paper-making. The ticking is sold to Mr. Cassin, of Norfolk, Va., who sells it for barrel-covering to truck-drivers and to oystermen.

The steerage passengers and baggage are transferred across the wharf and sent by transport to Ellis Island, except in the case of persons who can prove American citizenship, in which case the individual is allowed to land at once without going to the island. There is no sanitary supervision on the wharf to prevent the landing of infected passengers, baggage and merchandise, nor is there any law or requirement to prevent the landing of infected persons and property, except the provisions contained in the ordinance of the local board of health.

Following is a copy of the ordinance of the local board of health of Hoboken relating to this subject:

## VESSELS, DOCKS, STORRHUSES, ETC.

Sec. 67. That no owner, agent, or consignee of any vessel or cargo, and no officer of any vessel (in respect of either of which vessel or cargo, a permit according to any law, ordinance or regulation, shall or should have been obtained to pass quarantine, or to come up to the water front of the city of Hoboken), shall unload or land, or cause to be unladen or landed, such cargo, or any part thereof, in said city, without having first received the written permit of this board so to do, and on showing a proper quarantine permit; and any person or persons offending against any of the provisions of this section shall forfeit and pay a penalty of fifty dollars.

Sec. 68. The permits shall be charged for and paid as follows: For the landing or unloading of the materials or articles mentioned in said section at any dock, pier, wharf or building in said city, each party or company shall pay five dollars annually, and for all other permits granted under said section there shall be paid an annual fee of ten dollars, such permits, of course, to be subject to revocation at any time for cause; and such permits shall be dated from the first day of July of each and every year, and shall expire one year from date.

Sec. 69. That no master, charterer, owner, part owner or consignee of any vessel, or any other person, shall bring to any dock, pier, wharf or building within said city, or unload at any dock, building or pier therein, or have on storage in the said city, any skins, hides, rags, straw or bedding, or similar articles or materials, having been brought upon any vessel or from any foreign country, or any infected place, or from any point south of Norfolk, Virginia, without or otherwise than according to a written permit so to do from this board; and no person shall sell, exchange, or in any way make any exposure of any straw, bedding or articles that have been exposed to the contagion or infection of any contagious disease, or have been or are liable to communicate such disease, or have lately been on any emigrant vessel, till after the same have been adequately cleansed or disinfected; and any person or persons offending against any of the provisions of this section shall forfeit and pay a penalty of fifty dollars; provided, however, that said articles or materials, or articles or materials of like character, may, upon the written permission of this board, be removed for the purpose of cleansing and disinfecting the same, to such place or places only in said city as the said board shall designate, and the place or places so designated shall be named in the permit or permission granted or to be granted as aforesaid; and it is further provided, that any person or persons who shall make any such removal of any of said articles or materials, otherwise than in this section directed, shall be subject to and shall pay the penalty prescribed in said section.

Sec. 70. That every master, owner, charterer, part owner and consignee of any vessel that shall bring any cotton into the city of Hoboken between the first day of May and the first day of November of each year shall at once report to this board, or cause to be made, in writing, a report to this board, of the fact of any such cotton being in a dangerous, infected or unsound condition, or having been exposed to any such infection; and any person or persons offending against any of the provisions of this section shall forfeit and pay a penalty of fifty dollars.

Sec. 71. That no captain, officer, consignee, owner or other person in charge of any vessel (or having the right and authority to prevent the same) shall remove or aid in removing from any vessel to the shore (save as legally authorized by this board, and into quarantine grounds or buildings only) any person sick of, or person that has been exposed to and is liable very soon to develop, any contagious disease, nor so remove or aid in removing any articles that have been exposed to the contagions of any such disease, except in accordance with a permit of this board, or with its special regulations; and any person or persons offending against any of the provisions of this section shall forfeit and pay a penalty of fifty dollars.

Sec. 72. That no person shall bring into this city from any infected place or land, or take therein, from any vessel lately from any infected port, or from any vessel or building in which had lately been any person sick of a contagious disease, any article or person whatsoever, nor shall any such person land or come into said city without a permit from this board; and it shall be no excuse that such person or article so offending, or the occasion of offense, has passed through quarantine, or has a permit from any other source than this board; and any person or persons offending against the provisions of this section shall forfeit and pay a penalty of thirty dollars.

In the case of the other lines of regular transatlantic steamers which dock in Hoboken, the practice is the same as that above described, except concerning the bedding, which is carted out on the meadows and burned.

The fee charged by the local board of health is \$15 per annum for each of the said five lines of steamers, but other vessels pay no fees.

In Jersey City the system of receiving and countersigning the permit issued by the New York quarantine officer is the same as that which prevails in Hoboken. Following is the form of permit issued by the Jersey City board of health for the discharge of cargo.

No. ....  
 Jersey City, .....189...  
 Permission is hereby given  
 to discharge cargo of.....  
 consisting of.....  
 from.....  
 at.....  
 By order of the Board,  
 Health Inspector.

No. ....  
 OFFICE OF THE BOARD OF HEALTH.  
 JERSEY CITY, .....189...  
 Permission is hereby given to discharge the cargo of  
 consisting of.....  
 from.....  
 at.....  
 By order of the board,  
 Health Inspector.

If rags or hides are to be discharged a special permit is issued, stating where the articles are to go.

The following sections of the ordinances of the board of health of Jersey City constitute the only regulations in that sanitary district for the prevention of the introduction of infective diseases by means of vessels, their passengers, crew and cargo:

## REMOVAL FROM AND UNLOADING OF VESSELS.

Sec. 118. No master, charterer, owner, part owner or consignee of any vessel, or any other person shall bring to any dock, pier, wharf or building in said city, or unload at any dock, building, or pier therein, or have on storage, any skins, hides, rags, or similar articles or materials, having been brought from any foreign country or any infected place, or from any point south of Norfolk, Virginia, without or otherwise than according to a written permit so to do from this board; and no person shall sell, exchange or in any way make any exposure of any straw, bedding, or articles (or cart the same through any of the streets of Jersey City), that have been exposed to the contagion or infection of any contagious disease, or have lately been on any emigrant vessel, without first having obtained a written permit from this board; and any person or persons offending against any of the provisions of this section shall forfeit and pay a penalty of twenty dollars.

Sec. 119. No owner, agent, or consignee of any vessel or cargo, and no officer of any vessel (in respect of either of which vessel or cargo a permit, according to any law, ordinance or regulation, shall or should have been obtained to pass quarantine, or up to the water front of said city), shall unload or land, or cause to be unloaded or landed, such cargo, or any part thereof, in said city, without having first received the written permit of this board so to do; and any person or persons offending against any of the provisions of this section shall forfeit and pay a penalty of twenty dollars.

Sec. 120. No captain, officer, consignee, owner, or other person in charge of any vessel (or having right and authority to prevent the same), shall remove or aid in removing from any vessel to the shore (save as legally authorized by this board, and into quarantine grounds or buildings only), any person sick of, or person that has been exposed to and is liable very soon to develop, any contagious disease, nor so remove or aid in removing any articles that have been exposed to the contagion of such disease, except in accordance with a permit of this board, or with its special regulations; and any person or persons offending against any of the provisions of this section shall forfeit and pay a penalty of twenty dollars.

Sec. 121. No person shall bring into this city, from any infected place, or land or take therein from any vessel lately from an infected port, or from any vessel or building in which had lately been any person sick of a contagious disease, any article or person whatsoever, nor shall any such person land or come into said city without a permit of this department; and it shall be no

## 28 REPORT OF THE BOARD OF HEALTH.

excuse that such person or article so offending, or the occasion of offense has passed through quarantine, or has a permit from any other source than this board; and any person or persons offending against any of the provisions of this section shall forfeit and pay a penalty of twenty dollars.

Sec. 122. No owner, part owner, charterer, agent, or consignee of any vessel nor any officer or person having charge or control of the same, shall allow to be cast therefrom, and no person shall cast therefrom (when such vessel is lying at any dock, pier, or wharf in said city), into any public waters surrounding Jersey City, any straw, bedding, clothing, or other substance from any vessel, without a permit from this board, except as allowed by the quarantine authorities, and any person or persons or corporation offending against any of the provisions of this section shall forfeit and pay a penalty of twenty dollars.

In Newark the system is practically the same as that which is in operation in Jersey City and Hoboken.

The quarantine officer at the port of Perth Amboy states that his total receipts from fees paid by incoming vessels (and this is the only income connected with the office) averaged about \$250 annually, and that from this sum he pays a deputy. Vessels are not boarded by this officer or his deputy from December 1st to March 1st.

In the ports in New Jersey along the Delaware river the traffic is small, and the risk of introducing infectious diseases is much less than on the eastern border of the State. Tuckerton is a port of entry, but it is available only for vessels of very light draft.

It will be seen that, except at Perth Amboy, the sanitary supervision over vessels, passengers, baggage and cargo from foreign ports is conducted independently by the various local boards of health of the districts where these vessels land, and that the supervision is in fact the merest pretence of control over the entrance into the State of infected persons and property, and that it consists almost entirely in the issuing of permits and the collection of fees. As at present conducted it is worthless as a defense against the introduction of the epidemic and pestilential diseases.

In Perth Amboy conditions are very different from those which prevail in the localities above referred to, and the risk of introducing pestilential diseases is far greater, for vessels enter directly from the sea without being subject to visitation by the New York quarantine officer, and, at times, without being visited by the boarding officer at Perth Amboy.

An examination of the laws of New Jersey shows that the only acts on the statute-books which are designed to prevent the admission of infected persons into the State are those approved November 19th, 1799, April 4th, 1871, and February 18th, 1882, and it will be seen that these acts fall far short of providing the safeguard which the public interests demand.

In an interview with the health officer of the port of New York, February 12th, 1897, said officer expressed his readiness to receive at the New York quarantine disinfecting station, in the lower bay, any infected vessel arriving at any of the near-by ports of New Jersey, including Perth Amboy, together with passengers, crew and cargo, and to there disinfect, and, if necessary, detain said vessel, and payment for said service will be obtained from the lawful fees paid by said vessel, and without expense to the State of New Jersey.

The said health officer of the port of New York also expressed his willingness to send telegraphic notice of the probable time of arrival at any port or place in New Jersey of every quarantinable vessel which may be allowed to pass either of the New York quarantine stations, and which vessel is bound for any such port or place in New Jersey. Said health officer also offers to keep the State board of health of New

Jersey at all times informed of the number of vessels in quarantine, of the number of sick in the floating hospital and their diseases.

For the correction of the defects which exist in relation to the maritime quarantine service of the State, legislation it necessary, and an outline for a bill designed to accomplish this purpose is herewith submitted.

Very respectfully,

HENRY MITCHELL,

Secretary State Board of Health.

TRENTON, N. J., February 16th, 1897.

After modifications the bill submitted by this board was passed by the legislature, and it was approved April 9th, 1897.

But thus far no improvement has occurred in the service at the port of Perth Amboy, and there is no prospect that any better protection will be afforded to the public health interests of the State at that point until the system of inspection now in operation there shall be replaced by an entirely different method.

This board recommends that the next step to be taken in the effort to obtain a more efficient inspection service at that port shall be the repeal of that portion of the act of April 4th, 1871, which creates the mayor and aldermen, ex-officio, a board of health, and that the local board of health of that city shall be authorized to exercise the same authority in relation to the maritime quarantine department that is now exercised by local boards of health in Jersey City, Hoboken and in the other ports and harbors in the State.

The reports required by the act approved April 9th, 1897, have not been furnished for the three months which elapsed between the date when the law became operative and October 1st, but the following statement from the reports of inspections on file in the office of this board show the methods which are at present being employed in the various ports in the State:

## PORT OF PERTH AMBOY.

"This port is within the city sanitary district. The inspection was made November 24th. The names of the members, officers and employes of the local board of health are as follows:

"E. V. R. Sofield, President.

"F. J. Richters, John Taft, S. W. Schoonover, Frank Neer, F. O. Pierson, Louis Garben.

"E. A. Hultz, M.D., Inspector.

"Adrian Lyon, Attorney.

"J. H. Wilson, M.D., is appointed Port Physician by the board and is charged with the medical oversight of the port.

"The depth of water at low tide is twenty-two feet at the wharves. The vessels which have arrived at this port during the year ending October 1st, 1897, are as follows:

" Foreign Ports.....	30
" Domestic.....	71

"Thirty of the vessels arriving from domestic ports were from south of Cape Henlopen.

"But one vessel has been inspected by the Port Physician, as all had bills of health from New York quarantine. The only ballast has been water in the tanks, which is discharged upon arrival.

"The port depends almost wholly upon the New York quarantine for protection against the introduction of communicable diseases, and any vessel having a clean bill of health from the New York quarantine authorities, which has been obtained within twenty-four hours, is allowed to enter the port of Perth Amboy without further detention.

"The Port Physician receives only the fees for examination of vessels, and at present nothing is received, on account of the arrangement with the port of New York, above stated.

"The captains of tug-boats and also shipping men coming to the port have been supplied with copies of the new law regulating quarantine at this port and other ports in New Jersey."

#### HOBOKEN.

"The following facts as to maritime quarantine at this point were obtained November 27th, 1897. The names of the members and officers of the local board of health are as follows:

- "E. T. Steadman, President.
- "L. S. Fugazzi, S. A. Heffer, M.D., Palmer Campbell, August Grassman.
- "W. J. Arlitz, Health Warden.
- "Horace Allen, Attorney.
- "G. M. Sinclair, Plumbing Inspector.
- "Antonio Granelli, Inspector.
- "James Hayron, Clerk.

"No officer has been designated to supervise quarantine matters. No special provision is made to prevent the introduction of infectious diseases, as reliance is placed upon the inspection at the port of New York, and upon the bill of health presented from the health officer at that point. Before a cargo is discharged a permit is obtained from the city board of health. The shippers pay the board of health \$15 a year to cover the issuing of permits. There is no examination or inspection before these permits are granted. The local board of health has had some trouble in dealing with cases of contagious disease on vessels after arriving at the docks. Last January a case of scarlet fever was brought to the city and the patient died the second day after removal from the ship to the hospital. Three cases of diphtheria occurred on a vessel, and the local medical officer cared for the cases. Cases of measles are quite frequently landed. There is now an arrangement by which the companies are to bear the expense of caring for such cases. The discharging of bedding is not carried on by so many companies as formerly. Two lines, the North German Lloyd and the Holland American, still follow the practice.

"Where there has been contagious disease on a vessel coming across the ocean the bedding and mattresses of the ones attacked are immediately destroyed by burning and the bedding exposed to infection, upon arrival in port, is placed in the steerage-room and live steam is turned on. Nothing is known as to the amount of steam, the pressure or its effectiveness in rendering the materials safe for taking from the ship into the city.

"The bedding and mattresses are sold to John H. Chatfield, who pays the board of health \$10 a year for his permit.

"In former years the companies were accustomed to send a certificate to the board of health stating that the bedding had been disinfected with live steam, but no such certificates are now received.

"There is evidently need at this port of a more thorough knowledge on the part of the local authorities as to exactly how the disinfection of bedding is carried on, and some duly appointed officer should satisfy himself in each instance that the work has been properly conducted."

## JERSEY CITY.

"This port is under the supervision of the local board of health, which is composed of the following members and officers:

- "H. H. Abernethy, President.
- "P. W. M. West, John S. Feeney.
- "G. T. Robinson, Clerk.
- "D. W. Benjamin, Inspector.
- "J. H. Atkinson, Attorney.

"D. W. Benjamin, City Health Inspector, has charge of the quarantine service.

"The depth of water at the public docks is thirty feet.

"One hundred and fifty vessels obtained permission from the health department to land cargoes during the year ending October 1st, 1897. Two others were inspected on account of having cargoes of decaying lemons.

"No statistics are kept of those arriving from foreign and domestic ports, and nothing is known as to how many arrive in ballast.

"When stone is the ballast, it is usually discharged in Brooklyn.

"The city relies entirely on the New York authorities in quarantine matters, and in only one instance last year did a vessel come directly to Jersey City. This was in the case of a schooner coming from Boston. The officer of the port of New York telegraphed to the Health Inspector of Jersey City, asking that the vessel should not be allowed to come to dock, and upon arrival it was sent immediately to the New York station.

"The compensation received by the local board of health for permits to land cargoes is at present twenty-five cents, but the board has under consideration an increase of the amount charged to \$5.

"In the event of any contagious disease developing on a vessel, the captain would be ordered to return to the New York quarantine station, or those ill would be cared for by the city."

Local Sanitary Administration is improving from year to year, notwithstanding the embarrassment due to the fact that skilled inspectors are not yet available. The president and trustees of Rutgers College have voted to take up the examination of applicants for appointment to the office of sanitary inspector, however, and we may therefore expect that improvement in this department will now make more rapid progress.

Until local boards, particularly the boards in small municipalities and in townships, shall become more efficient than they are at present, the influence and aid of the State board of health in assisting in the local administration, is not measurable. Municipal concerns become yearly more complex and the relations which they bear to one another become more numerous and more in need of adjustment. It is more difficult every succeeding year to obtain special local powers by legislative act, and certain conditions affecting the public health must, of necessity, continue to be controlled by a central authority. In the better organized districts there is still but little uniformity in the application of the health laws and ordinances, and many communities are solving anew the problems which have already been worked out in other towns. In one city, for instance, the householders are urged to burn their garbage in the kitchen range, while in another town similarly situated and no more densely populated, the health board will not permit any garbage to be burned on private premises.

Complaints were received during the summer against the method employed in certain districts in dealing with reported cases of the preventable diseases, and the following circular letter was issued:

Circular Letter 28

September, 1897.

OFFICE OF THE  
BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

*To Local Boards of Health:*

Complaint has been received by the State board of health that when reports of communicable diseases are made by physicians to the clerk or other designated officer of the local board of health, it is the usual practice in some localities for the inspector to visit the patient and express an opinion as to the character of the ailment.

This is a meddlesome and entirely unjustifiable proceeding, and local boards should issue instructions to their agents in districts where this practice has been followed, directing that hereafter no such discourtesy toward the attending physician will be allowed.

The law provides (see section 12, sub-section 3, of the act approved March 31st, 1857) that ordinances may be made to secure a medical examination for the purpose of diagnosis in cases where there is reason in doubt the correctness of the opinion of the physician in attendance, but all such examinations should be conducted wholly within the letter and spirit of the ordinance and should never be resorted to except in cases where it is reasonable to apprehend that an error has been made, and that the public health is endangered by mistakes on the part of the person reporting the case.

The following ordinance has been adopted in some localities:

"Whenever it shall be deemed necessary by this board to establish the true character of any disease which they may believe to be communicable, a medical examination of



the person or persons affected by such disease may be ordered, and such examination shall be permitted by all attendants and persons. Any person or persons offending against any of the provisions of this ordinance shall forfeit and pay a penalty of fifty dollars."

The rights of the attending physician should be respected by the health officer, and he should be at all times treated not only with professional courtesy but also with careful regard for his business interests.

Very respectfully,

HENRY MITCHELL,  
Secretary.

Attention is called to section 2 of the act approved February 22d, 1888, which reads as follows:

"2. *And be it enacted*, That any such board of health may, by resolution, delegate any portion of its powers to any member of the board or to any officer thereof, to be exercised only when the board is not in session."

There has been some doubt concerning the constitutionality of this provision, and local boards of health are advised that it will be unnecessary to take action under this section of the act.

While in many sanitary districts ordinances have been adopted regulating the plumbing and drainage of buildings, little attempt has yet been made to secure adequate ventilation. Section 1 of the act above referred to, and also section 1 of the act approved February 25th, 1889, authorizes the control of this extremely important feature of the construction and management of buildings. Some recent investigations into the air-supply of churches in one of the cities of the State has shown that the necessity for providing for the exit of the air after it has been vitiated is not always understood by the janitor or person having charge of the ventilating openings, and the inspection also showed that none of the buildings examined were found to be provided with air exits of sufficient dimensions to permit of the escape of the used-up air. Systematic cleaning of these buildings was found to be regularly performed, but it was all directed toward the removal of unsightly accumulations, and was not conducted with a comprehension of the germicidal value of sunlight and fresh air.

Progressive health officers are asked to observe the movement which has been inaugurated in Gloucester county, New Jersey, for the association and co-operation of local health boards, and it is hoped that

similar associations will be formed in other portions of the State. Some account of this movement appears in the report of the local board of health of Woodbury.

**Nuisances.**—There seems yet to be uncertainty in the popular mind concerning the relation of the sanitary authorities to the abatement of effluvium nuisances. This is well illustrated by the demands made upon the Kearny board of health in the case of the "meadows nuisance," so called, which consists of an immense mass of stable manure which is deposited by private parties on the Newark meadows near the Hackensack river.

The following letter from Charles L. Corbin, Esq., states the limitations which should govern boards of health in dealing with questions of this character:

JERSEY CITY, N. J., June 24th, 1897.

Henry Mitchell, M.D., Secretary State Board of Health, Trenton, N. J.:

DEAR SIR—I have examined the question of the manure-pile nuisance with some care. For such nuisances there are several remedies.

Anyone whose property is injured by the nuisance can bring suit at law for damages and can renew such suit from time to time and recover such damages as he can show he has sustained. He may also, on establishing that the nuisance does injury to his property, procure an injunction from the Court of Chancery.

Those who are not injured in their property, but who are annoyed by the nuisance, have no personal action, but their remedy is to apply to the grand jury for an indictment. If a number of persons annoyed by the nuisance would join and collect proof and bring it to the attention of the grand jury and thereby procure an indictment and conviction, it would abate the nuisance more quickly than any other remedy. Complaints could be renewed from time to time and indictment after indictment found, and the acquittal of the parties on one indictment would not prevent their conviction on another, for a continuing nuisance.

There remains the remedy through the action of the State board of health. This is a narrower remedy than those referred to, for the reason that it is not enough to show that there is a nuisance and that there are noisome smells. The board of health has no jurisdiction unless it can be shown that the nuisance is to a substantial extent injurious to public health. Should the parties complaining of this nuisance be able to collect and bring to the board satisfactory evidence that in a number of specified cases it can be established that the health of individuals named has suffered from the nuisance, and that it is likely to continue to cause injury to health, it would then be competent for the State board to take action by bill for injunction, on default of the local board. But it ought not to be overlooked that the proof in the enforcement of this remedy will be more difficult than that required for the other remedies referred to. A serious nuisance might be shown by reason of offensive odors, and this would be sufficient proof to warrant an indictment or a suit at law or in equity by a citizen especially injured. The State board must further prove danger to public health.

Yours truly,

CHARLES L. CORBIN.

The **Marriage License Law**.—The act approved May 18th, 1897, providing that a license shall be procured before a marriage shall be performed in cases where both parties are non-residents of the State, has now been in operation several months, and the number of returns under the act thus far received at the office of the State board of health is as follows :

Countries.	Marriage Licenses.
Atlantic.....	10
Burlington.....	2
Camden.....	10
Cumberland.....	1
Essex.....	21
Gloucester.....	5
Mercer.....	14
Passaic.....	3
Union.....	2
Total.....	63

**Water-Supplies**.—The pollution of streams in New Jersey has received but little attention from the legislature, and it has not yet been made the official duty of any bureau or department of the government to guard the public interests relating to this subject by bringing to the notice of the courts the defilement of the natural waters of the State.

The only law which at present limits stream pollution is the following :

[Chapter 157, P. L. 1893, p. 282.]

1. That if any person or persons shall throw, cause or permit to be thrown into any reservoir, or into the waters of any creek, pond or brook of this State which runs through or along the border of any city, town or borough of this State, or the waters of which are used to supply any aqueduct or reservoir for distribution for public use, any carcass of any dead animal, or any offal or offensive matter whatsoever calculated to render said waters impure, or to create noxious or offensive smells, or shall connect any water closet with any sewer, or other means whereby the contents thereof may be conveyed to and into any such creek, pond or brook, or shall so deposit or cause or permit to be deposited any such carcass, offal or other offensive matter that the washing or waste therefrom shall or may be conveyed to and into any such creek, pond, brook or reservoir, such person or persons shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by a fine not exceeding one thousand dollars, or by imprisonment not exceeding two years, or both.

Approved March 14th, 1893.

It will be seen that no regulation has been made for preventing unlimited pollution of any stream which is not already in use for supplying water for public use, thus leaving each community to turn its sewage into the handiest waterway which happens to be within reach, so long as neighboring municipalities, down-stream, have not exercised their rights to use the water for supplying water works. It is only when a nuisance has in fact been produced that this law authorizes action to stop the evil.

Undoubtedly this is one of the most urgent of the sanitary questions which now present themselves for legislative consideration, and if other rivers and streams of the State are to escape the fate which has overtaken the Passaic, there should be immediate action to prevent further contamination by the discharge of unpurified sewage into such waters.

In the address of C. P. Bassett, C.E., read before the New Jersey Sanitary Association in 1893, he says :

The principle of providing some supervisory authority to secure the enforcement of the laws devised to prevent stream pollution, which is entirely lacking in our legislation, is practically essential, as has been shown by experience elsewhere and manifested in the result secured. Whenever active efforts have been made to preserve the purity of streams in the midst of dense populations this requirement has been considered uniformly essential. The River Pollution Commission and the various conservancy boards in Great Britain, similar boards in France and Germany, the Massachusetts and New York State boards of health, to which are delegated powers similar to those exercised by the foreign boards mentioned, have accomplished the results that can best be cited as making progress in conserving streams.

The essential feature in all these cases has been a board with power to investigate the condition of streams and the character of liquids discharged into them, and vested with sufficient authority to summarily prevent injurious pollution.

In some cases this has required supervision of works erected to purify factory waste or town sewage by the board, and has necessitated the power to approve or reject plans proposed for the purpose. The board then becomes the arbiter of the standards of purity required in liquids entering various streams and different parts of the same stream; the conditions existing in each case to determine the purity requisite in affluent liquids.

Manifestly impure waters safely discharged into one stream should not be allowed to enter certain other streams. The uses of the two streams may be different, or their ability to destroy filth—their digestive power—may not be the same.

Hence the objection to an arbitrary standard of purity involving no investigation or knowledge of the special conditions of each case.

Defendants of the law in this State as now framed may argue that if the statutes forbid all stream pollution under sufficient penalties, it will be possible for any person

or persons feeling themselves aggrieved by existing pollution to secure relief through the courts. Experience does not support this view. It is true that isolated cases exist where specific pollution has been prevented, but it is equally true that numerous cases of pollution exist along every stream of the State and pass unchallenged. Stream pollution is cumulative. The purity of a stream is generally endangered as the moral tone of the community is assailed, by the accumulation of uninterrupted deteriorating influences. A stream has reached the danger limit at a given point, not so much on account of the pollution received from the last mill or hamlet passed as from the numerous other pollutions added in its course, any one of which would have made but a slight impression on its purity, but which, added at intervals, in the aggregate finally prevail over it. It is difficult to reach the scattered evil, and there is therefore great difficulty, as recent cases in the courts of this State have abundantly shown, in practically preventing general pollution under the existing law. \* \* \* I am not sure but that the most satisfactory method for caring for the existing evil is to place the care of the streams specifically in the hands of the State board of health, or some department thereof, as is done in New York or Massachusetts. Such an arrangement would have numerous advantages, but it appears to me that under whatever auspices the control is secured the combined services of a sanitary engineer, skilled in the various hydraulic questions involved and familiar with the processes available for sewage and filth purification, and the results attainable from each; a biologist, competent to conduct the most recently perfected processes of investigations regarding disease transmission, and the recognition and isolation of various micro-organisms; and a chemist equipped with the latest knowledge and appliances for water analysis, should be secured to effect the results which science announces as essential to the well-being of the commonwealth.

Complaint was received by this board from the city of Millville in June, 1897, stating that the public water-supply was suffering contamination because of the pollution of one of the tributaries of the Maurice river, and an investigation made June 30th, 1897, showed that extensive defilement of the stream referred to was occurring within the boundaries of the borough of Vineland. The following letter was sent to the local board of health of Vineland, and a copy was sent to the Millville Water Company:

OFFICE OF THE BOARD OF HEALTH  
OF THE STATE OF NEW JERSEY.  
TRENTON, July 14th, 1897. }

To the Board of Health of the Borough of Vineland, N. J.:

GENTLEMEN—An inspection was made by an officer of this board, June 30th, 1897, of the sources of the public water-supply of the city of Millville, and the investigation disclosed the following facts:

The water for the public supply of Millville is taken from the Maurice river, and about three miles above the dam a branch or creek joins the river. This branch is

made up of two smaller streams, and one of these brooks extends up to and into the borough of Vineland.

It was observed that where this brook is crossed by the Malaga road the water was discolored by dyestuff and the odor from the water was offensive. The discoloration and foulness of the water was found to increase above the said road and above the railroad the water of the brook was extremely filthy.

Further investigation showed that dyestuffs and other waste liquids from the rug factory of Thomas Hirst were discharged into this brook, and it was learned that the organic matters escaping from this factory, mixed with soda and sulphuric acid, constitute a rapidly decomposing mass which, after undergoing putrefaction, becomes exceedingly disagreeable to the senses.

The quantity of waste fluids discharged daily from the rug factory into the brook is believed to be about 100,000 gallons. Beyond the factory the water of the brook was found to be polluted by the direct discharge into it of gutter-water, and said gutter-water is made up, to a considerable extent, of house sewage discharged from a six inch drain in Almond street, and also from other sources.

The pollution of the said brook constitutes a source of contamination of the waters of the Maurice river and endangers the health of the citizens of the city of Millville, and you are hereby advised that immediate steps should be taken to prevent the further discharge of filthy liquids into said brook.

Your attention is called to the provisions of chapter 157 of the laws of 1893, and you are urged to at once enforce this law against all persons in the borough of Vineland who shall be found by you to be polluting the waters of the said brook.

Very respectfully,

HENRY MITCHELL,  
Secretary.

The following reply was received:

OFFICE OF THE BOARD OF HEALTH,  
VINELAND, N. J., July 20th, 1897. }

Henry Mitchell, M.D., Secretary State Board of Health, Trenton, N. J.:

DEAR SIR—Your esteemed communication in regard to pollution of Millville water supply at hand.

The Vineland board will take immediate action.

Yours very respectfully,

JOHN L. HALSEY,  
Secretary.

In reply to an inquiry, the following letter was received:

VINELAND, N. J., October 9th, 1897.

Henry Mitchell, M.D., Secretary State Board of Health, Trenton, N. J.:

DEAR SIR—Yours of the 6th inst. in regard to the drainage into the Millville water-supply is at hand.

In reply I will say that Mr. Thomas Hirst, owner of the rug factory, met with our board Thursday, the 7th inst., and there stated that he was taking action to abate

the nuisance, and that he is going to build a filter and has received several bids for the contract, and hopes soon to have everything satisfactory.

Yours very truly,  
 JOHN L. HALSEY,  
 Secretary.

At a meeting of the State board of health held October 8th, 1897, the committee on public water-supplies was directed to confer with the sanitary and municipal authorities of Vineland for the purpose of endeavoring to secure action which will cut off the discharge of all unpurified waste fluids into the stream referred to.

TABLE SHOWING PLACES IN NEW ENGLAND HAVING PUBLIC WATER-SUPPLIES AND SEWERS, WITH SOME DATA AS TO EACH.

WATER

Place	County	When introduced	Ownership	Source of supply	Storage capacity— in millions	Taps	Hydrants	Average consump- tion—gallons	Pressure—pounds	When introduced	Separate or Combined	Disposal
Arlington	Hudson	1885	City	See Newark	106,000	1,028	61	1,000,000	45	1870	Separate	Passaic river.
Atlanta	Atlanta	1843	City	Artesian filters	250,000	3,305	474	4,500,000	45	1850	Combined	Tide-water.
Atlantic Highlands	Monmouth	1873	Borough	Artesian and stream	250,000	2,305	74	109,428	130	1880	Combined	Tide-water
Bayonne	Hudson	1855	Borough	Artesian—Piquanock	100,000	2,500	400	1,300,000	35	1850	Combined	Tuckerton bay.
Belleville	Essex	1854	Village	Artesian	100,000	250	103	50,000	40	1850	Combined	Tuckerton bay.
Belmar	Monmouth	1857	Private Co	From Newark	33,020	175	25	.....	.....	.....	Separate	.....
Beverly	Berkshire	1875	Private Co	From Newark	.....	.....	.....	.....	.....	.....	Combined	.....
Beverly Falls	Berkshire	1887	Private Co	From Hoboken	.....	310	44	.....	65	.....	Combined	.....
Blairtown	Essex	1889	Private Co	From Hoboken	112,000	40	12	.....	.....	.....	Combined	.....
Bloomington	Morris	1855	Private Co	Mountain stream	500,000,000	.....	56	500,000	20-105	.....	Combined	Passaic river.
Bordentown	Burlington	1848	City	Mountain stream	500,000	485	60	500,000	30	.....	Combined	Delaware river.
Bordentown	Burlington	1858	City	Mountain stream	12,000,000	.....	.....	.....	.....	.....	Separate	Delaware river.
Brooklyn Park	Morris	1880	Association	Multiple brook	1,500,000	1,700	180	630,000	40	.....	Combined	Delaware river.
Bridgeton	Cumberland	1878	City	Lake Hopatcong	282,000	1,780	118	450,000	50	.....	Combined	Delaware river.
Burlington	Burlington	1873	City	Hopkings River	8,000,000	7,700	86	850,000	60	1860	Combined	Delaware river.
Burlington	Burlington	1873	City	Artesian	150,000	.....	.....	.....	.....	.....	Combined	Cape May creek.
Cape May City	Cape May	1874	Private Co	Surface wells	.....	.....	.....	.....	.....	.....	Combined	Delaware river.
Carlsbad	Cape May	1885	Private Co	Hoboken	.....	.....	.....	.....	.....	.....	No sewers	.....
Carlsbad	Cape May	1887	Private Co	See Woodbridge	51,800	45	40	.....	60	.....	No sewers	.....
Chatham	Essex	1885	Private Co	Artesian wells	1,000,000	.....	24	.....	.....	.....	Combined	.....
Chatham	Bergen	1887	Private Co	Mountain springs	.....	.....	.....	.....	.....	.....	Combined	.....
Clinton	Essex	1891	Private Co	See Newark and Irvington	857,000	205	17	25,000	.....	.....	Separate	.....
Collingswood	Camden	1885	Private Co	See Valsburg	40,000	18	6	15,000	24	1880	Separate	Railway river.
Columbia Heights	Union	1886	Private	Wells at Plainfield	172,000,000	.....	45	75,000	125	.....	No sewers	.....
Darlington	Monmouth	1885	Borough	Artesian surface	.....	.....	.....	.....	.....	.....	No sewers	.....
Deerstown	Sussex	1887	Private Co	From Hoboken	6,000,000	2,800	500	.....	45	1889	Separate	Passaic river.
Deerport	Morris	1887	Private Co	Spring	.....	.....	.....	.....	.....	.....	Separate	.....
East Orange	Essex	1882	Private Co	Wells	.....	.....	.....	.....	.....	.....	Separate	.....

SEWERS



TABLE SHOWING PLACES IN NEW JERSEY HAVING PUBLIC WATER-SUPPLIES AND SEWERS, WITH SOME DATA AS TO EACH—Continued.

Place	County	When introduced	Ownership	Source of supply	Storage capacity— gallons	Taps	Hydrants	Average consump- tion—gallons	Pressure—pounds	SEWERS		
										When introduced	Disposition	
Barclay	Monmouth	1885	Town	From Somerville	850,000	425	100	200,000	45	No sewers	Schmans creek	
Bed Bank	Bergen	1885	Private Co	Artesian wells	70,000	105	53	50,000	180	No sewers	Delaware river	
Ridgefield Park	"	1889	"	"	1,000,000	105	53	50,000	180	No sewers	{Creek to Station Island sound Hack river	
Riverton	Burlington	1887	Private Co	Well	1,000,000	105	53	50,000	180	No sewers	Creek	
Lockeaway	Morris	1887	"	Brook	1,000,000	105	53	50,000	180	No sewers	"	
Roselle	Union	1883	"	From Elizabeth	42,000,000	71	400,000	37	400,000	150	No sewers	Shrewsbury river
Rutherford	Bergen	1883	City	From Hoboken	42,000,000	71	400,000	37	400,000	150	No sewers	"
Staten Island	Bergen	1883	City	From Hoboken	42,000,000	71	400,000	37	400,000	150	No sewers	"
Schleicher	Bergen	1883	City	From Hoboken	42,000,000	71	400,000	37	400,000	150	No sewers	"
Seabright	Monmouth	1883	Private Co	From Long Branch	52,700	105	62	750,000	45	No sewers	"	
Sea Isle City	Cape May	1883	Private Co	From Perth Amboy	514,000	4	130	130,000	120	No sewers	"	
South Amboy	Middlesex	1884	Borough	From Perth Amboy	See Summary	4	140	500,000	50-80	No sewers	"	
South Orange	Essex	1889	Village	From Summit	115,300	700	80	500,000	27-40	No sewers	Purifying process	
Stockton	Union	1883	Private Co	Wells	27,000,000	150	150	1,500,000	27-40	No sewers	Delaware river	
Stockton	Bergen	1883	City	From Hoboken	27,000,000	150	150	1,500,000	27-40	No sewers	"	
Trenton	Mercer	1885	City	From Hoboken	27,000,000	150	150	1,500,000	27-40	No sewers	"	
Union	Union	1883	City	From Hoboken	27,000,000	150	150	1,500,000	27-40	No sewers	"	
Union Township	Union	1883	City	From Hoboken	27,000,000	150	150	1,500,000	27-40	No sewers	"	
Valhalla	Essex	1888	Private Co	From South Orange	84,000	110	50	125,000	40-65	No sewers	Shablecon brook	
Vincetown	Essex	1888	Private Co	Driven wells	79,000	183	50	125,000	40-65	No sewers	"	
Washington	Bergen	1882	"	From Hoboken	1,000,000	400	30	60	60	No sewers	"	
Washington	Warren	1882	"	From Hoboken	1,000,000	400	30	60	60	No sewers	"	
Wenonah	Gloucester	1885	"	From Hoboken	1,000,000	400	30	60	60	No sewers	"	
Westfield	Union	1885	"	Spring	69,000	289	15	30	30	No sewers	Purifying process	
Westfield	Union	1885	"	From Plainfield	69,000	289	15	30	30	No sewers	"	
West Hoboken	Bergen	1884	"	Artesian	69,000	289	15	30	30	No sewers	"	
Wildwood	Cape May	1887	"	From Wildwood	1,250,000	750	82	300,000	45	No sewers	"	
Woodbridge	Middlesex	1887	Village	From Wildwood	1,250,000	750	82	300,000	45	No sewers	"	
Woodbridge	Middlesex	1887	Village	From Wildwood	1,250,000	750	82	300,000	45	No sewers	"	
Woodstown	Salem	1892	Private Co	Artesian	874,400	127	55	20,000	65	No sewers	Woodbridge creek	

Foods.—The laws of New Jersey relating to the adulteration of food and drugs have been passed in the interests of trade, but incidentally they have hygienic relations. Originally these laws were enforced by the State board of health, but at present they are in the hands of the State dairy commissioner.

An act approved March 12th, 1884, provides that "if any person or persons shall knowingly buy or sell, or cause to be bought or sold, any animal or animals affected with pleuro-pneumonia, rinderpest or any other contagious or infectious disease, or that has been exposed to a contagious or infectious disease, or is a part of any herd or stock held in quarantine," such person or persons shall be deemed and adjudged guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine not exceeding \$200, or imprisonment not exceeding one year, or both, at the discretion of the court. It has been found that this act does not prevent designing dealers from sending to market carcasses of tuberculous beef, for, in cases where the diseased character of the meat is discovered, the guilty parties coolly claim that they did not "know" that the animal was sick. An amendment to this act, striking out the word "knowingly," would probably put an end to the business of buying up tuberculous animals and slaughtering them for sale for beef.

In 1895 (P. L., page 752) an act was passed enabling the State board of health to prohibit the sale and transportation of any milk which may have been produced, stored, kept or found upon any premises infected by persons suffering from communicable disease. There is some ambiguity about the word "prohibit," which would be cleared away if authority was also given to seize and destroy all such milk.

Local boards of health are empowered (P. L., 1887, chapt. 68) to make ordinances "to prevent the sale or exposure for sale of any kind of meat or vegetable that is unwholesome or unfit for food," but few boards have exercised this authority.

The act approved March 18th, 1885, and the supplement approved March 8th, 1888, explicitly and clearly place upon local boards of health the duty of protecting the public against the cutting and sale of impure ice. The powers conferred by these acts may be exercised without making ordinances, and the authority to prevent the spread of disease by means of ice from polluted waters is always available.

Disinfection.—The purifying of apartments, which have been occupied by persons affected by the dangerous communicable diseases,

has undergone a revolution in the course of the discussion and experimentation which has occurred during the past year. The exact methods of the laboratory have been extended to the practice of the sanitary inspector, and progressive officers have demonstrated their results by the occasional exposure of bacterial cultures to the influence of the germicidal agents employed in the treatment of infected premises. Formaldehyde has claimed a large share of attention, and the experimental results obtained from its use have been highly gratifying. Much objection has been made to the various forms of apparatus which abound in the market for generating the gas, because of their inefficiency or on account of accidents due to explosions or the ignition of the alcohol in the lamp receptacle, but doubtless these difficulties will be overcome.

**Sanitary Inspection Service.**—Eleven years ago the annual report of this board contained the following remarks: "At one time sanitary science and art were regarded as simply incidental to other departments of knowledge. Hence, it was taken for granted that every physician could give sanitary advice or perform the duties of a sanitary officer. Not only this, but builders, plumbers, architects, engineers, &c., were called upon to advise outside of their respective callings. It is true of all these departments, and especially of medical knowledge, that they furnish a good foundation for sanitary acquirements. But it is equally true that sanitary fitness for administrative work requires special training and the acquirement of knowledge from various departments. It is not until one comes to recognize it as demanding study and practice that either it or the individual find their proper place."

Last year the statement was made in the annual report that an arrangement was in progress whereby instruction would be offered in the science and art of hygiene at Rutgers College, and now we are glad to add that a board of examiners has been appointed and that an announcement will soon appear, giving the dates when the examinations will occur and the subjects which will be taken up. Certificates of fitness will be issued to three classes of applicants, viz.:

1. Inspectors of foods.
2. Inspectors of nuisances.
3. Inspectors of plumbing.

The fee for the first examination will be \$5, and for a subsequent examination for an additional certificate, \$2. It is expected that regular instruction will be furnished in the course of another year, and in the meantime these certificates will be furnished to those applicants who have prepared themselves for the duties of sanitary inspectors. The board of examiners consists of five persons, as follows:

1. Air, water, soil, food, lighting, heating, ventilation. Prof. Edward B. Voorhees.
2. Infectious diseases, isolation, disinfection. W. K. Newton, M.D.
3. Nuisances, disposal of waste materials. J. L. Leal, M.D.
4. Sewerage, plumbing, drainage, sanitary construction of buildings. C. F. Brackett, M.D., LL.D.
5. Sanitary laws. Hon. W. M. Lanning.

**Legal Opinions and Decisions** relating to the enforcement of sanitary laws and ordinances are being much sought after by local boards of health, for the legal department finally becomes the only effective influence in dealing with some individuals and with certain classes of nuisances, and in every community the authority of the board of health and the judiciousness of their procedures will, in course of time, be brought before the court for review. Precedents, therefore, are greatly in demand.

The board of health of Ridgefield township, Bergen county, was recently non-suited in an action brought under an ordinance, because the defendant was able to show that the publication of the ordinance was irregular. The newspaper in which the ordinances were printed had not been in existence one year, and the court held that it was, therefore, not recognized by the law as a newspaper.

In Asbury Park a livery stable owned by Combs Brothers had for several years been complained of by the owners of adjoining boarding-houses, and the complaints continued after the stable had in all particulars been made to conform to the requirements of the health laws and ordinances. The stable floor was made of coal-tar concrete, so graded that all fluids falling upon it would flow toward a central point and there discharge into the sewer. Wooden racks were laid upon the concrete in the stable, and the whole of the floor was frequently flushed by the use of a hose. All manure was placed in portable boxes about three feet square and removed daily. But notwithstanding all of these precautions, the stable odors permeated the atmosphere of the locality and constituted a nuisance which interfered

with the business of the owners of the boarding-houses in the neighborhood. The noises of the stable were also objected to. An appeal was made during the past summer to the Court of Chancery for an order requiring the abatement of the nuisance, and an injunction was issued restraining the owners from continuing to carry on the livery stable business in the vicinity referred to.

The following question was propounded by a local board and answered by their attorney:

"Can all of the provisions of the various sub-sections of section 12 of the act approved March 31st, 1887, be enforced as well under rules and regulations as they can be under ordinances? No. Rules and regulations cannot be made to carry a penalty, and their use is only desirable when an emergency occurs and when no ordinance exists which meets the necessity for prompt action for the protection of the public health."

In Indiana the question as to who shall pay for preventing the spread of infectious diseases has been before the court (April 2d, 1897), and the decision rendered holds that under particular circumstances it may be the duty of the municipal authorities to supply medical service, medicines, nurses, shelter, fuel, food and raiment for patients taken for the time being under the control of the board of health and placed in such situation that such provision would be a necessary part of the protection of the public health.

The court decided in the case of the Board of Commissioners of Jay County *v.* Fertich, that when the patients remain in their own homes and are not shown to be indigent, but, for all that appears, are amply able to pay for medical treatment of the disease from which they are suffering, and the case differs from other sickness, in the fact that the disease is contagious, and that, therefore, for the protection of the public health, they are quarantined, the only expenses which should fall upon the county, within the intent of the statute, are such expenses as are properly attributable to measures taken for the prevention of the spread of the disease. It draws the line at requiring the afflicted persons to defray expenses not incurred for their own benefit.

The opinion expressed in the following letter has general application, and the principles laid down for the guidance of health boards in their dealings with the governing body in municipalities in securing improvement in the sanitary condition of public institutions will doubtless be useful in many localities:

TRENTON, N. J., September 1st, 1897.

Henry Mitchell, M.D., Secretary of State Board of Health:

DEAR SIR—Your first question is as follows: "What procedures, if any, may be taken by a local board of health to secure ventilation of a city prison?"

In my judgment no effective procedure can be had except to prescribe the manner of ventilation by ordinance. If a proper ordinance be passed it will furnish the local board with the groundwork upon which to ask the Supreme Court for a *mandamus* to compel the county board of freeholders properly to ventilate a county prison. Of course, the same procedure might be had against city officials to compel proper ventilation of a city prison. I think this is the only practicable course that a local board can adopt where the city or county prison is improperly ventilated. The case of the Camden Board of Health against the Camden Board of Chosen Freeholders in 21 *Vroom*, page 396, seems to indicate that the above-suggested course of procedure is the proper one.

Your second question is: "Shall the facts be presented to the grand jury, or shall the board sue for penalty by virtue of an ordinance under the authority of section 1, sub-section 2, of the act approved February 22d, 1888?"

Of course, the facts can be presented to the grand jury. Public officials are bound to keep public buildings in a proper condition. If they keep them in an unhealthy condition they are unquestionably indictable, not perhaps in their individual capacities, but as a corporate body. A suit brought to recover a penalty under the section above referred to will necessarily be uncertain, both as to whether a judgment can be obtained under the act and as to whether such a judgment, if obtained, would effect a remedy, or tend to effect one. In my opinion, the better course to be pursued is to provide first by ordinance for the proper ventilation of public buildings, and then, in case the public officials having the power to provide proper ventilation fail to do so, to apply to the Supreme Court for a *mandamus* to compel them to perform their duty.

Yours truly,

W. M. LANNING.

**Plumbing and Drainage.**—It is found that a skillful and honest inspection service, conducted under the provisions of the acts approved February 22d, 1888, and February 25th, 1889, provides every needful safeguard against ignorance and fraud in the construction of house-drainage works. The essential feature is integrity on the part of the inspector, and where this attribute is secured by local boards no difficulty is found in obtaining excellent work from the plumbers. The plumbing inspector is, in fact, a detective, and the character of the work which it is his duty to perform can be readily comprehended by any intelligent man who will apply himself to learn the principles upon which the art of drainage and plumbing is based, and who will inform himself concerning the tricks and devices which have been employed to cheapen a job, and which tricks have been resorted to so often by unprincipled and irresponsible individuals that



the public has at last risen up and called upon the health authorities to furnish a defense against further imposition.

The law relating to this subject is, therefore, all-sufficient, and there only remains a need of active administration on the part of local boards of health and keen and trustworthy inspectors to detect dishonesty and trickery in the construction of the works. It is no part of the duty of a health officer to devise systems of drainage for householders, but only to agree to proposed constructions when it is found that the plans and specifications which are offered for approval are in accordance with the requirements of the local ordinances.

**Prevention of Blindness.**—From such information as this board has been able to obtain, it appears that very little progress is being made in the application of the provisions of the act approved March 11th, 1895, which is intended to prevent negligence on the part of midwife, nurse or other non-professional attendant who may have charge of any new-born infant, and to provide a method whereby the first appearance of redness or unnatural discharge of the eyes shall be promptly reported to the local board of health.

Section 3 of this act requires that "the Secretary of State shall cause a sufficient number of copies of this act to be printed, and to supply the same to such officers [local boards of health, &c.], for distribution," and the printing was done, but the law does not say that the copies are to be delivered to local health officers, and consequently they have never been distributed. But the law was printed in the report of the State board of health for 1895 (page 319), and in this manner it reached every physician and local board of health in the State.

The increase of blindness in New Jersey is five times more rapid than the increase in population, and purulent ophthalmia—an infectious and therefore a preventable disease—is believed to cause not less than thirty per cent. of all cases of blindness. The discussion of this subject by the members of the Medical Society of New Jersey, in 1893 and 1894, led to the appointment of a committee to secure legislation which should limit the prevalence of this disease, and also to provide a method whereby the affected infant can have the benefit of curative treatment, for perfect recovery without damage to the eye is in nearly every case attainable.

The prophylactic treatment recommended by Crede to be applied after all deliveries, consists in carefully washing the eyes immediately

after delivery with a soft linen cloth wet with plain tepid water which has recently been boiled and which is contained in a clean cup or glass, and the instillation of one drop of a two per cent. solution of the nitrate of silver, which is allowed to fall from a pipette directly upon the cornea.

When a purulent secretion is present, the eyes should be washed as follows: With absorbent cotton remove all discharges and then wash the eyes with a two per cent. solution of peroxide of hydrogen. The lids should be carefully separated by the fingers, care being taken not to make any pressure on the globe. The inflamed conjunctiva should not be wiped with the cotton, but the solution of peroxide of hydrogen should be applied by means of a pipette, and all portions of the membrane should be reached. Then flush the eye with a solution of borate of soda, six grains to the ounce, by the use of the pipette. This cleansing process should be repeated as often as necessary to keep the eyes free from pus, but at no time of day or night should the interval be longer than one hour. The palpebral conjunctiva should once or twice each day, as the physician may find necessary, receive an application of a solution of nitrate of silver, varying in strength with the period and severity of the disease from five to forty grains to the ounce. After each application of the solution of nitrate of silver, a few drops of olive oil should be allowed to fall into the eye. In the early stages of the disease the cleansing should be very frequent, in order that corneal infection may be prevented, as the probability of corneal infection is lessened after the acute phases of the disease are controlled. If the inflammation is very acute, ice bags are of great service to the patient.

**Cemeteries.**—Inquiries have been made during the past year to learn to what extent records of burials are kept by persons having charge of cemeteries, and the information obtained is presented on another page of this report.

Irregularities and neglect are found to prevail in many parts of the State, and some additional regulation is needed to secure compliance with the provisions of the law (see section 9 of the act approved February 15th, 1888).

Very respectfully,

HENRY MITCHELL,

Secretary.

# SUMMARY OF REPORTS FROM LOCAL BOARDS OF HEALTH.

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## ATLANTIC COUNTY.

### TOWN OF ABSECON.

MEMBERS AND OFFICERS—E. C. Bates, President; C. L. Higbee, John S. Hackett, B. Risley, J. Adams; Daniel Walters, Jr., Secretary; E. H. Madden, M.D., Inspector.

Population, census 1895, 522; area, 3,391 acres; number of births reported, 12; number of deaths reported, 12; number of deaths under one year, 2. Two meetings have been held during the year; two deaths were caused by railroad injuries.

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### ATLANTIC CITY.

MEMBERS AND OFFICERS—William G Hoopes, President; M. D. Youngman, M.D., William B. Loudenslager, Joseph H. Borton; Henry S. Scull, Secretary; William F. Koenke; Aaron Hinkle, Inspector; William F. Clevinger, Attorney.

Population, census 1895, 18,329; area, 1,677 acres; number of births reported, 423; number of deaths reported, 418 resident, 216 non-resident; number of deaths under one year, 103. The following cases of contagious diseases were reported to the board: Diphtheria 18, 4 deaths; membranous croup 3, 3 deaths; scarlet fever 28, 1 death; typhoid fever 46, 7 deaths. A considerable number of the communicable diseases which occurred during the year were traced to infection received before arrival in the city. The reports of communicable diseases are promptly received from nearly all of the physicians practicing in the city, but a few have been found to be neglectful. Thirty-nine regular and ten special meetings have been held. The sewerage company has extended the main sewer pipe about two miles from the old point of discharge to the open thoroughfare and have discontinued the use of the screening beds. Six hun-

## ATLANTIC COUNTY—Continued.

dred and fifty-four nuisances were reported, nearly all of which were abated. A number of suits at law were brought by the board to secure connections with sewers, but none of these cases came to trial, a compromise being effected and the required connections made.

## BUENA VISTA TOWNSHIP.

MEMBERS AND OFFICERS—Alfred Pennock, President, Buena; C. A. Gross, Landisville; Jacob Blazer, Folsom; Charles Kohler, Buena; Douglas Reed, Assessor and Secretary, Landisville.

Population, census 1895, 1,424; area, 37,103 acres; number of births reported, 34; number of deaths reported, 15; number of deaths under one year, 3. One fatal case of diphtheria and another of typhoid fever occurred during the year. Two meetings were held by the board.

## BOROUGH OF BRIGANTINE CITY.

MEMBERS AND OFFICERS—James R. Bissex, Alonzo M. Smith, David Holdzkorn, Thomas Bowen; Norris Smith, Secretary.

No resident physician in the borough. Two nuisances were reported, but no action was taken by the board. An outbreak of hog cholera occurred, resulting in the loss of twenty animals.

## EGG HARBOR CITY.

MEMBERS AND OFFICERS—George F. Breder, President; William Mueller, Lawrence Berchtold, Henry G. Regensburg; V. P. Hoffman, Secretary.

Population, census 1895, 1,557; area, 6,799 acres; number of births reported, 49; number of deaths reported, 36; number of deaths under one year, 8; 9 cases of diphtheria, with 4 deaths; 1 case of scarlet fever, 4 cases of typhoid fever and 20 cases of whooping cough, with 1 death, were reported. Twelve regular and seven special meetings were held during the year. Since the previous report of this board a water-supply obtained from artesian wells has

## ATLANTIC COUNTY—Continued.

been introduced, but surface wells are still in general use, not many residents having yet caused their dwellings to be connected with the public mains. One suit was brought by the board for penalty under the ordinance for selling impure flour. The case was settled out of court, the defendant refunding the money paid for the flour and bearing the costs of the prosecution.

## EGG HARBOR TOWNSHIP.

MEMBERS AND OFFICERS—Samuel A. Smith, President, English Creek; Walter F. Field, Bakersville. John Blackman, Steelmanville; Samuel C. Edmunds, M.D., Linwood; A. R. Vicars, Assessor and Secretary, Bakersville.

Population, census 1895, 1,457; area, 71,474 acres; number of births reported, 57; number of deaths reported, 69; number of deaths under one year, 13.

## GALLOWAY TOWNSHIP.

MEMBERS AND OFFICERS—Harry Filling, Pomerania; D. L. Matthews, Oceanville; Joseph Lippincott, Port Republic; Fred. W. Somers, Secretary, Oceanville; E. H. Madden, M.D., Inspector, Absecon.

Population, census 1895, 2,375; area, 40,074 acres; number of births reported, 53; number of deaths reported, 42; number of deaths under one year, 9. One meeting was held by the board.

## HAMILTON TOWNSHIP.

MEMBERS AND OFFICERS—L. B. Carson, N. Norcross, W. R. Wales, M.D., H. C. James, M.D., Inspector; Joseph Hamill, Assessor; M. H. Morse, Secretary; Charles T. Abbott, Attorney. All of Mays Landing.

Population, census 1895, 1,821; area, 72,869 acres; number of births reported, 38; number of deaths, 20; number of deaths under one year, 5. One meeting of the board was held.

## ATLANTIC COUNTY—Continued.

## HAMMONTON TOWNSHIP.

MEMBERS AND OFFICERS—William Cunningham, J. C. Anderson, James Potter, Walter Aucheno, Edward North, M.D.; J. L. O'Donnell, Secretary. All of Ham-  
monton.

Population, census 1895, 3,428; area, 28,805 acres; number of births reported, 116; number of deaths reported, 78; number of deaths under one year, 17. Two cases of diphtheria, one of scarlet fever and three of typhoid fever were reported. One meeting of the board was held.

## MULLICA TOWNSHIP.

MEMBERS AND OFFICERS—Reuben Boker, President, Elwood; Chas. Saalman, Egg Harbor City; A. J. McKeone, Pleasant Mills; Wm. W. Phillips, Assessor, Elwood; John T. Irving, Secretary, Elwood.

Population, census 1895, 825; area, 35,083 acres; number of births, 19; number of deaths, 19; number of deaths under one year, 1. Two cases of diphtheria with one death occurred in the township. One meeting was held. One nuisance was reported and abatement was secured.

## BOROUGH OF PLEASANTVILLE.

MEMBERS AND OFFICERS—Lewis H. Barrett, President; Frank Remer, Richard Risley, P. Adams, Samuel B. Jones; Samuel Bartlett, Secretary; R. M. Socy, M.D., Inspector.

Population, census 1895, 1,543; area, 2,560 acres. Scarlet fever one case and typhoid fever four cases were reported. Six meetings were held and one nuisance abated. The cases of typhoid fever were believed to be due to the pollution of wells.

## BOROUGH OF SOUTH ATLANTIC CITY.

MEMBERS AND OFFICERS—Charles Boggs, President; Josiah Norcross, Joseph Sharp, Anthony Gartzon, Sr., Joseph Walsh, Joseph W. Wintzinger; Charles Hart, Secretary.

Population, census 1895, 85.

## ATLANTIC COUNTY—Continued.

## WEYMOUTH TOWNSHIP.

MEMBERS AND OFFICERS—Anderson Campbell, President; P. W. Flanagin, Thomas Bailey; Bernard M. Godfrey, Assessor and Secretary. All of Tuckahoe.

Population, census 1895, 575; area, 48,424 acres; number of births reported, 2; number of deaths reported, 3; number of deaths under one year, 1.

## BERGEN COUNTY.

## BOROUGH OF ALLENDALE.

MEMBERS AND OFFICERS—A. A. Lydecker, M.D., President; Peter D. Rapelje, S. W. Brainerd, John A. Mallinson, C. R. Merrill; Daniel Anthony, Secretary.

This board was organized August 1st, 1897.

## BOROUGH OF BERGENFIELDS.

MEMBERS AND OFFICERS—James Murray, W. S. Bergert, W. H. Merkle; H. W. Vanderbeck, Secretary.

Population, census 1895, 544; area, 1,600 acres. One meeting of the board was held.

## BERGEN TOWNSHIP.

MEMBERS AND OFFICERS—John Neidhart, President; Alfred Harvey, Peter Laplace; Frank Greuter, Assessor and Secretary, all of Woodbridge; A. Richter, M.D., Inspector, Carlstadt.

Population, census 1895, 544; area, 4,742 acres; number of births, reported, 64; number of deaths reported, 36; number of deaths under one year, 11.

BERGEN COUNTY—*Continued.*

## BOROUGH OF CARLSTADT.

MEMBERS AND OFFICERS—Christian Steinbrenner, President; Henry Kreiling, Jr., Frank Dunworth, Charles Long, Ernest F. Sickenberger; Herman Foth, Secretary.

Population, census 1895, 1,965. Nine cases of scarlet fever and three of measles were reported. Eleven meetings were held. Seventeen nuisances were reported, all of which were abated.

## BOROUGH OF CLIFFSIDE PARK.

MEMBERS AND OFFICERS—Oliver D. Norton, M.D., President; George W. Laird, S. W. McClave, Edward George; R. H. Nutt, Secretary.

Population, census 1895, 592; area, 536 acres. Seven meetings were held. Twelve nuisances were reported, eleven of which were abated.

## BOROUGH OF CRESSKILL.

MEMBERS AND OFFICERS—E. Tallman, President; William A. Fraser, Peter B. Westervelt, Simeon Westervelt, Edwin D. McCracken; Edward B. Westervelt, Secretary; J. B. W. Lansing, M.D., Inspector.

Population, census 1895, 450; area, 1,684 acres.

## BOROUGH OF EAST RUTHERFORD.

MEMBERS AND OFFICERS—Paul Jaenerett, President; Theodore Wood, Aaron D. Vries, Charles Brooks, M.D.; George Hagelweide, Secretary; Luther Shafer, Attorney, Rutherford.

Population, census 1895, 2,250; area, 2,500 acres. Four cases of diphtheria attended by one death, and fourteen cases of scarlet fever with two deaths, were reported. Ten meetings of the board were held. Steps will be taken by the board to enforce the act of March 18th, 1895, in regard to the cutting and sale of ice.

BERGEN COUNTY—*Continued.*

## BOROUGH OF EASTWOOD.

The territory of this borough was returned in part to Washington township, and in part to the borough of Old Tappan on March 26th, 1896.

## CITY OF ENGLEWOOD.

MEMBERS AND OFFICERS—Henry Jones, President; Samuel S. Demarest, Henry Birtwhistle, John A. Wells, M.D.; Garrett Lydecker, Secretary; Eugene M. Bocheim, Inspector; R. P. Wortendyke, Attorney.

Population, census 1895, 5,433; area, 4,681 acres; number of births reported, 98; number of deaths reported, 86; number of deaths under one year, 18. The board received reports concerning communicable diseases as follows: Ten cases of diphtheria, three cases of scarlet fever and two cases of typhoid. Meetings are held monthly. All of the nuisances which have been reported have been abated. Ordinances were adopted by the board July 10th, 1896.

## BOROUGH OF ENGLEWOOD CLIFFS.

MEMBERS AND OFFICERS—William B. Dana, President, Englewood; A. Dean, D.D., Fort Lee; William C. Lester, Fort Lee; E. C. Dillingham, Englewood; John G. Ropes, Secretary, Fort Lee; Joseph Huger, M.D., Fort Lee; John H. Knox, Attorney, Englewood.

Area, 1,025 acres. Two regular meetings and one adjourned meeting were held by the board. One complaint was received and the nuisance was abated.

## BOROUGH OF FAIR VIEW.

MEMBERS AND OFFICERS—F. W. Schneider, President; Frank Hummel, Henry Beerman; John C. Bush, Recorder; M. S. Ayres, M.D.; George A. Storms, Secretary.

Number of births reported, 19; number of deaths reported, 8. Two cases of scarlet fever were reported, one terminating fatally. Several complaints were received by the board and improvement was secured in each case.

## BERGEN COUNTY—Continued.

## FRANKLIN TOWNSHIP.

MEMBERS AND OFFICERS—Daniel Van Houten, President, Wyckoff; Albert Lozier, Wyckoff; J. A. Terhune, Oakland; John W. Ackerman, Assessor and Secretary, Oakland; E. W. Hamilton, M.D., Inspector.

Population, census 1895, 1,825; area, 17,972 acres. Number of births reported, 59; number of deaths reported, 38; number of deaths under one year, 8. Three meetings were held by the board.

## BOROUGH OF GLEN ROCK.

MEMBERS AND OFFICERS—John A. Marinus, George Berdan, Barney Vanderburg; James B. Christopher, Secretary.

## CITY OF HACKENSACK.

MEMBERS AND OFFICERS—Charles Conklin, President; Robert G. Wool, William P. Amerman, E. S. Emmons, Lemuel Lozier, John MacCallister; George A. De Loynes, Secretary; Robert Ballagh, Inspector; Milton Demarest, Attorney.

Population, census 1895, 7,282; number of births reported, 123; number of deaths reported, 113; number of deaths under one year, 16. The following cases of communicable diseases were reported: Diphtheria, 32 cases, 6 deaths; scarlet fever, 22, 1 death; typhoid fever, 3, 1 death. The cases of diphtheria were supposed to be due to infection in one of the school buildings. Cleanliness of the building where most of the affected children attended was not as thorough as it should be, and the trustees caused the rooms to be scrubbed every two weeks and sprinkled with a solution of bichloride of mercury. Diphtheria antitoxin was procured from the board of health of the city of New York and furnished to the local physicians free of cost, and the use of this remedy both for prophylactic and remedial purposes was found to be highly satisfactory. The cutting and sale of ice are regulated by the board. Fourteen meetings were held by the board during the year. The creek running through the lower part of the city, which was formerly used as an open sewer, has been enclosed by a brick conduit. Thirty-seven nuisances were reported, all of which were abated.

## BERGEN COUNTY—Continued.

## HARRINGTON TOWNSHIP.

MEMBERS AND OFFICERS—Ward Varian, President; George Tucker, John Ver Valen, L. B. Parcell, M.D.; William J. Demarest, Assessor and Secretary.

Population, census 1895, 2,989; area, 17,129 acres; number of births reported, 54; number of deaths reported, 43; number of deaths under one year, 10. Two meetings were held. Four cases of communicable diseases were reported.

## BOROUGH OF HASBROUCK HEIGHTS.

MEMBERS AND OFFICERS—J. Herbert Winans, President; Frank S. Flagg, E. L. D. Heeter; John G. Martin, Secretary.

Population, census 1895, 842. Four cases of diphtheria, attended by two deaths; six cases of scarlet fever and one case of typhoid fever were reported. Twenty-one meetings were held by the board. Several nuisances were reported and improvement in conditions complained of was secured. A new plumbing and drainage code was adopted by the board.

## HOHOKUS TOWNSHIP.

MEMBERS AND OFFICERS—W. H. Pulis, President, Ramseys; Samuel May, Ramseys; James Devine, Mahwah; John Ackerman, Assessor and Secretary, Wickoff; J. J. Young, Inspector, Ramseys; J. W. De Yoe, Attorney, Ramseys.

Population, census of 1895, 2,377; area, 20,937 acres; number of births reported, 62; number of deaths, 44; number of deaths under one year, 10. The following cases of communicable diseases were reported: Three cases of diphtheria, one death, and one case of scarlet fever. Two meetings of the board were held.

## BOROUGH OF LEONIA.

MEMBERS AND OFFICERS—H. D. Van Zandt, President; Robert Duncan, Peter S. Newell, J. T. Wyckoff, M.D.; H. M. Thompson, Secretary; M. M. Fullarton, Inspector.

Population, census 1895, 500. Fourteen meetings were held by the board during the year. One case of scarlet fever was reported. One death resulted from a bicycle accident.

## BERGEN COUNTY—Continued.

## BOROUGH OF LITTLE FERRY.

MEMBERS AND OFFICERS—John Claussen, Sr., President; George Soll, Elmora N. Mehrhof; A. Wood, Secretary; H. C. Elsing, M.D., Inspector, Ridgfield Park.

Population, census 1895, 1,113; area, 832 acres. One case of diphtheria and one case of small-pox were reported from this district. Eleven meetings have been held, five complaints received and three nuisances abated. A suit is pending, brought by the board to compel one of their own members to clean out a ditch believed to be upon his premises, and thereby improve the drainage of a considerable portion of the borough. The small-pox patient recovered.

## BOROUGH OF LODI.

MEMBERS AND OFFICERS—John Haggerty, President; James J. Mason, Christopher Tattersall, W. Van Vorst; Jacob Van Hook, Secretary; E. E. Conover, Inspector.

Population, census 1895, 1,403. Twelve meetings were held during the year. A new water-supply from artesian wells is now being introduced. No sewers have yet been constructed. One complaint was received and the nuisance abated. A suit was brought by the board under an ordinance for penalty in the case of unsanitary premises where fowls caused a nuisance. Decision in favor of the board was rendered and nuisance abated.

## LODI TOWNSHIP.

MEMBERS AND OFFICERS—M. Helbig, Woodridge; P. Koster, Woodridge; Julius Pries, Assessor and Secretary, Woodridge.

Population, census 1895, 638; area, 4,907 acres; number of births, 158; number of deaths, 90; number of deaths under one year, 24. No contagious diseases were reported. Three meetings were held during the year. There is no school building in this township.

## BERGEN COUNTY—Continued.

## BOROUGH OF MAYWOOD.

MEMBERS AND OFFICERS—Philip Thoma, President; Gustave Jaeger, D. A. Price, Charles Schminke; F. T. May, Secretary.

Population, census 1895, 283. Four meetings were held by the board.

## BOROUGH OF MIDLAND PARK.

MEMBERS AND OFFICERS—Thomas Holt, President; John L. Guyre, John Klopman; Jacob Leenas, Secretary.

Population, census 1895, 1,254.

## MIDLAND TOWNSHIP.

MEMBERS AND OFFICERS—David H. Hopper, President, River Edge; Peter Ackerman, Ridgewood; John G. Zabriskie, Rochelle Park; Nicholas G. Hopper, Assessor and Secretary, Ridgewood; William L. Vroom, M.D., Inspector, Ridgewood.

Population, census 1895, 1,829; area, 10,262 acres; number of births, 48; number of deaths, 36; under one year, 8. One case of diphtheria was reported, but other cases of contagious diseases probably occurred. One meeting of the board was held during the year.

## BOROUGH OF MONTVALE.

MEMBERS AND OFFICERS—Garret F. Hering, President; John B. Hering, J. D. Van Riper, Jacob Terkalle; Joseph H. Ware, Secretary.

Population, census 1895, 354; area, 2,400 acres. The board held no meetings. An epidemic of measles occurred in the borough during the late spring.

## BOROUGH OF OLD TAPPAN.

MEMBERS AND OFFICERS—J. B. Ackerson, President; John H. Maurer, Jr., Wm. H. Mence, A. S. Herrick; Garret F. Haring, Secretary.

Population, census 1895, 261; area, 2,377 acres. Four meetings were held during the year. One complaint was received and the nuisance was abated.

BERGEN COUNTY—*Continued.*

## ORVIL TOWNSHIP.

MEMBERS AND OFFICERS—P. F. Haldane, President, Hohokus; Henry S. Hopper, Walwick; James A. Osborne, Assessor and Secretary, Hohokus; Henry Springstead, Inspector, Walwick; F. K. De Yoe, Attorney, Paterson.

Population, census 1895, 993; area, 11,046 acres; number of births, 45; number of deaths, 39; number of deaths under one year, 1. Two cases of diphtheria, two cases of scarlet fever, one case of typhoid fever, and four cases of measles occurred. Six meetings were held by the board. Two complaints were received and abatement secured in both cases.

## OVERPECK TOWNSHIP.

MEMBERS AND OFFICERS—Henry Lenwaber, President; F. H. Friend, A. E. Innis, Henry C. Elsing, M.D., Ridgefield Park; Carl Hallberg, Assessor and Secretary.

Number of births reported, 7. Three cases of diphtheria, one of membranous croup and one of scarlet fever were reported. The board had three meetings. Two nuisances were reported and both were abated.

## PALISADE TOWNSHIP.

MEMBERS AND OFFICERS—William P. Ackerman, M.D., President, Oradell; James D. Christie, River Edge; J. Ely Collins, New Bridge; Emil Seutker, Peetzburg; William Ely, Assessor and Secretary, New Bridge.

Population, census 1895, 682; area, 10,502 acres; number of births reported, 79; number of deaths reported, 55; number of deaths under one year, 15. An epidemic of measles occurred during the spring months, and dysentery also prevailed at the same time.

BERGEN COUNTY—*Continued.*

## BOROUGH OF PARK RIDGE.

MEMBERS AND OFFICERS—Eugene Jahl, M.D., President; William Parks, H. W. B. Leach, A. H. Barkerding; W. D. Woodley, Secretary and Inspector.

Population, census 1895, 753; area, 1,224 acres. Two cases of diphtheria were reported. Six meetings were held by the board. The board received two complaints, in one of which action was taken, resulting in abatement of the nuisance.

## BOROUGH OF RIDGEFIELD.

MEMBERS AND OFFICERS—Alexander Shaler, President; A. A. Ertle, E. Robinson, Marion A. Lemm; Joseph S. Hall, Secretary; M. S. Ayers, M.D., Inspector, Fairview.

Population, census 1895, 518; area, 2,400 acres. Two cases of scarlet fever were reported. Ten regular meetings and five special meetings were held by the board.

## RIDGEFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Samuel Mabie, President; Julius M. Du Bois, John A. Brandt, Joseph W. Huger, M.D.; Charles Corker, Secretary; Peter W. Stagg, Attorney. All of Fort Lee.

Area, 10,342 acres; number of births reported, 136; number of deaths reported, 104; number of deaths under one year, 26. Fifteen meetings were held by the board. Nine nuisances were reported, eight of which were abated. The following new ordinance was adopted:

An ordinance affecting the keeping of horses, mules, cows, or other cattle, on private property, and concerning liquids, gases and offensive odors which emanate therefrom, to the discomfort or to the detriment of the health of persons living or passing in the vicinity thereof.

SEC. 1. Be it ordained, That the keeping of any barn, shed, pen, or other enclosures, for horses, mules, cows, or other cattle, in the township of Ridgefield, in the county of Bergen, in such manner, that offensive or obnoxious odors shall emanate therefrom, or foul, offensive or obnoxious liquids, gases, or odors shall be permitted



## BERGEN COUNTY—Continued.

in and upon or around any such barn, shed, pen, or other enclosure, to the discomfort or to the detriment of the health of persons living or passing in the vicinity thereof, is hereby declared to be a nuisance, and any person or persons who shall keep any such barn, shed, pen, or other enclosure, in such manner as aforesaid, or shall permit any such foul, offensive or obnoxious liquids, gases, or odors, in, upon or around any such barn, shed, pen, or other enclosure, shall be liable to a penalty of fifty dollars for each offense.

Sec. 2. This ordinance shall be deemed a public ordinance, and shall take effect immediately, and all other ordinances heretofore passed in any way conflicting with this ordinance are hereby repealed.

Two suits were brought by the board. In one of these cases the board was non-suited, because it was shown that the ordinance had been published in a newspaper which had not been in existence one year, it being required by the statute that no publication shall be considered a legal newspaper until it shall have been regularly issued for at least one year.

## VILLAGE OF RIDGEWOOD.

OFFICERS AND MEMBERS—Joseph W. Edwards, President; William J. Fullerton, James Cornelius, Clarence H. Dickson, John R. Stevens; John J. Demund, Medical Inspector. All of Ridgewood.

## BOROUGH OF RIVERSIDE.

MEMBERS AND OFFICERS—John R. Voorhees, President; Joseph H. Weston, Henry Young, Thomas Shepherd, G. H. McFadden; Frederick H. Conn, Secretary.

Population, census 1895, 569; area, 1,100 acres. Four meetings were held.

## BOROUGH OF RUTHERFORD.

MEMBERS AND OFFICERS—Charles Van Winkle, President; Charles Colhoun, M.D., J. C. Sares, F. K. Hollister, M.D.; F. E. Milner, Secretary.

Population, census 1895, 2,972; area, 1,300 acres; number of births reported, 58; number of deaths reported, 59; number of deaths under one year, 16. Four cases of diphtheria, one of membranous croup and fifty cases of scarlet fever were reported. For

## BERGEN COUNTY—Continued.

the suppression of the outbreak of scarlet fever the children from infected houses were excluded from school, and allowed to return only after the board was satisfied that no spread of the disease would follow their liberation from quarantine restrictions. Fourteen meetings were held; fifty nuisances were reported.

## BOROUGH OF SADDLE RIVER.

MEMBERS AND OFFICERS—B. O. Blenis, President; Frank Blacklege; H. H. Ackerman, Secretary.

Population, census 1895, 400; area, 2,700 acres; number of births reported, 6; number of deaths reported, 5. Two cases of typhoid fever were reported, no deaths. The source of infection was traced to the water of a cistern located under the dwelling. Two meetings were held by the board.

## BOROUGH OF SCHRAALENBURGH.

MEMBERS AND OFFICERS—W. H. Voorhees, President; O. G. Russell, S. S. Bogart, Dr. Pratt, J. H. Anderson; Charles C. Hough, Secretary and Borough Clerk.

Population, census 1895, 572.

## TEANECK TOWNSHIP.

MEMBERS AND OFFICERS—Peter J. Ackerman, President; William Bennett, Henry J. Brinkerhoff; Daniel G. Bogart, Assessor and Secretary.

Population, census 1895, 811; area, 4,032 acres; number of births reported, 2; number of deaths reported, 6; number of deaths under one year, 1.

## BOROUGH OF TENAFLY.

MEMBERS AND OFFICERS—J. J. Haring, M.D., President; S. G. Clarke, Thomas L. MacIntyre, Richard Delahanty; J. B. W. Lansing, M.D., Secretary and Inspector.

Population, census 1895, 1,532. Monthly meetings are held by the board. Complaints have been received in regard to the condition of the Tenakill brook, which flows through the borough, but no action has yet been taken for its improvement.

BERGEN COUNTY—*Continued.*

## BOROUGH OF UNDERCLIFF.

MEMBERS AND OFFICERS—Edward Fieber, William H. Eickhoff, F. W. Winterburn; E. Grant White, Secretary.

Population, census 1895, 1,072; area, 342 acres. Two cases of membranous croup, both of which were fatal, and four cases of scarlet fever, were reported. Seven meetings were held, four complaints were received and improvement was secured in each of the reported cases.

## BOROUGH OF UPPER SADDLE RIVER.

MEMBERS AND OFFICERS—Peter P. Bush, President; Martin M. Tice, John H. Straut.

Population, census 1895, 321; area, 3,164 acres.

## BOROUGH OF WALLINGTON.

MEMBERS AND OFFICERS—Robert Cook, President; Cornelius Vanderbilt, John Van Iderstine, Peter Glynis, W. D. Sullivan, M.D.; James Brennan, Secretary; A. D. Sullivan, Attorney.

Population, census 1895, 1,063; area, 2,560 acres. The board received reports of ten cases of diphtheria accompanied by three deaths, and one case of scarlet fever. Monthly meetings are held. Seven complaints were received and five nuisances were abated.

## WASHINGTON TOWNSHIP.

MEMBERS AND OFFICERS—T. C. Demarest, President, Hillsdale; D. L. Lockwood, Hillsdale; P. J. Westervelt, Westwood; T. V. Townsend, M.D., Westwood; John W. Kinmouth, Assessor and Secretary, Hillsdale.

Population, census 1895, 1,259; area, 15,616 acres; number of births reported, 77; number of deaths reported, 57; number of deaths under one year, 17. Twelve meetings were held by the board. No records of transactions are kept by the board.

BERGEN COUNTY—*Continued.*

## BOROUGH OF WOODCLIFF.

MEMBERS AND OFFICERS—Walter Stanton, C. E. Felter, J. H. Wortendyke, G. J. Ackerman, David H. Tice; G. I. Wortendyke, Secretary.

Population, census 1895, 421; area, 2,194 acres. One meeting was held during the year. No complaints were received.

## BOROUGH OF WOODRIDGE.

MEMBERS AND OFFICERS—Joseph H. Schmitt, President; Freeman J. Rhode, William H. White, Secretary; Henry W. Ostrouski, Inspector.

Population, census 1895, 526; area, 596 acres. Ten meetings were held by the board. Ten complaints were received and abatement was secured in each case. An ordinance relating to disposal of waste fluids was adopted by the board July 3d, 1897.

## BURLINGTON COUNTY.

## BASS RIVER TOWNSHIP.

MEMBERS AND OFFICERS—Amasa Mathis, President; George F. Cramer, John D. Sooy; A. E. Mathis, Assessor and Secretary. All of New Gretna.

Population, census 1895, 853; area, 50,959 acres; number of births reported, 19; number of deaths reported, 11; under one year, 3. One case of membranous croup, terminating fatally, was reported to the board. No meetings were held.

## CITY OF BEVERLY.

MEMBERS AND OFFICERS—J. J. Currie, M.D., President; William K. Van Sciver, George A. Smith, Charles H. Peart, Reuben P. Haines; B. F. Soby, M.D., Secretary; C. F. Richardson, Inspector.

Population, census 1895, 1,924; area, 348 acres. But one case of communicable disease was reported to the board. Fifteen meetings were held, twenty complaints received and improvement secured in each

## BURLINGTON COUNTY—Continued.

instance. An urgent necessity in this city is a complete sewerage system. The collection and disposal of garbage is not satisfactorily performed and improvement is much needed in this department.

## BEVERLY TOWNSHIP.

MEMBERS AND OFFICERS—Thomas W. Hood, President, Beverly; William T. Baggs, Beverly; W. W. Weiler, Delanco; Joseph B. Carter, Assessor and Secretary, Delanco; H. K. White, M.D., Inspector, Delanco.

Population, census 1895, 1,924; area, 4,000 acres; number of births, 50; number of deaths, 66; number of deaths under one year, 14. Four cases of diphtheria were reported, one death. Reports are promptly received from physicians in case of communicable diseases. Four meetings were held by the board during the year. Four complaints were received and abatement was secured in all of these cases. An ordinance has been passed by the board to control the disposal of garbage and rubbish.

## CITY OF BORDENTOWN.

MEMBERS AND OFFICERS—David A. Brown, President; Edwin L. Thompson, L. D. Tebo, M.D., Samuel E. Burr, Robert Bankle; William H. Shippis, M.D., Secretary; H. N. Jobes, Inspector.

Population, census 1895, 4,185; area, 5,850 acres; number of births reported, 67; number of deaths reported, 77; number of deaths under one year, 7. Two cases of scarlet fever and eleven cases of typhoid fever were reported. Fourteen meetings were held. Artesian wells have been sunk for the purpose of increasing the water-supply, but they have not yet been brought into use.

## BORDENTOWN TOWNSHIP.

MEMBERS AND OFFICERS—J. H. Longstreet, President, Bordentown; Fred. Shaffer, Fieldsboro; R. S. Tatum, Bordentown; B. W. MacFarland, M.D., Bordentown; William Warrack, Assessor and Secretary, Bordentown.

Population, census 1895, 991; area, 819 acres. Two cases of diphtheria occurred. Eleven meetings of the board were held during the year. One nuisance was reported to the board.

## BURLINGTON COUNTY—Continued.

## CHESTERFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Edward M. Ridgeway, President, Crosswicks; Charles E. Wallace, Chesterfield; William M. Foulke, Chesterfield; Charles B. Halloway, Assessor and Secretary, Chesterfield; Isaac E. Antrim, Attorney, Bordentown.

Population, census 1895, 1,298; area, 14,159 acres; number of births, 5; number of deaths, 20; number of deaths under one year, 2. Three cases of scarlet fever occurred. Two meetings of the board were held.

## CHESTER TOWNSHIP.

MEMBERS AND OFFICERS—John B. Warrack, President, Hartford; Charles Collins, Moorestown; Joseph Stokes, M.D., Moorestown; Benjamin Rogers, Assessor and Secretary, Moorestown; F. G. Stroud, M.D., Inspector, Moorestown; J. E. Borton, Attorney, Moorestown.

Population, census 1895, 4,227; area, 12,099 acres; number of births reported, 80; number of deaths reported, 75; number of deaths under one year, 20. The following contagious diseases were reported: Eight cases of diphtheria, no deaths; 70 cases of scarlet fever, 2 deaths; 10 cases of typhoid fever, 1 death. During the outbreak of scarlet fever the public schools were closed. Reports from physicians notifying the board of cases of communicable diseases were made with promptness. Two meetings of the board were held. Twelve complaints were received and in each instance improvement of unsanitary conditions was secured.

## CINNAMINSON TOWNSHIP.

MEMBERS AND OFFICERS—Clayton Conrow, President, Cinnaminson; Howard Taylor, Riverton; Isaac Eval, Palmyra; J. D. Janney, M.D., Cinnaminson; Timothy Morton, Assessor and Secretary, Parry.

Population, census 1895, 1,202; area, 5,747 acres; number of births reported, 40; number of deaths reported, 25; number of deaths under one year, 5. Four cases of diphtheria were reported.

BURLINGTON COUNTY—*Continued.*

## DELWAN TOWNSHIP.

MEMBERS AND OFFICERS—Franklin Murphy, Bridgeton; Robert M. Brock, Bridgeton; J. P. Brown, Bridgeton; C. T. Atkinson, Camden; Daniel A. Kendall, Assessor and Secretary, Bridgeton; A. E. Conrow, Inspector, Moorestown.

Population, census 1895, 938; area, 3,690 acres; number of births reported, 17; number of deaths reported, 11; number of deaths under one year, 6. One meeting of the board was held.

## EASTAMPTON TOWNSHIP.

MEMBERS AND OFFICERS—J. M. Reeve, President, Smithville; John Edwards, Smithville; Harry Githens, Smithville; Samuel M. Baley, Mt. Holly; George M. Craig, Assessor and Secretary, Smithville; Micajah Matlack, Attorney, Mt. Holly.

Population, census 1895, 654; area, 3,690 acres; number of births reported, 5; deaths reported, 6; deaths under one year, 2. Two meetings were held.

## FLORENCE TOWNSHIP.

MEMBERS AND OFFICERS—Charles A. Bowne, Burlington; Charles Lucas, Florence; D. Baird, Jr., M.D., Florence; James E. Jones, Secretary, Florence; John Kale, Assessor, Florence.

Population, census 1895, 1,762; area, 6,498 acres; number of births reported, 51; number of deaths reported, 21; deaths under one year, 6. Twenty-nine cases of diphtheria were reported, with four deaths, and one fatal case of typhoid fever occurred. Three meetings were held during the year, five complaints were received and two nuisances were abated.

## LUMBERTON TOWNSHIP.

MEMBERS AND OFFICERS—W. C. Parry, M.D., President, Hainesport; Albert Middleton, Ezra C. Engle, William D. Mason; H. D. Culin, Assessor and Secretary.

Population, census 1895, 1,715; area, 13,045 acres; number of births reported, 11; deaths, 4; deaths under one year, 2.

BURLINGTON COUNTY—*Continued.*

## MANSFIELD TOWNSHIP.

MEMBERS AND OFFICERS—John B. Burtis, President, Columbus; George Black, Columbus; W. Howard Shreve, Kinkora; Thomas S. Keeler, Assessor and Secretary Columbus; T. W. H. Calver, M.D., Inspector, Columbus.

Population, census 1895, 1,612; area, 14,851 acres; number of births reported, 29; number of deaths reported, 18; number of deaths under one year, 4. One case of diphtheria, fourteen of scarlet fever and two cases of varicella were reported. One death occurred from membranous croup, no previous notification having been received in this case. The board held three meetings.

## MEDFORD TOWNSHIP.

MEMBERS AND OFFICERS—Charles H. Kirby, L. L. Sharp, M.D., B. S. Braddock, M.D., J. Reeve; William M. Potts, Assessor and Secretary. All of Medford.

Population, census 1895, 1,989; area, 26,880 acres; number of births, 29; number of deaths, 7; number of deaths under one year, 3. Four cases of typhoid fever and a few cases of measles occurred during the year. One meeting of the board was held. Two complaints were received and in both cases improvement was secured. Contagious diseases are not promptly reported.

## MOUNT LAUREL.

MEMBERS AND OFFICERS—B. G. Dudley, President, Moorestown; R. T. Evans, Masonville; William A. Wilkins, Masonville; W. A. Lippincott, Assessor and Secretary, Hartford.

Population, census 1895, 1,653; area, 14,162 acres; number of births reported, 23; number of deaths reported, 23; number of deaths under one year, 8. Three cases of typhoid fever, one of which was fatal, occurred during the year. These cases appeared at distant points in the township, and the infection was apparently due to independent sources.

## BURLINGTON COUNTY—Continued.

## NEW HANOVER TOWNSHIP.

MEMBERS AND OFFICERS—L. D. Woodward, President, Cockstown; George C. Davis, Wrightstown; James Murphy, Jacobstown; Benjamin Remine, Assessor and Secretary, Wrightstown; Amos Shaw, M.D., Inspector, Jacobstown.

Population, census 1895, 1,896; area, 26,184 acres; number of births reported, 11; number of deaths reported, 23; number of deaths under one year, 10.

## NORTHAMPTON TOWNSHIP.

MEMBERS AND OFFICERS—A. A. Anderson, M.D., President; Charles G. Copperthwaite, T. L. Akins, R. H. Parsons, M.D.; M. H. Gervin, Assessor and Secretary; C. K. Chambers, Attorney. All of Mount Holly.

Population, census of 1895, 5,750; area, 1,788 acres; number of births reported, 49; number of deaths reported, 102; number of deaths under one year, 17. Six cases of diphtheria, with one death; two cases of scarlet fever and three of typhoid fever, were reported. The board holds two regular meetings each month. Fifteen nuisances were reported, all of which were abated.

## RIVERSIDE TOWNSHIP.

MEMBERS AND OFFICERS—S. E. Schawbenland, President; P. J. Schmidt, X. Walton; Henry Garbe, Sr., Assessor and Secretary; T. S. Lippincott, M.D., Inspector; George Bacon, Attorney. All of Riverside.

Population, census 1895, 1,661; area, 2,102 acres; number of births, 39; number of deaths, 31; number of deaths under one year, 7. One case of diphtheria, two cases of scarlet fever and four cases of typhoid fever occurred. Six meetings were held by the board. Nine complaints were received, and action was taken by the board which resulted in the abatement of the nuisance in each case.

## BURLINGTON COUNTY—Continued.

## BOROUGH OF RIVERTON.

MEMBERS AND OFFICERS—J. C. S. Davis, C. C. Rainhard, W. G. Wilson, A. J. Briggs; Alex. Marcy, Jr., M.D., Secretary and Inspector.

Population, census 1895, 1,250. The following communicable diseases were reported: Three cases of diphtheria and four cases of scarlet fever. Twelve meetings were held. Five complaints were received and five nuisances were abated.

## SHAMONG TOWNSHIP.

MEMBERS AND OFFICERS—John W. Haines, President, Tabernacle; James K. Naylor, Indian Mills; Delwynn Lippincott, Red Lion; James Dellet, Assessor and Secretary, Indian Mills

Population, census 1895, 965; area, 45,005 acres; number of births reported, 8; number of deaths reported, 4.

## SPRINGFIELD TOWNSHIP.

MEMBERS AND OFFICERS—John A. Hancock, President, Columbus; Henry D. Rue, Wrightstown; Thomas L. Asa, Jacksonville; Aaron H. Burtis, Secretary and Assessor, Mt. Holly; Charles K. Chambers, Attorney.

Population, census 1895, 1,533; area, 18,929 acres; number of births reported, 8; number of deaths reported, 10; number of deaths under one year, 2. Two nuisances were reported, both of which were abated.

## WASHINGTON TOWNSHIP.

MEMBERS AND OFFICERS—J. L. Williams, President, Wading River; Charles T. Allen, Lower Bank; Thomas R. Holloway, Jenkins; J. E. Carey, M.D., Lower Bank; A. E. Koester, Assessor and Secretary, Green Bank.

Population, census 1895, 310; area, 66,048 acres; number of births, 14; number of deaths, 9; number of deaths under one year, 3. The board held one meeting during the year.

BURLINGTON COUNTY—*Continued.*

## WESTAMPTON TOWNSHIP.

MEMBERS AND OFFICERS—Firman Dabell, President, Mt. Holly; J. P. Deacon, Mt. Holly; S. M. McFarland, Mt. Holly; William L. Martin, M.D., Rancocas; Benj. H. Deacon, Secretary, Mt. Holly; Robert S. Gaskill, Attorney, Mt. Holly.

Population, census 1895, 593; area, 7,195 acres; number of births reported, 4; number of deaths reported, 6; number of deaths under one year, 3. One fatal case, each, of membranous croup and typhoid fever, occurred.

## WOODLAND TOWNSHIP.

MEMBERS AND OFFICERS—George Bozarth, President, Assessor and Secretary, Chatsworth; Victor Retzendollar, Chatsworth; Constant Ledue, Chatsworth.

Population, census 1895, 387; area, 74,747 acres; number of births reported, 9; number of deaths reported, 6; number of deaths under one year, 1.

## CAMDEN COUNTY.

## CITY OF CAMDEN.

MEMBERS AND OFFICERS—Charles Watson, President; R. H. Gaskill, A. E. Street, M. F. Middleton, M.D., William S. Woelander, M.D., S. G. Busbey, M.D., J. W. Fithian, M.D.; Eugene B. Roberts, Secretary; John F. Leavitt, M.D., Inspector; J. William Morgan, Attorney.

Population, census 1895, 63,467; area, 3,354 acres; number of births reported, 1,184; number of deaths reported, 1,335; number of deaths under one year, 357. Communicable diseases were reported as follows: 303 cases of diphtheria, with 74 deaths; 28 cases of membranous croup, 13 deaths; scarlet fever, 188 cases and 12 deaths; typhoid fever, 266 cases and 25 deaths.

Twelve meetings were held by the board during the year. One suit was brought by the board for violation of the ordinances. Judgment was rendered for the board and the fine was paid. The water-supply of Camden, which has heretofore been obtained from the Delaware river, is now taken from artesian wells which have

CAMDEN COUNTY—*Continued.*

been provided during the past year. A description of the new water-works is furnished by the local board of health.

Instead of following the usual course of buying a plant or simply contracting for a supply at so much a million gallons from some corporation, Camden turned to deep artesian wells, without the intervention of a middleman, and the promoters of this system are sanguine that the results will justify their judgment in every respect.

Of course, the city had to go through the regular siege of agitation, during which nearly everybody had a plan different from his neighbor. Finally the controversy settled down to a discussion of two propositions: Filtration of the water then in use or deep wells. The latter method was championed by the board of trade, and it was adopted as the most practicable and satisfactory, all things considered. A year ago a contract for the work was given to ex-Senator George Pfeiffer, and operations were begun on December 1st. The sum to be paid to Contractor Pfeiffer is \$560,000, but this does not include the site of the plant, which amounts to about one hundred acres and lies along the Delaware river at Delair, six miles above Camden.

There are seventy-two wells, about two hundred feet apart. Most of the wells, it is estimated, will yield over a million gallons a day. To reach the water it was necessary to go through a white clay bed twenty-eight feet deep, and this is regarded as ample guarantee that there can be no pollution from surface water or sewage. Six feet below the surface an eight-inch well-head and piece of pipe are put in. All the wells connect with the main sections, of which there are two thirty-inch pipes, and these pipes flow into the receiving cistern; this cistern is thirty feet in diameter and forty feet deep.

The water is carried to the city in a thirty-six-inch main, with divisions and stop valves at every fifteen hundred feet, in case of accidents. The pumping station is supplied with two ten-million-gallon pumps, with all the latest improvements.

The location of the new wells is near Morris station on the Amboy division of the P. R. R., about one mile north of Delair, and five miles from Camden. The land is owned by the city, comprises 94½ acres, and lies between the railroad and the river, and the average level of the ground surface is about two feet below high-water mark, the site being dyked from tidal flow. The sizes of the wells are as

CAMDEN COUNTY—*Continued.*

follows: 13 are 6 inches in diameter; 57 are 8 inches in diameter, and 2 are 10 inches in diameter. The screens at bottom of wells are 1 inch smaller in diameter than the casings.

Twelve of the wells were put down by Kisner & Bennett, of Belmar, N. J., and the others were drilled by Cook & Co., of St. Louis, Mo. The Kisner & Bennett wells have screens which are made of galvanized iron piping with numerous  $\frac{3}{8}$ -inch holes, and an outside covering of brass gauze attached securely by solder. The screens used in the Cook wells consist of seamless brass tubing, with longitudinal slits which are wider on the inside of the tubing than on the outside.

The screens or strainers vary in length from 16 to 24 feet. The two ten-inch wells are directly beneath the cistern. The cistern is constructed of brick, laid in cement, with concrete bottom.

The wells are in four groups, and each well is connected by a sweep T to the 8-inch connecting branch to the suction main. Above the T's straight pipe continues above ground with cap bolted over gasket and painted with asphalt. Each well has a valve outside the casing with valve casing and cover. Suction lines increase in diameter according to the number of wells attached—from 10 inches up to 30 inches diameter—for each of the two main lines. These lines terminate in the cistern, being turned down to within two feet of the cistern bottom.

The two smaller systems connect one each with these mains outside the cistern. Immediately outside the cistern, on each of the two 30-inch lines, there is an air chamber on top the 30-inch pipes, with a 2 inch connection to an independent air pump in the engine-room.

The pump suction line is 24 inches into the cistern, with quarter bend down to near bottom. An independent suction line for each pump and provision for valves, openings plugged, for a third pump when needed.

There is a by-pass from 30-inch suction lines to cistern to the pump suction, so that water may be drawn either from cistern or from wells direct, or from both, by using the proper valves.

The water, when pumps are not running, stands at about mean tide or surface of the ground. When pumped from cistern, the water from wells rises into the branches, flows into the main suction pipes and siphons over into the cistern, and is thence lifted by the

CAMDEN COUNTY—*Continued.*

pumps. The independent air pump exhausts the air from the main suction pipes, creating the necessary vacuum. These mains are laid with a rising grade from the wells to the cistern, so that the air in the underground water flows to the air chamber before mentioned. There are about three and a half miles of suction pipes in the well systems, laid with lead joints, carefully caulked and protected further from the infiltration of air by flooding the meadows from the river through sluices in the dykes.

The pumping plant consists of two pumping engines, each ten million gallons capacity. They are Holly compound, condensing, horizontal beam, rotation type, with steam cylinders 24 x 42 inches, both 36-inch stroke, pumps double acting, 24 inches diameter, Corliss valve gear, surface condenser in force main, with boiler feed pumps and air pump connected to main engines. There is also an independent boiler-feed pump.

The boilers are National water tube, New Brunswick, 750 normal horse power, in three batteries. The pumping engines are set below ground level 10 feet. The engine-house is 90 x 94 feet, divided by division wall into boiler and engine-rooms. The boiler-room is at ground level with adjacent coal storage building, having capacity of 2,000 tons. A 36-inch force main, 192.80 feet in length, extends to the river road, and thence to Pavonia (Stockton), where connection is made with the old system to reservoir and stand pipe. The reservoir holds 8 millions. Stand pipe is 10 feet diameter and 75 feet high.

From the above-described connection with old plant, a new 30-inch main line of pipe extends through Stockton and southeastern part of Camden, 12,319 feet, to a new stand pipe 30 feet in diameter, 110 feet in height. Elevation 152 feet above high water in Delaware river.

The present plant pumping Delaware river water, and the new plant using well water, can be used separately or together with either or all the stand pipes and reservoir. The old plant will not be abandoned until after a year's use of the new plant. The wells are made in the two water veins; the upper vein or stratum is from 50 to 60 feet deep, the lower and best stratum, 95 to 120 feet deep. The greater part of the wells are made in the lower stratum. The strata follow approximately record of test wells in previous State Geological report, or as

CAMDEN COUNTY—Continued.

follows: Surface to 1 foot in depth, loam; 1 to 31 feet, light brown sand; 31 to 38 feet, dark brown sand; 38 to 64 feet, sand and water; 64 to 71 feet, light clay; 71 to 73 feet, dark blue heavy clay; 73 to 83 feet, clay; 83 to 94, 94 to 100, 100 to 103, 103 to 106 feet, sand, various shades, brownish tint; 106 to 112 feet, coarse white sand; 112 to 123 feet, gravel,  $\frac{1}{8}$  to  $\frac{3}{4}$ -inch diameter, and coarse white sand. The majority of the wells are 82 to 115 feet deep; the upper stratum wells being 50 to 63 feet deep.

The quantity of water is problematical at present. The pumps have delivered for four weeks from ten to fourteen million gallons per day to the city, with an average of eighteen feet lift. The pumps are designed to pump to twenty-four feet lift. They have been operated for three days at a fourteen-million rate, and the water in the cistern remained between eighteen and nineteen feet suction. The water recovers quickly on stoppage of pumps, rising twelve to fourteen feet in a few hours. The city has not yet received the plant, as work is not completely finished. As the contractor is under a bond of \$200,000 to maintain the quality and quantity to twenty million gallons each twenty-four hours for ten years, no exhaustive test of quantity is needed.

HENRY LEFFMAN, M.D., 715 WALNUT STREET,  
PHILADELPHIA, October 27th, 1897. }

Mr. L. E. Farnham, City Engineer, Camden, N. J.:

DEAR SIR—The following are the results of the analysis of the water brought October 22d, Camden new works. All figures are in parts per million:

	1.	2.	3.	4.	5.	6.
Total solids.....	50.0	60.0	90.0	50.0	70.0	50.0
Chlorin.....	6.0	6.0	6.0	6.0	4.8	4.8
Nitrogen as nitrates.....	2.6	3.4	4.0	1.4	2.2	4.0
“ “ nitrites.....	None.	None.	None.	None.	None.	None.
“ “ ammonium.....	Trace.	0.04	0.04	Trace.	Trace.	Trace.
“ by permanganate.....	Trace.			Trace.	Trace.	Trace.

The above figures show that these waters are all of high purity and suitable for all purposes.

HENRY LEFFMAN,  
Analytic Chemist.

NOTE.—Nos. 1 to 5, inclusive, samples are from wells at different points in the various systems. No. 6, from the suction pipe in engine-room, supposed to be an average sample of all the wells, it being the water draughted into the pumps after running some hours.

CAMDEN COUNTY—Continued.

CENTRE TOWNSHIP.

MEMBERS AND OFFICERS—Howard M. Haines, President, Haddon Heights; Abram E. Rowand, Chews Landing; Samuel Brown, Snow Hill; John H. Jackson, Secretary, Magnolia; O. S. Wood, M.D., Inspector, Magnolia; Francis D. Weaver, Attorney, Mt. Ephraim.

Population, census 1895, 2,047; area, 8,317 acres; number of births reported, 21; number of deaths reported, 43; number of deaths under one year, 10. One fatal case of typhoid fever occurred in the township. Three meetings were held by the board. One nuisance was reported and abated.

BOROUGH OF CHESELHURST.

MEMBERS AND OFFICERS—Robert Dennell, President; Joseph E. Thompson, Stephen L. Nichols, John Davis, Simon Kohout; Jacob T. Humphries, Secretary; George A. Vroom, Attorney.

Population, census 1895, 271; area, 1,230 acres; number of births reported, 7; number of deaths reported, 4; number of deaths under one year, 1. Twelve meetings were held. One complaint was made and one nuisance abated.

DELAWARE TOWNSHIP.

MEMBERS AND OFFICERS—John Meredith, Haddonfield; William T. Lippincott, Moorestown; Samuel K. Matlack, Haddonfield; William Graf, Haddonfield; W. B. Jennings, M.D., Secretary, Haddonfield.

Population, census 1895, 1,611; area, 15,613 acres; number of births reported, 14; number of deaths reported, 12; number of deaths under one year, 2. One case of scarlet fever and one of typhoid fever were reported. Two meetings were held.



CAMDEN COUNTY—*Continued.*

## CITY OF GLOUCESTER.

MEMBERS AND OFFICERS—Duncan W. Blake, President; Edward J. Steer, George Beakey, John Stimson, Albert Wolf, John J. Haley, M.D.; D. H. Lane, Secretary; W. H. Jenkins, Attorney.

Population, census 1895, 6,226; area, 1,108 acres; number of births reported, 85; number of deaths reported, 156; number of deaths under one year, 39. Two cases of diphtheria, two of membranous croup and four of typhoid fever were reported. Ten meetings were held. Ninety-six complaints were received by the board, and in each case where nuisances were found to exist abatement was secured. Four thousand feet of new sewers have been laid and property-owners on the lines of all sewers in the city compelled to connect.

## GLOUCESTER TOWNSHIP.

MEMBERS AND OFFICERS—C. H. Jenkins, President, Kirkwood; E. J. Coles, Blackwood; A. J. Driver, Blackwood; James Hurff, M.D., Blackwood; W. T. Gibbs, Assessor and Secretary, Clementon.

Population, census 1895, 3,479; area, 23,467 acres; number of births reported, 76; deaths, 111; deaths under one year, 17.

## BOROUGH OF HADDONFIELD.

MEMBERS AND OFFICERS—William J. Boning, President; Charles H. Hillman, J. M. Roberts, Edward B. Austin; William H. Harrison, Secretary; W. B. Jennings, M.D., Inspector; Charles H. Stevenson, Attorney.

Population, census 1895, 2,580; number of births reported, 49; number of deaths reported, 48; number of deaths under one year, 4. Contagious diseases were reported as follows: Diphtheria 7, 2 deaths; scarlet fever 3, 1 death. Twelve meetings were held by the board. Fifteen nuisances were reported and abated. One new ordinance relating to the regulation of cesspools was adopted.

CAMDEN COUNTY—*Continued.*

## HADDON TOWNSHIP.

MEMBERS AND OFFICERS—John Sloy, President, Westmont; D. A. Lippincott, Haddonfield; Samuel Wood, Haddonfield; William H. Harrison, Assessor and Secretary, Haddonfield; William B. Jennings, M.D., Inspector, Haddonfield.

Population, census 1895, 1,266; area, 7,900 acres; number of births reported, 103; number of deaths reported, 84; number of deaths under one year, 15. Contagious diseases reported: Diphtheria 2, 1 death; typhoid fever 3, no deaths. Twelve meetings were held by the board during the year. Eight complaints were received and in each case improvement was secured. No ordinances have been adopted by this board. The board was successful in one suit to abate a nuisance caused by a piggery.

## BOROUGH OF MERCHANTVILLE.

MEMBERS AND OFFICERS—D. H. Bartine, M.D., President; J. W. Marcy, M.D., A. H. Moese, F. W. Kleinz, G. C. Mick, W. B. Stewart, Secretary; W. H. Lewis, Inspector; C. V. D. Joline, Attorney.

Population, census 1895, 1,339; area, 380 acres. Twelve meetings were held by the board. Twenty complaints were received, to all of which attention was given by the board. A system of house-to-house inspection is in operation in this borough and the records are corrected in the month of May in each year.

## PENSAUKEN TOWNSHIP.

MEMBERS AND OFFICERS—Dr. Marcy, President; Issiah Hach, D. W. Horner; Harry E. Horner, Secretary; Kellum Bennett, Inspector.

Area, 7,868 acres; number of births, 37; number of deaths, 20; number of deaths under one year, 7.

## TOWN OF STOCKTON.

MEMBERS AND OFFICERS—W. E. Hancock, President; Charles Irele, D. E. Todd, H. H. Sherk, M.D.; James Jarvis, Secretary.

CAMDEN COUNTY—*Continued.*

Population, census 1895, 8,010; area, 1,984 acres; number of births reported, 155; number of deaths reported, 166; deaths under one year, 36. The board has instituted more thorough measures for the purification of infected premises, and they have also undertaken the supervision of the collection of garbage. Contagious diseases are promptly reported and steps for the prevention of the spread of these affections are energetic.

## WATERFORD TOWNSHIP.

MEMBERS AND OFFICERS—M. S. Bittle, J. P. Mitten, L. V. Wills, F. O. Stem, M.D.; M. D. Beckley, Assessor and Secretary. All of Berlin.

Population, census 1895, 2,789; area, 36,688 acres; number of births reported, 78; number of deaths reported, 41; number of deaths under one year, 11.

## WINSLOW TOWNSHIP.

MEMBERS AND OFFICERS—Joseph G. Strock, President, Cedar Brook; Enoch Cordrey, Elm; Charles Allbright, Elm; Michael G. Burdsall, Assessor and Secretary, Wilton.

Population, census 1895, 2,034; area, 37,910 acres; number of births reported, 38; number of deaths reported, 35; number of deaths under one year, 10. There is no physician dwelling in the township, and reports to the secretary are not received with regularity. These reports are made to the board in the district where the attending physician resides. Two meetings have been held by the board during the year.

## CAPE MAY COUNTY.

## BOROUGH OF ANGLESEA.

MEMBERS AND OFFICERS—George W. Dougherty, Secretary.

Population, census 1895, 247. The terms of membership of the persons formerly constituting the board have expired, and their successors have not been appointed.

CAPE MAY COUNTY—*Continued.*

## CITY OF CAPE MAY.

MEMBERS AND OFFICERS—Alonzo L. Leach, M.D., President; George L. Lovett, Thomas W. Millet, J. Stratton Ware, Walter S. Ware; Lewis T. Stevens, Secretary; George Young, Inspector.

Population, census 1895, 2,451; area, 13,116 acres; number of births reported, 28; number of deaths reported, 37, including 13 non-residents; number of deaths under one year, 7. No account is kept of communicable diseases in the city, and no reports are made by physicians. Sixteen meetings were held during the year. Six complaints were received and six nuisances abated. Serious defects exist on school premises in the city. Suits have been brought by the board with unsatisfactory results.

## DENNIS TOWNSHIP.

MEMBERS AND OFFICERS—Charles E. Foster, President, South Seaville; Eugene Way, M.D., Dennisville; S. L. Hand, Dennisville; Samuel Bishop, Eldora; L. M. Rice, Jr., Inspector, Assessor and Secretary, Dennisville.

Population, census 1895, 2,370; area, 49,218 acres; number of births reported, 61; number of deaths reported, 29; number of deaths under one year, 4. A few complaints have been received by the board and investigation has in each case been followed by improvement.

## BOROUGH OF HOLLY BEACH.

MEMBERS AND OFFICERS—William G. Garrison, President; A. W. Elanquist, W. E. Forum, Charles Bridges.

Population, census 1895, 300; area, 400 acres; number of births reported, 3; number of deaths reported, 2. One fatal case of diphtheria occurred in the borough. Thirteen meetings were held by the board. A new water-supply from artesian wells was introduced during the summer of 1897. Two nuisances were reported, both of which were abated.

CAPE MAY COUNTY—*Continued.*

## LOWER TOWNSHIP.

MEMBERS AND OFFICERS—George Dickinson, President and Inspector, Erma; A. B. Walters, Cold Spring; Daniel Schellenger, Wilson A. Lake, M.D., Green Creek; William C. Rutherford, Assessor and Secretary, Cold Spring.

Population, census 1895, 1,063; area, 22,810 acres; number of births, 40; number of deaths, 25; number of deaths under one year, 4. No reports of contagious diseases have been reported. Four meetings have been held by the board during the year. Two complaints have been received, and in both cases the conditions complained of were improved.

## MIDDLE TOWNSHIP.

MEMBERS AND OFFICERS—V. N. Erickson, President, Dias Creek; Luther L. Swain, Swaintown; T. W. Garretson, Cape May Court House; Julius Way, M.D., Cape May Court House; Stillwell H. Townsend, Assessor and Secretary, Cape May Court House.

Population, census 1895, 2,500; area, 21,321 acres; number of births reported, 44; number of deaths reported, 46; number of deaths under one year, 9. One case of scarlet fever was reported. The board held two meetings. A new sewer was laid in Cape May Court House for the drainage of surface water for Mechanic street. One complaint was received by the board and the nuisance was abated. One case of typhoid fever occurred, which was traced to the pollution of well water by surface drainage from the kitchen. An outbreak of hog cholera has appeared and has not yet subsided.

## OCEAN CITY.

MEMBERS AND OFFICERS—B. T. Abbott, President; Jesse Connor, Charles S. Campbell, Frederick Rapp; William Lake, Secretary; A. B. Endicott, Attorney.

Population, census 1895, 921; area, 3,000 acres; number of births reported, 38; deaths reported, 18; deaths under one year, 3. The following diseases were reported: Scarlet fever 3, 1 death; typhoid fever 11, 1 death. Reports from physicians notifying the board of health of the cases of communicable diseases are promptly received. Meetings have been held each month.

CAPE MAY COUNTY—*Continued.*

## BOROUGH OF SEA ISLE CITY.

MEMBERS AND OFFICERS—C. H. Clonting, President; N. Davis, M.D., F. G. Rachor, J. W. Krouse; J. D. Norcom, Secretary; Eugene C. Cole, Attorney, Seaville.

Population, census 1895, 424; area, 1,260 acres. Twelve meetings were held.

## UPPER TOWNSHIP.

MEMBERS AND OFFICERS—T. Corson, President, Petersburg; B. Smith, Tuckahoe; A. B. Smith, Beesley's Point; A. G. Corson, Palermo; J. T. Yong, Secretary, Beesley's Point; Randolph Marshall, Inspector, Tuckahoe.

Population, census 1895, 1,420; area, 50,763 acres: number of births reported, 48; number of deaths reported, 33; number of deaths under one year, 6. Three cases of diphtheria were reported, one of which caused death. Two meetings were held.

## BOROUGH OF WEST CAPE MAY.

MEMBERS AND OFFICERS—John W. Reeves, President; Thomas H. Hughes, William Smith, John G. Craig; John Reeves, Secretary; Spencer W. Barnett, Inspector; Spicer Learning, Attorney.

Population, census 1895, 109; area, 1,000 acres. Four meetings were held by the board. Six nuisances were reported, all of which were abated. In several instances parties violating the health ordinance have been prosecuted and the penalty inflicted. The board is meeting with considerable difficulty in the attempt to regulate the disposal of garbage. The feeding of garbage to hogs has created a nuisance, and the board has caused the arrest of several parties who persisted in this practice.

## BOROUGH OF WILDWOOD.

MEMBERS AND OFFICERS—G. J. R. Miller, President; Charles H. Seaman, Frank Jones, J. M. Craner; W. R. Prentiss, Secretary; Nelson Hayes, Inspector.

Population, census 1895, 109. Six meetings were held during the year. A system of sewerage is now under construction. Five nuisances were abated.

## CUMBERLAND COUNTY.

## CITY OF BRIDGETON.

MEMBERS AND OFFICERS—David K. Streets, M.D., President; Alfred S. Sharp, Wm. H. Ballinger, F. G. Davis, M.D., Wm. H. Sonders; M. K. Elmer, M.D., Medical Officer; Clarence M. Du Bois, Secretary; Charles E. Bellons, Inspector; Charles F. Reeves, Plumbing Inspector; James S. Ware, Attorney.

Population, census 1895, 13,292; area, 4,326 acres; number of births reported, 282; number of deaths reported, 211; number of deaths under one year, 53. During the year 44 cases of diphtheria, 1 death; 11 cases of membranous croup, 11 deaths; scarlet fever, 47 cases; typhoid fever, 37 cases, 1 death was reported. Thirteen meetings were held. Many complaints were received on account of the discharge of waste water into street gutters, but the board was unable to prevent this practice because there is no public sewer system in the city. The typhoid cases are believed to have been due in all instances to polluted well water. One suit was brought by the board to prevent the flow of filthy water into the street. The introduction of a system of sewers is being agitated by the board of health, and the city council has recently appointed a committee to inquire into the method of disposal which would be suitable to employ, and also in regard to the cost which would be involved. A careful house-to-house inspection is at present being made by the board of health for the purpose of discovering local sources of well pollution, and with the object of closing every well which is found to be contaminated.

The president of the board writes as follows:

We are not at all prepared to meet a serious epidemic of any kind, having no hospital; and about all that has ever been done by our board to prevent the spread of disease is to have physicians report all cases of contagious affections, whereupon the board placards the infected house with a caution card, and keeps the children of the family from attending the public schools until the danger period is past.

Bridgeton, at present, is without a system of sewerage, so we are unable to keep the city in as sanitary a condition as we otherwise might, there being no means of getting rid of waste fluids except by use of cesspools, which are becoming very numerous. A movement is now on foot to secure a complete sewer system for our city, which, we trust, will meet with better fate at the hands of our city council than befell the last attempt, made a year or more ago. At present the people use cesspools, the gutters of the streets and a few residents have private sewers, which empty into the Cohansy creek, which runs through the center of the town.

## CUMBERLAND COUNTY—Continued.

Since April 1st, 1892, there have been reported to the board 265 cases of typhoid fever, an average of over fifty cases a year. As this is a disease which would not exist if the water-supply was pure, the board began an investigation, to determine, if possible, the cause of these constantly-recurring cases of this disease. It was found that about ninety-eight per cent. of the cases were using water from private wells, the water of which, upon examination, was found to be very impure and unfit for use, and the soil around the wells was so filthy that the board concluded that the wells would never again be fit for use as a water-supply for drinking purposes. After several meetings and discussions it was decided to enter upon a crusade against the surface wells and fill up all those now contaminated or likely to become so in the near future. This crusade is now going on, and is, I am happy to state, meeting with but little opposition from our people, except from a few owners of cheap tenements, who object to any improvements which diminish their incomes.

So far we have found to exist in the First and Second wards, the oldest part of our city, 609 private wells, which are used as a source of supply for drinking water. In the case of every well thus far examined, the water has been found to be very impure and unfit for use. This is the most important step that our board has ever taken to prevent disease, and I trust it will meet with success.

The inspector reports that during the year ending June 30th, 1897, 129 houses were placarded for contagious diseases.

Attention is called to the large number of unvaccinated children in the city, and it is shown that in one ward (the Second) the school census, taken in May, 1897, revealed the fact that out of 776 children, there were 550 unprotected by vaccination, and it is believed that in other sections of the city the proportion of unvaccinated children is even larger than that stated above.

## COMMERCIAL TOWNSHIP.

MEMBERS AND OFFICERS—William H. Berry, President; W. D. Robbins, J. M. Compton; G. C. Andrews, Secretary; E. J. Cook, Assessor, Fort Norris.

Area, 22,461 acres; number of births reported, 31; number of deaths reported, 12; number of deaths under one year, 2.

## DEERFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Elijah R. Parven, President, Deerfield street; Pierce A. Krespack, Rosenhayn; Charles H. Brooks, Finley Station; James Hand, Seeley; Charles Phillips, M.D., Secretary, Deerfield street; E. R. Parven and Pierce A. Krespack, Inspectors.

## CUMBERLAND COUNTY—Continued.

Population, census 1895, 3,115; area, 30,372 acres; total number of births, 38; total number of deaths, 27; total number of deaths under one year, 4. Meetings are held by the board every second month.

## DOWNE TOWNSHIP.

MEMBERS AND OFFICERS—R. H. Leaming, Newport; Charles Shepard, Newport; N. Love, Dividing Creek; A. S. Glanden, M.D., Newport; George E. Butcher, Assessor and Secretary, Dividing Creek.

Area, 20,374 acres; number of births reported, 15; number of deaths reported, 11. The only case of communicable disease reported was one of scarlet fever. One meeting was held by the board.

## FAIRFIELD TOWNSHIP.

MEMBERS AND OFFICERS—George C. Munyon, E. Coates Swing, John E. Ogden; E. H. Whitticar, Secretary; J. V. Mulford, Assessor. All of Fairton.

Population, census 1895, 1,802; area, 28,522 acres; number of births reported, 7; number of deaths reported, 16; number of deaths under one year, 9.

## GREENWICH TOWNSHIP.

MEMBERS AND OFFICERS—George Watson, President; J. D. Brown, George W. Sloan, S. M. Snyder, M.D.; Morris Bacon, Assessor and Secretary. All of Greenwich.

Population, census 1895, 1,328; area, 12,391 acres; number of births reported, 36; number of deaths reported, 18; number of deaths under one year, 6. No communicable diseases have been reported to the board during the year. The board has held four meetings.

## LANDIS TOWNSHIP.

MEMBERS AND OFFICERS—O. H. Adams, M.D., President; G. W. Lewis, D. H. Burge, Joseph H. Hadsell; Richard Johnson, Secretary and Inspector. All of Vine-land.

## CUMBERLAND COUNTY—Continued.

Population, census 1895, 4,660; area, 43,376 acres; number of births reported, 138; number of deaths reported, 138; number of deaths under one year, 20. A number of cases of typhoid fever have occurred, accompanied by two deaths. Open surface wells are believed to have been the cause of the illness and the board ordered an examination of the suspected wells. Two meetings were held by the board.

## LAWRENCE TOWNSHIP.

MEMBERS AND OFFICERS—H. O. Newcomb, President, Cedarville; Ephraim Bateman, M.D., F. M. Bateman, M.D.; Henry S. Long, Secretary.

Population, census 1895, 1,729; area, 23,100 acres; number of births reported, 28; deaths reported, 15; deaths under one year, 5. One meeting was held during the year.

## MAURICE RIVER TOWNSHIP.

MEMBERS AND OFFICERS—Charles G. McClain, President; Jacob Mayhew, Jacob B. Lee; Henry Reeves, Jr., Assessor and Secretary.

Population, census 1895, 2,116; area, 61,426 acres; number of births reported, 28; number of deaths reported, 27; number of deaths under one year, 2.

## CITY OF MILLVILLE.

MEMBERS AND OFFICERS—Edwin Conover, President; Richard Radcliffe, John W. Simmons, Silas C. Smith, John W. Wade, M.D.; L. H. Hogate, Secretary; Frank Bullock, Inspector; H. O. Newcomb, Attorney.

Population, census 1895, 10,466; area, 29,138 acres; number of births reported, 214; number of deaths reported, 103; number of deaths under one year, 22. Contagious diseases were reported as follows: Diphtheria, 1; scarlet fever, 11; typhoid fever, 5. The board is unable to secure prompt reports in all cases of communicable disease, and two physicians are uniformly negligent in reporting births. Six meetings were held. About one hundred complaints

CUMBERLAND COUNTY—*Continued.*

were received, and improvement was secured in nearly every instance. A complaint by the citizens of Millville was made to the State board of health in regard to the pollution of a small brook running through the borough of Vineland and discharging into the Maurice river, about eight miles above the intake for the public water-supply of Millville. Investigation by the State board of health resulted in a plan of co-operation by which, in all probability, sewers will be constructed by the borough of Vineland and the further pollution of the Maurice river will be thereby prevented.

## STOW CREEK TOWNSHIP.

MEMBERS AND OFFICERS—Charles D. Fogg, President, Shiloh; Edward H. Sheppard, Roadstown; John H. Willis, Roadstown; Joshua B. Seagrow, Shiloh; E. S. Fogg, M.D., Roadstown.

Population, census 1895, 996. One meeting was held during the year.

## BOROUGH OF VINELAND.

MEMBERS AND OFFICERS—Robert Pond, I. D. Eilenberg, Walter Foulke, Frank Flood, Stewart Morris, John A. Ackley; John S. Halsey, M.D., Secretary; N. S. Marvel, Inspector; Wheaton W. Berault, Attorney.

Population, census 1895, 4,126; area, 640 acres. Six cases of diphtheria, five of scarlet fever and fourteen of typhoid fever (two deaths) were reported. Prompt reports were made of cases of communicable diseases by all physicians, with two exceptions. The disposal of waste fluids in Vineland is either upon or into the ground, there being no sewers in the borough, and consequently pollution of the brook flowing through the borough has occurred, and as the brook flows into the Maurice river, and mingles its waters with those which furnish the public supply for the city of Millville, six miles below, there is urgent necessity on the part of the authorities of Vineland for active measures to prevent the continuation of the contamination of this stream. The construction of sewers constitutes the only effectual remedy for the existing conditions. Twelve regular and five special meetings were held by the board.

## ESSEX COUNTY.

## BELLEVILLE TOWNSHIP.

MEMBERS AND OFFICERS—G. O. Cyphers, M.D., President; H. W. Underwood, James T. Boylan, J. A. Finan, P. Black; Wm. Connolly, Assessor; D. M. Skinner, M.D.; J. J. Hannan, Secretary; J. J. Connell, Inspector. All of Belleville.

Population, census 1895, 4,568; area, 1,873 acres; number of births reported, 59; number of deaths reported, 104; deaths under one year, 23. The following infectious diseases occurred: Diphtheria, 25; scarlet fever, 36. It is believed that the first cases of these diseases were brought into Belleville from Newark and Bloomfield. Isolations of the patients, and placarding and disinfection of premises are relied upon to prevent the spread of these diseases. With few exceptions, cases of communicable disease have been promptly reported by physicians. Twelve meetings have been held by the board during the year.

## BLOOMFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Benjamin Haskell, President; G. Lee Stout, John A. Lawrence, James H. Moore, George Foster, Thomas Albinson, Frank Fisher, Charles H. Bailey, M.D., Samuel H. Baxter; Wm. L. Johnson, Secretary; Seymour S. Gilbert, Inspector; Charles H. Halpenny, Attorney.

Population, census 1895, 8,093; area, 4,308 acres; number of births reported, 194; number of deaths reported, 129; number of deaths under one year, 30. The following cases of communicable diseases were reported to the board: Diphtheria, 23, 5 deaths; scarlet fever, 27, no deaths; typhoid fever, 8, 3 deaths. Twelve meetings were held by the board. The sewers have been extended by the addition of fifteen miles of pipe. One hundred and three nuisances were reported, all of which were abated. Several suits were brought by the board, and in all cases the action of the board was sustained by the court. The following is an extract from the annual report of the health officer, Charles H. Bailey, M.D.:

The first meeting of the board of health was held for organization, April 27th, 1896. The early meetings were taken up with complaints about defective drainage in certain localities, and local nuisances. These were promptly abated.

## ESSEX COUNTY—Continued.

Not until the meeting of August 17th was any new work undertaken by the board. At this meeting an ordinance in relation to sewer connections was introduced, and passed its second reading. At the meeting held August 31st this ordinance was read for the third time and passed. At this meeting, the health physician and inspector were ordered to secure specimens of water from all the wells in the Franklin street brick row, and have the same analyzed. At the meeting held November 9th, the chemist's report concerning these wells was read. He reported them unfit for domestic use, and they were promptly condemned. A special meeting was called for November 23d to consider the closing of these wells, and the owners of these houses and their tenants were notified to be present at that meeting, when due action would be taken.

A petition from people living in Brookdale remonstrating against the dumping of cesspool matter in a certain locality was presented. This was declared to be a nuisance by the board, and ordered stopped. To make sure their orders were carried out, a special health inspector was appointed for this purpose, and all non-resident scavengers were warned against violating this order, and a copy of the health code sent to each by the secretary of the board. Also a committee was appointed to draw up a plumbing code.

At the meeting held November 23d a resolution was passed ordering the owners of the Franklin street brick row to introduce the city water, and to abandon the wells and remove the pumping fixtures. The Health Inspector was instructed to get samples of water from the wells supplying the rows in Race street, Bloomfield avenue, and No. 110 Orange street, and have them analyzed by H. B. Baldwin, chemist; also to make a thorough sanitary inspection of these rows, as well as those on Newark avenue and Lake street, and make his report in writing.

The Health Physician was authorized to engage Chemist Baldwin, at a yearly salary, as the official chemist of the board.

At the meeting on February 8th the well at No. 305 Broad street was condemned and ordered abandoned, the chemist reporting it polluted. The well at No. 110 Orange street was condemned and ordered closed for the same reason. The Race street wells were reported good, and consequently not interfered with by the board.

The written report of the Health Inspector concerning the sanitary condition of the rows before mentioned was presented. This report was favorable to all the rows save the one on Bloomfield avenue. This was reported to be in a deplorable condition. A committee was appointed to take steps to compel the owner to introduce city water and connect with the sewer; also to compel sewer connections with the Franklin street row. A new plumbing code was introduced and read for the first time. At the meeting February 20th this was passed to its second reading.

The health of the town has been unusually good. We have had a smaller number of cases of contagious disease than in the preceding year. Every effort has been made to keep these diseases out of the schools, and with very gratifying results.

On account of the existence of cesspools in the more thickly-settled portions of Bloomfield along the lines of sewers, the board has notified owners to make sewer connections within a limited time, in accordance with the act approved May 12th, 1896. (See Laws of 1896, page 345.)

## ESSEX COUNTY—Continued.

## BOROUGH OF CALDWELL.

MEMBERS AND OFFICERS—James Best, President; J. H. Budd, Fred. E. Cook, E. S. Peck, M.D.; Thomas W. Biggs, Secretary; Adam Beam, Inspector; Thomas C. Provost, Attorney.

Population, census 1895, 984. The following communicable diseases were reported: Diphtheria, 5; membranous croup, 1; typhoid fever, 1. None of these cases proved fatal. Nine meetings were held, four complaints were received and the nuisances were abated in each case.

## CALDWELL TOWNSHIP.

MEMBERS AND OFFICERS—E. E. Peck, M.D., President; Caldwell; George M. Canfield, Caldwell; Charles B. Kent, Fairfield; Lewis Courter, Caldwell; Peter Johnson, Caldwell; J. S. Vanness, Caldwell; Theodore Vincent, Assessor and Secretary.

Population, census 1895, 1,658; area, 13,484 acres; number of births reported, 54; number of deaths reported, 57; number of deaths under one year, 12. The board held one meeting.

## CLINTON TOWNSHIP.

MEMBERS AND OFFICERS—David T. Knight, President, Irvington; Lewis Voorhees, Irvington; William R. Ward, M.D., Lyons Farms; William E. Glorieux, Lyons Farms; Frank Sharp, Irvington; James H. Maitland, Assessor and Secretary, Irvington; Ira Meeker, Inspector, Irvington.

Population, census 1895, 2,082; area, 4,397 acres; number of births reported, 81; number of deaths reported, 78; number of deaths under one year, 10. During the year twelve cases of diphtheria, seven of scarlet fever and one of typhoid fever were reported. Two deaths resulted from diphtheria and one from typhoid fever. No deaths were reported from scarlet fever; ten meetings were held by the board; six complaints of nuisances were received and abatement was obtained in all these cases. One suit was brought by the board under the ordinance regulating the dumping of night soil. Defendant was convicted and paid \$50 and costs.

## ESSEX COUNTY—Continued.

## EAST ORANGE TOWNSHIP.

MEMBERS AND OFFICERS—W. C. Schmidt, President; William Cardwell, D. C. Whitman, J. H. Palmer, P. C. Williams, E. J. Condit, C. M. Matthews, F. Coyne, Jr., E. O. Stanley, E. E. Bruen, E. R. Crippin, S. W. Ougheltrae, John Dorer, J. L. Dodd, W. J. Pancher; W. D. Mitchell, M.D., Secretary; William T. Bowman, Inspector; George E. Clymer, Jr., Attorney.

Population, census 1895, 17,927; area, 2,498 acres; number of births reported, 230; number of deaths reported, 202; number of deaths under one year, 21. Forty-two cases of diphtheria, 1 case of membranous croup, 144 cases of scarlet fever and 4 cases of typhoid fever were reported. The influence of school attendance upon the spread of these diseases was carefully observed, and the board is satisfied that the prevalence of scarlet fever and diphtheria is largely due to infection transmitted in the schools. Reports from physicians in this district are prompt and satisfactory. Eighteen meetings were held, many complaints received and in nearly all cases the nuisances complained of were abated. Several suits were brought by the board for the abolishment of offensive cesspools and privy vaults.

## FRANKLIN TOWNSHIP.

MEMBERS AND OFFICERS—George B. Philhower, M.D., President; Abram Bloom, M. P. Kaufmann, Charles B. Van Houten, Foster Kierstead, John P. Dillig, Frederick Carlisle, Earnest E. Faith; Adrian Vreeland, Secretary; Alfred F. Skinner, Attorney. All of Nutley.

Population, census 1895, 3,076; area, 2,235 acres; number of births reported, 45; number of deaths reported, 36; number of deaths under one year, 8. Fifty-four cases of diphtheria, with five deaths; six cases of scarlet fever, no deaths, and four cases of typhoid fever, with one death, occurred. Reports of physicians are promptly made. Six meetings of the board were held. The health ordinances of the township were amended to compel scavengers to use an odorless excavating apparatus. Dairy premises situated in the township are regularly inspected by the board.

## ESSEX COUNTY—Continued.

## BOROUGH OF GLEN RIDGE.

MEMBERS AND OFFICERS—H. C. Harris, M.D., President; J. Alexander Brown, M.D., Frederick C. Osterhout, Homer R. Metcalf; H. K. Benson, Secretary; F. W. Crane, Inspector; Riker & Riker, Attorneys.

Population, census 1895, 1,644; area, 779 acres; number of births reported, 21; number of deaths reported, 12; number of deaths under one year, 1. Contagious diseases reported: Diphtheria, 2; scarlet fever, 4; typhoid fever, 1. Nine meetings were held. Some new water mains have been laid, but no extension of sewers was made during the year, owing to a misunderstanding between the township and the borough.

Six complaints were received and six nuisances were abated.

Several suits were brought by the board for violation of the ordinances.

The ordinances of the board were amended in some particulars during the year. The following blank form is employed by the board in calling the attention of owners of property to defective plumbing:

BOARD OF HEALTH.

GLEN RIDGE, N. J. .... 189

DEAR SIR:

You have been notified that the plumbing in your house on .....street, occupied by....., is defective.

Please have your plumber apply at once to the Secretary of the Board of Health for the necessary permit, in compliance with Board of Health Code, sections 76 and 77, so as to allow him to place the plumbing in a sanitary condition.

Yours truly,

.....  
Secretary.

## VILLAGE OF IRVINGTON.

MEMBERS AND OFFICERS—E. R. Adams, President; Mahlon Drake, Josiah Hitchcock; Wm. Y. Laird, Secretary; Ira Meeker, Inspector.

Population, census 1895, 3,388.



## ESSEX COUNTY—Continued.

## LIVINGSTON TOWNSHIP.

MEMBERS AND OFFICERS—Issac A. Crane, President, Chatham; Daniel D. Grannis, Livingston; Wm. H. Harrison, Roseland; George W. Morehouse, Livingston; Wm. B. Johnson; E. E. Peck, M.D., Inspector, Caldwell; George E. De Camp, Assessor and Secretary, Roseland.

Population, census 1895, 1,311; area, 11,148 acres; number of births reported, 10; number of deaths reported, 16; number under one year, 2. One case of scarlet fever was reported. Two meetings were held.

## MILLBURN TOWNSHIP.

MEMBERS AND OFFICERS—C. O. Lyon, President; Richard Hopkins, S. B. Parull, G. W. Soper, G. M. Taylor, Wellington Campbell, M.D.; J. M. Drake, Assessor and Secretary.

Population, census 1895, 2,762; area, 6,524 acres; number of births reported, 43; number of deaths reported, 4; number of deaths under one year, 2.

## TOWN OF MONTCLAIR.

MEMBERS AND OFFICERS—David D. Duncan, President; Moses N. Baker, Vice President; James S. Brown, M.D., Charles D. Thompson; Richard P. Francis, M.D., Secretary; Marshall O. Leighton, Inspector; Edwin B. Goodell, Attorney.

From the report furnished by Mr. Marshall O. Leighton the following statements have been selected.

During the past year there has been no change in the membership of the board and the same officers have been re-engaged. Besides making considerable progress in all the old branches of our work, several new features have been added, which have been the means of securing greater efficiency in our public health work.

The population of Montclair, according to the census of 1895, was approximately 11,800. From the reports of the house-to-house inspection, carried on during the past summer, we find that the present population is 12,400 to 12,500. The total number of deaths for the year ending January 30th, 1897, was 139, which gives a death-rate per thousand of 11.12. In the accompanying table is given the mortality from the ten most fatal diseases:

## ESSEX COUNTY—Continued.

	Deaths.
Pneumonia.....	16
Diarrhoeal diseases of children.....	13
Disease of heart.....	10
Consumption.....	9
Bronchitis.....	6
Endocarditis.....	6
Apoplexy.....	4
Marasmus.....	3
Diphtheria.....	3
Scarlet fever.....	3
Number deaths under one year.....	40

It is gratifying to note that consumption, which usually leads in mortality everywhere, is, in this case, relegated to fourth place, and diphtheria, generally so fatal, occupies in the above list an inconspicuous position.

The following births, marriages and deaths occurred in Montclair during the year ending June 30th, 1897:

	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	Total.
Births.....	25	26	27	25	2	30	24	37	30	20	1 <sup>1</sup>	1 <sup>1</sup>	289
Still-births.....	5	4	4	3	1	1	2	2	.....	1	.....	.....	21
Marriages.....	6	4	13	9	15	4	6	4	5	15	2	10	93
Deaths.....	12	13	14	8	10	14	8	10	14	12	11	8	139

The following communicable diseases were reported during the year ending June 30th, 1897:

NAMES OF DISEASES.	Number of cases reported.	Number of deaths.	Number of houses infected.	Number of out-breaks confined to the first house.
Diphtheria.....	18	2	10	9
Scarlet fever.....	66	3	50	49
Typhoid fever.....	16	3	15	15

The most interesting, if not the most important work carried on by the board, is the general supervision of contagious diseases. This comprises a system of quarantine, investigation into the source of infection, disinfection and final discharge of all cases of small-pox, diphtheria, membranous croup, typhoid fever, scarlet fever and measles. There have been several changes in the method of carrying on this work during the past year, the important features of which are here noted.

Upon report of a case of any of the above diseases, a thumb-tack

ESSEX COUNTY—Continued.

of the color nominated to designate that particular disease, is inserted in the contagious disease map of Montclair at a point corresponding to the exact situation of the patient's residence. Here it is allowed to remain until the case is discharged from quarantine, when it is removed, and a pin with a head of the same color is inserted in its place, and is retained in that position until the end of the fiscal year. With this record at hand we are enabled to determine the infected localities and make certain instructive observations which serve as a guide in applying our efforts in the line of sanitary supervision and reform. Inspection of the map at the end of this year shows, besides a general dotting of pins, three focal points of infection. Two of these are schools which have been the means of spreading a typical epidemic of measles. The third is undoubtedly the worst locality, from a sanitary point of view, that exists in Montclair. Up to May 1st, 1897, the time at which the outbreak of scarlet fever and measles began, more than one-half of all the contagious diseases reported since June 1st, 1896, were situated within this district. These cases were not the result of a general outbreak which had swept from family to family as in the instance of a well-marked epidemic, but here and there cases of diphtheria, typhoid and scarlet fever have occurred, traceable to no apparent source, and fostered by unsanitary conditions which abound in that vicinity.

We look for such results in an area characterized by bad drainage, an abundance of suspicious wells and divers deposits of putrescible matter, and we are not disappointed in this instance.

Further developments have extended along the line of quarantining school children. All children residing in a house in which there is a case of contagious disease are, immediately upon report, excluded from attendance in the public schools. The following form is used for this purpose:

BOARD OF HEALTH.  
MONTCLAIR, N. J. .... 189

Superintendent of Public Schools.

DEAR SIR: Contagious disease exists in the family of ..... school,  
No. .... Please exclude from .....  
.....grade, until further notice from this  
department.

For the Board of Health,  
.....  
Health Inspector.

ESSEX COUNTY—Continued.

Upon discharge of the cases each pupil is provided with one of the following forms properly filled out and indorsed. No teacher is allowed to receive into the class any pupil thus excluded until the latter presents this certificate:

BILL OF HEALTH.

Used by authority of the Board of Health of the Town of Montclair.  
MONTCLAIR, N. J. .... 189

Permission is hereby given to.....  
.....residing at No .....  
.....to attend school.  
For the Board of Health,  
.....  
Health Inspector.

The following time regulations have been adopted, and a copy is given to each family when placed under quarantine. It is found that it serves to check quite effectually the premature discharge of patients, which, from time to time has, given trouble.

TIME REGULATIONS CONTROLLING CONTAGIOUS DISEASES. ADOPTED BY THE BOARD OF HEALTH OF THE TOWN OF MONTCLAIR.

Disease.	Quarantine after last exposure to infection.	Earliest date of return to school after an attack.
Small pox.	18 days.	When all scabs have fallen off.
Chicken-pox.	18 days.	When all scabs have fallen off.
Scarlet fever.	14 days.	Six weeks, and then only if no desquamation or sore throat exists.
Diphtheria.	12 days.	Three weeks, if convalescence is complete and no sore throat or Klebs-Loeffler bacilli remain.
Measles.	16 days.	Three weeks if all desquamation and cough have ceased.
Whooping Cough.	21 days.	Six weeks from the commencement of the whooping, if characteristic spasmodic cough and whooping have ceased. Earlier if all cough be gone.
Rotheln.	16 days.	Two or three weeks.
Mumps.	24 days.	Four weeks, if all swelling has subsided.

Of the eighteen cases of diphtheria reported during the year only three have proved fatal, while in the preceding year twelve cases were reported, with four deaths; a much higher mortality. Two cases were traced to sources of infection outside of Montclair, five are known to have been communicated here, while in the remaining ones it was impossible to discover any cause whatsoever.

## ESSEX COUNTY—Continued.

During October, four cases occurred in two families in the vicinity of the Cedar street school, and it was found that the contagion was carried from one family to another by the way of the kindergarten department in the school. Prompt action on the part of the board of education in closing the school and thorough disinfection of the rooms and apparatus wree, no doubt, instrumental in preventing further spread of the disease.

The morbidity from typhoid fever has been exceptionally low during the past year, and were it not for the cases which our citizens bring from summer resorts when they return in September, the disease would be rare indeed. Of the sixteen cases reported during the past year, ten are known to have been brought in this manner, and we strongly suspect two more.

Prior to May 1st, Montclair was fortunate in its scarlet fever record. While the disease had been very prevalent in nearly all surrounding towns we have had reported a few isolated cases which were scattered about generally. At the above date began a slight epidemic, which resulted in twenty primary and seven secondary cases.

The lower grades of Chestnut street and Mt. Hebron schools were visited this spring by an outbreak of measles. Investigation showed that in each school the outbreak was started by an infected pupil who was not sufficiently ill to be detained at home. Such cases are difficult to prevent, and, as the disease is highly infectious from the beginning, it is spread in a class-room before we are aware that it exists. Forty-nine cases have occurred during the year, twenty-one less than during the year previous.

The important work of disinfection is now performed exclusively by the board of health. Prior to January 1st, 1897, we employed fumigation with sulphurous acid and a subsequent washing of all woodwork with corrosive sublimate or milk of lime. In some cases, where walls and ceilings may be washed, the fumigation has been omitted. All washable fabrics are boiled, and other articles which are difficult of disinfection by other means are burned. Since June 1st, formaldehyde gas has been substituted for sulphurous acid with very satisfactory results.

During the past summer the annual house-to-house inspection was made. Results show a marked improvement in the general sanitary

## ESSEX COUNTY—Continued.

condition of Montclair over that of the preceding year. The sewer and water systems have been extended, and several old and grievous nuisances have been abated.

The investigation and abatement of nuisances has in former years been an important part of our work. The town brooks continue to be the greatest nuisance with which the board has to deal, although much has been done to prevent their pollution by house drainage. The extension of the sewer system has been the greatest help in this direction, and several laterals have been the means of relieving certain sections of Tony's brook from the sewage of a whole street. With this end in view efforts have been made to extend the sewerage system on certain streets. We have been successful in Montague place and Portland place, and there is good reason to believe that a like result will be reached in Talbot and North Willow streets.

For several years the Italian boarding-houses situated in the Fourth and First wards have given the citizens of Montclair some concern on account of the practice of overcrowding, which was common there. It was realized that if any contagious disease should get a foothold in this section it would spread to an alarming degree and endanger the whole population. It was necessary to inspect the premises at night in order to procure evidence against the proprietors of these houses and thereby secure a prosecution. Accordingly, two midnight visits were made, and in both abundant evidence was forthcoming. Eleven proprietors were arrested and fined by the court. Such action has been very beneficial, as it had the effect of diminishing to a very large degree this dangerous practice.

Since the adoption of Ordinance No. 7, entitled "An ordinance to compel property-owners in the town of Montclair along the line of any sewer to connect their houses and other buildings therewith," a large amount of time has been spent in enforcing it. It was in the judgment of the board necessary that all houses situated on streets in which there were sewers, should have a sewer connection. The work of carrying out this policy was begun, but was interrupted by the approach of the winter season, and later by the May epidemic, but was resumed during the summer.

Under the above-mentioned ordinance over one hundred houses have been connected with the sewer.

## ESSEX COUNTY—Continued.

Another subject which has commanded especial attention is the milk-supply of Montclair.

The regular inspection of dairies has been carried on as before, but it has been systematized somewhat by the introduction of a new dairy register as follows:

## DAIRY REGISTER.

Owner .....	Address .....	Date .....
Delivered by .....	Address .....	
STABLE—Location? .....		
Ventilation? .....	Dampness? .....	Drainage? .....
		Cleanliness? .....
Height of ceiling? .....	Floor space per cow? .....	Air space per cow? .....
	How often cleaned? .....	Water-supply? .....
		Purity? .....
	Air space under tie-up? .....	
CATTLE—Number .....		
	Breed .....	General state of health? .....
	Examined? .....	By whom? .....
		How often? .....
	When last examined? .....	Are cows cleaned off before milking? .....
	Any of herd ever been condemned? .....	When? .....
	What for? .....	
PASTURE—Character? .....		
Water? .....		
How long are cattle pastured each day? .....		
MANURE—How disposed of? .....		
Where kept temporarily? .....	How often removed? .....	
FOOD—What consists of? .....		
Brewers' grains? .....		
	Amount per day to each cow? .....	
UTENSILS—Pails, how washed? .....		
Sterilized with steam? .....	How dried? .....	Where dried? .....
Any device or cover used through which to milk? .....	Cans, how washed? .....	
	Sterilized with steam? .....	How dried? .....
	Where dried? .....	Bottles, how washed? .....
Sterilized with steam? .....	Where dried? .....	Bottles ever exchanged? .....
	What is done with them? .....	
COLLECTION OF MILK—Are milkers' hands washed before milking? .....		
Ever during milking? .....	Are the udders washed? .....	
When pail is full what is done with it? .....		
Where does can stand? .....	Covered? .....	
COOLING OF MILK—How long after milking is milk put into cooler? .....		
How cooled? .....	To what temperature? .....	Is milk bottled? .....
	How many quarts? .....	How long after being cooled is it bottled? .....

## ESSEX COUNTY—Continued.

STORAGE—How stored? .....	
How long before distributed? .....	
DISTRIBUTION—How many quarts are peddled in cans? .....	
Ever run short? .....	What is done in that case? .....
Is can always covered? .....	
HEALTH OF EMPLOYEES—How many persons handle the milk? .....	
Are all in good health? .....	When was the last contagious disease? .....
	What disease? .....
Remarks .....	

As to the condition of the dairies supplying Montclair, much could be said. Although there are objectionable features connected with nearly all, they are as a class satisfactory, and few towns are supplied with as pure a product, and fewer have dairies which are cared for as conscientiously. It is lack of means only that prevents many dairy-owners from making desired improvements, and those which do not entail too great an expenditure are always furnished when suggested. There are in Montclair twenty-five milk routes, the proprietors of which are supplied by milk from thirty-two dairies. In the majority of cases the dairies are owned and carried on by the proprietors of the routes. Several, however, buy their whole supply from another party.

Realizing that a regular inspection of dairies alone, however rigid it may be carried on, is, after all, a very incomplete method of supervision, it was decided that the milk from the several dairies should be analyzed periodically, and that bacteriological examinations should accompany each analysis. The results vary a great deal, yet there was only one sample taken which was below the standard established by the State of New Jersey. It was with the results of the bacteriological examinations that the greatest amount of dissatisfaction was found. Such results are an absolute indicator of the cleanliness and care with which the milk is produced. Wherever sterilized utensils were used for collection, cooling and bottling of milk, and stables and cows were carefully cleaned, the number of bacteria was found to be very low, but they were sure to be very numerous in the milk from dairies in which these precautions were neglected.

## ESSEX COUNTY—Continued.

A detailed report of the analyses is given in the accompanying table. For purposes of comparison, I will submit the standard of Dr. Veith, who gives, for eleven years, the average of 120,540 samples as follows:

Total solids.....	12.90 per cent.
Solids not fat.....	8.80 per cent.
Fat.....	4.10 per cent.

## CHEMICAL AND BACTERIOLOGICAL ANALYSES OF MILK FROM DAIRIES SUPPLYING MONTCLAIR.

*Geo. M. Canfield, Caldwell.*

Date, 1897.	Total solids.	Fats.	Solids not fat.	Bacteria per cu. cm.	Remarks.
January 27th.....	14.62	5.01	9.61	6,600	Bottled.
March 3d.....	14.29	4.85	9.44	557	Bottled.
March 18th.....	.....	.....	.....	532	Bottled.
April 22d.....	13.95	3.999	9.951	4,600	Bottled.
April 23d.....	14.04	4.036	10.007	5,100	Bottled.

*M. H. Canfield, Caldwell.*

January 20th.....	14.42	4.58	9.84	390,000	Bottom of can.
February 4th.....	.....	.....	.....	9,850	Bottled.
April 1st.....	13.5	3.65	9.89	7,600	Bottled.

*Frederick Feerst, West Orange.*

March 3d.....	13.07	4.09	8.88	431,900	Can.
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*Fairfield Dairy Co.*

January 4th.....	13.63	3.30	10.33	9,500	Bottled, ordinary.
February 19th.....	14.05	4.50	9.55	1,900	Bottled, certified.
March 16th.....	14.31	4.86	9.45	473	Bottled, certified.
March 20th.....	.....	.....	.....	521	Bottled, certified.
April 20th.....	14.09	4.43	9.66	728	Bottled, certified.

*E. N. Harrison, Montclair.*

February 3d.....	14.09	3.32	9.27	33,300	Bottled.
March 16th.....	13.63	3.09	9.94	35,100	Bottled.
April 6th.....	13.92	3.61	10.23	23,000	Bottled.

*W. H. Hamilton, Richville.*

February 1st.....	12.92	3.51	9.41	2,800	Bottled.
March 12th.....	13.04	3.70	9.34	4,290	Bottled.

## ESSEX COUNTY—Continued.

*C. W. Haight, Verona.*

Date, 1897.	Total Solids.	Fats.	Solids not fat.	Bacteria per cu. cm.	Remarks.
February 9th.....	14.94	4.36	10.43	72,600	Bottled.
March 15th.....	14.55	4.15	10.40	15,700	Bottled.
April 21st.....	13.85	4.49	9.36	1,937	Bottled.

*J. H. Harkey, Verona.*

April 21st.....	13.69	4.39	9.30	.....	Bacteria innumerable.
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*R. I. Jacobus, Great Notch.*

January 26th.....	14.23	5.08	9.15	6,100	Bottled.
March 9th.....	14.26	4.78	9.53	6,600	Bottled.
April 9th.....	14.21	4.21	10.00	1,389	Bottled.

*W. H. Jacobus, Caldwell.*

April.....	14.35	3.99	10.36	.....	Bottled.
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*F. P. Jacobus, Verona.*

February 12th.....	11.31	3.40	7.91	.....	Bottled.
February 2 st.....	13.18	3.12	10.06	.....	Bottled.
February 23d.....	14.38	3.74	10.64	.....	Bottled.

*Puritan Dairy, Franklin.*

January 19th.....	14.37	4.40	9.90	59,800	Settlings in bottle: hairs, manure, tobacco.
February 24th.....	14.32	4.10	10.22	20,500	Bottled.
March 30th.....	12.84	3.12	9.72	1,290	Bottled.

*J. H. Cadmus, Fairfield.*

February 5th.....	14.12	3.87	10.25	98,700	Bottled.
March 29th.....	14.92	4.93	9.94	7,700	Bottled.

*McLelland Bros., Roseland.*

January 16th.....	12.2	3.40	8.89	114,300	Can.
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*E. E. Taylor, Cedar Grove.*

January 8th.....	12.67	3.65	9.02	16,800	Bottled.
March 31st.....	13.52	3.92	9.60	16,100	Bottled.

*A. M. Speer, Caldwell.*

January 13th.....	12.70	3.74	8.96	48,000	Can.
March 1st.....	14.70	4.24	10.46	299,450	Can.
April 14th.....	13.30	3.47	9.83	178,000	Can.

## ESSEX COUNTY—Continued.

P. S. Van Reyper, Montclair Heights.

Date 1897.	Total Solids.	Fats.	Solids not fat.	Bacteria per cu. cm.	Remarks.
March 1st.....	14.75	4.81	9.94	9,800	

C. O. Van Iderstine, Caldwell.

January 26th.....	14.32	5.01	9.31	72,600	Bottled.
March 24th.....	14.89	5.08	9.81	59,400	Bottled.

E. O. Wetlyn, Cedar Grove.

January 11th.....	14.02	4.55	9.47	36,750	Can.
February 19th....	14.21	3.88	10.33	72,600	Can.
March 1st.....	14.70	4.24	10.46	299,450	Can.
April 15th.....	14.94	4.48	10.46	7,800	Bottled.

Average number of bacteria found per cu. cm. of bottled milk.....	24,817
Average number of bacteria found per cu. cm. of milk in cans.....	208,875

Inspection of the above shows very clearly the advantages which bottled milk possesses over that which is peddled from cans. The large majority of dairymen combine the former with the latter method. It is to be hoped that during the ensuing year many more will be persuaded to discontinue the can delivery entirely.

The work relating to the inspection of plumbing has increased largely during the past year by reason of a large advance in the number of plumbing applications.

The smoke test has been adopted as the official test upon all finished work.

Early in the spring of 1897 an investigation was made into the condition and source of our ice-supply. It was found that there were four principal supply points, namely, Greenwood Lake, Pocono Mountain, the Orange Distilled Water Ice Company and the Bloomfield Artificial Ice Company. The product from these four places was analyzed and found to be of excellent quality, both from a chemical and a biological standpoint. Permits were given to the several dealers to distribute this ice within the town limits.

During the summer, however, it was found that a local dealer was selling ice taken from Waterloo, N. J., and upon analysis this ice was found to contain vegetable matter and was found to be high in albuminoid ammonia, also in chlorine. This ice was immediately excluded by special resolution of the board.

## ESSEX COUNTY—Continued.

Kerosene and gasolene are not inspected by this board.

Suits at law for the enforcement of our ordinances have been numerous. The following report of the attorney will explain the most important of these:

## REPORT OF THE ATTORNEY.

MONTCLAIR, N. J., May 29th, 1897.

Board of Health of the Town of Montclair:

GENTLEMEN—I take pleasure in presenting the following summary of the proceedings taken by me as counsel to your board during the year terminating June 1st, 1897.

Proceedings have been taken and conviction had in fifteen cases, as follows: For overcrowding, 10; using garbage for filling lot, 1; failure to connect with sewer on notice, 1; failure of plumbers to file plans for plumbing, 2; causing offensive odors by using furnace in open air, 1.

One of the convictions for failure to file plans was taken before the Supreme Court on a writ of *certiorari*, and after careful investigation of the points raised, I deemed it advisable, after consulting with several members of your board, to allow judgment to pass against the board of health on the *certiorari* without argument. The question of the constitutionality of the act establishing your board was raised in the reasons filed with the writ, but so many technical points which had no bearing, except in this particular case, were also raised, that it seemed hopeless to expect that this question of the constitutionality of the act would be reached or passed upon by the court. I feel confident that the revised plumbing ordinance will avoid all such technical questions in any future case.

I am informed by your inspector that the person convicted for failure to connect his houses with the sewer is now making the necessary connections. One unexplained case of failure to connect has been brought to my attention, but no proceedings have as yet been commenced.

Acting under my advice, your inspector has forcibly entered upon the premises of Mr. Henry Lehrmann, Jr., and closed a well believed to be dangerous to health. For this act your board has been sued in trespass, and an issue of law has been raised by filing a demurrer to the declaration. This question is still pending and undetermined.

I have also collected for your board a bill against James H. Banks, for expenses incurred in cleaning his cesspool.

Very respectfully,

EDWIN B. GOODELL.

The following is a tabulated report of the chemist and bacteriologist of the board, Mr. D. H. Baldwin:

## ESSEX COUNTY—Continued.

Month. 1896.	Water and Ice Analysis.	Bacteriological Examinations.					
		Diphtheria.		Typhoid.		Tuberculosis.	
		Sus- pected.	True.	Sus- pected.	True.	Sus- pected.	True.
June .....	4	9	3	...	...	3	2
July .....	4	...	...	...	...	3	...
August .....	7	...	...	...	...	1	...
September .....	...	...	...	...	...	...	...
October .....	3	5	2	...	...	2	1
November .....	...	7	4	...	...	3	3
December .....	1	5	...	...	...	2	1
1897.							
January .....	2	9	5	...	...	4	1
February .....	2	3	1	...	...	3	2
March .....	...	3	...	4	2	...	...
April .....	3	...	...	...	...	7	5
May .....	1	6	1	...	...	3	2
Totals .....	27	47	16	4	2	31	17

The important subject of garbage disposal has received considerable attention during the past year. An attempt was made by the board of health in conjunction with the Town Improvement Association to procure a special appropriation for this purpose. The effort failed, however, and the proposal was not put upon the official ballot. Inasmuch as the result was due to the failure on the part of the promoters to sufficiently urge the matter, we have reason to believe that a more successful canvass will be made next spring.

The present method of disposal by burial upon land rented by the board works fairly well, and is far more satisfactory than allowing it to be used for the production of "swill pork."

During the past year a new plumbing ordinance was adopted. In many respects it was a direct departure from the old one, and we have found gives much better satisfaction both to the plumber and to the property-owner, besides more nearly approaching true sanitary requirements.

An ordinance prohibiting the keeping of hogs within certain limits, and another prohibiting the sale of milk from cattle fed upon brewers' grains, are in process of construction.

## ESSEX COUNTY—Continued.

Scarlet fever has not, in recent years, been a very prevalent disease in Montclair. The few cases occurring here and there have rarely been of sufficient importance to attract public attention or cause comment, and the mortality has, as in many other places, decreased, even though the town has grown rapidly. It may be well to mention that the large majority of cases reported have been among a poorer class of people, who have not been able to surround themselves with the best sanitary necessities, and have labored under disadvantages which have not been a help in warding off disease.

On May 4th, 1897, began an epidemic of scarlet fever, which was confined entirely to the better class of houses and to conditions which were apparently the opposite of those mentioned above. Further than that, it was confined in nearly every case to the small children of the families, and generally the least robust of them all. The first three cases were reported Tuesday, May 4th, and these were followed on Wednesday by three more; and, finally, by May 20th, twenty cases had been reported, and from these there developed later seven secondary cases.

It was ascertained as fast as the patients fell ill that there was nothing in common among the afflicted families except the milk-supply. There was no general supply of ice cream, groceries, meats, fish, bread or any of the other necessities which are capable of spreading the disease, nor did society, religious worship or schools make any common relation among the families. The milk-supply alone remained, and to this our attention was immediately turned.

The source of the milk was a neighboring dairy, which had always borne a most excellent reputation. Its method of producing milk was one of the most approved, and it seemed to be the one effort of its proprietors to supply to the public the purest possible product.

The first subject of investigation was that of the men employed at the dairy, who number about thirty. A word as to their condition and mode of life may be pertinent. The entire force consisted of young Poles and Hungarians, who had come from their native land to work at this dairy. Few spoke English, and as their principal idea was to grow wealthy and return, they were rarely away from home, so that there was a very small chance of their bringing infec-

## ESSEX COUNTY—Continued.

tion from the outside into the quarters. They lived upon the dairy farm, and were under the strictest sanitary rules. They were attended regularly by one physician, who kept a record of each man, and was familiar with each one's condition. In short, it seemed well-nigh impossible for any contagious disease to creep in unobserved. This physician was summoned at once upon the arrival of the inspector, and made a careful examination of every man connected with the dairy, but neither this nor the record showed any indication of an approach to scarlet fever. To make assurance doubly sure, the two physicians connected with the board of health visited the dairy, and each made as minute an examination as the previous one, with like results. Considering the conditions under which these employes lived, and the fact that they had passed three examinations, it was thought wise to give our attention to other lines.

Careful inquiry was made concerning the sterilization of bottles and collecting utensils. We were confident that a thorough system of steam sterilizing was constantly employed. It was ascertained, however, that on Friday evening, April 31st, the position of the boiler had been changed to accommodate improvements, and they had been unable to sterilize the bottles as usual, but had substituted hot water and caustic soda solution. Here was a loophole through which some light might be thrown upon the subject. If there had been a set of bottles taken from some infected house and put into the general stock on that evening it would be quite likely that the contagion would spread in this manner. Investigation failed to show that there had been any such mixing of bottles. The greatest care had been exercised to keep the infected bottles from the stock, and they were always collected in a special wagon and boiled in a small building at some distance from the milk-house.

The next investigation was centered upon the cattle themselves. In spite of the discredit thrown upon the theory of Klein that scarlet fever may be produced by a vesicular affection of the udder, it was felt that no source of possible infection should be neglected. Accordingly, W. Runge, D.V.S., veterinarian for the Newark board of health, was called, and he made a thorough examination of the cattle, but found nothing suspicious.

## ESSEX COUNTY—Continued.

Finally the names of the men who had been at work on the alterations in the milk-house were ascertained, and their surroundings investigated. There was not one who was in any way related to a case of scarlet fever, and each stoutly maintained that he had at no time been exposed to any such disease.

Coincident with the above investigations, frequent inquiries were made in the municipalities of Orange, Newark, Paterson, Bloomfield and Glen Ridge where the milk from this same dairy was delivered in large quantities. It was found that little or none of the scarlet fever there reported was on the route of this dairy, and that it had always been particularly fortunate in this respect. This fact served to narrow our field of investigation. If the general supply of the dairy were infected it followed that the same result would be observed in each town supplied with its milk. The employes, cows, and general surroundings of the dairy were barren fields of investigation under such circumstances, and infected bottles could be concerned only under the most unlikely supposition that all such were delivered in Montclair.

We could, therefore, feel certain that if the milk were the cause, the trouble must be with the local delivery, and as the milk was received here in sealed bottles and was not exposed until opened by customers, it was difficult to see how it could be infected after leaving the dairy. Nevertheless a thorough inspection was made at the delivery station, and the employes were examined, but without any results.

In the midst of this negative evidence there came an interesting piece of information. It was ascertained that, on May 1st, the managers of the dairy had purchased 200 quarts of milk from a wholesaler, all of which was delivered in Montclair. All then seemed clear; we had but to find a case of the disease among the dairies supplying this wholesaler, and the chain of circumstantial evidence would be almost complete. A thorough search, covering two days, was made in this direction, but nowhere was there a single instance of the disease. More than this, 3,000 quarts of milk per day are delivered by this wholesaler in the city of Newark, and the board of health there reported only one case during April and May which was supplied with this milk.



## ESSEX COUNTY—Continued.

Although the above evidence is sorely defective, yet all strongly points to the milk as the carrier of the scarlet fever. Twenty cases reported in sixteen days and all on the same milk route can hardly be called a coincidence. It is true that it is the largest route in Montclair, yet its milk supplies only about 1,200 people, and about 10,800 remain who are as much in danger and as likely to become infected with divers infectious diseases as the 1,200. Another point—the patients were children who were accustomed, with few exceptions, to use milk largely as a food.

When we come to consider which supply, inferences are not so easily drawn. As has already been observed, it is quite unlikely that the general supply was infected, as Montclair was the only town out of six or seven which had any trouble of this kind. The suggestion has been made that the disease germs may have died in transit, and that Montclair, being the nearest point, received its supply before this happy event took place. The difference in time of delivery is not sufficient for such a uniform result, however, and we are also aware that disease germs do not die so easily in so good a culture medium as milk.

The bottle infection idea is one which has been advanced by many, yet to those who are familiar with the system of handling bottles at the dairy, it is plain that it would be nothing short of miraculous if a set of bottles so infected should all be delivered in Montclair. They are so thoroughly mixed in the washing that they become separated.

From certain points of view matters point strongly toward the purchased milk as the carrier. Although no case of the disease could be found in any of the dairies supplying this wholesaler, it is a well-known fact that the services of a physician are rarely required upon a farm, and almost all sickness is treated with "home remedies." Under such circumstances it would be entirely possible for one of the family to have a light case of scarlet fever which would go unrecognized and would be nursed as any other farm sickness. This member might assist at a milking during the period of desquamation and thereby infect a can of milk, which, perchance, might be among those purchased on May 1st. There are numerous other theories and speculations which might throw this milk in question, but we are always met by the fact that elsewhere its record is exceptionally good.

## ESSEX COUNTY—Continued.

So the matter stands, and we are able to go no further. After investigating every phase of the question we are obliged to say that we believe the milk-supply was the cause, yet the manner in which the infection came about has not been discovered.

## CITY OF NEWARK.

MEMBERS AND OFFICERS—H. C. H. Herold, M.D., President; M. Straus, A. H. Johnson, J. A. Furman, W. B. Guild, C. E. Mackey, C. M. Zeh, M.D., D. L. Wallace, M.D., F. W. Becker, M.D., W. S. Disbrow, M.D.; H. Boggs, Attorney; David D. Chandler, Health Officer.

EMPLOYEES OF THE BOARD OF HEALTH—Frank J. Connelly, M.D., Superintendent Bureau of Contagious Diseases; Samuel Knott, Chief of Disinfection Corps; John J. Greene, Eugene W. Bellar, Clerks; Marie Perier, Stenographer; Herbert B. Baldwin, Chemist; Werner Runge, Charles Wolz, Meat Inspectors; John B. Sullivan, William H. Grier, Henry W. Schroeder, Plumbing Inspectors; William H. Lyle, Milk Inspector; Thomas E. Freeman, Louis H. Bridgem, William H. Young, Andrew J. Brady, \*John Wright, Thomas F. Newton, Morris Seidl, \*John L. Ball, Forman J. Reynolds; \*Daniel Studer, Austin Moran, Otto Schalk, Charles H. Burke, \*William A. Parker, Antonio Panzora, Sanitary Inspectors; George C. Sonn, Meteorologist; J. C. Houston, M.D., Assistant Bacteriologist; Herman Volk, Culture Collector; William A. Smith, Apothecary; John J. Jacobus, Assistant Apothecary; William M. Gould, Dentist.

Population, census 1895, 215,806; area, 13,462 acres; total number of births, 4,754; deaths, 4,496; deaths under one year, 1,353; stillbirths, 305. The number of cases of communicable diseases reported to the board during the year ending June 30th, 1897, was as follows: Diphtheria, 1,120 cases, 108 deaths; membranous croup, 80 cases, 56 deaths; scarlet fever, 1,207 cases, 41 deaths; typhoid fever, 112 cases, 40 deaths. Seven cases of typhoid fever were traced to the use of polluted well water; the cases of diphtheria which occurred at No. 55 South street were traced to the accumulations in the water-closet apartment, which upon bacteriological examination showed that the diphtheria bacilli were present. An increase in the number of communicable diseases has been observed during the period when the schools are open. Twenty-four meetings were held by the board. The sale of ice is controlled by the board. Very many suits have been instituted by the board, but no question of general interest has been raised.

\* Detailed on Disinfecting Corps.

## ESSEX COUNTY—Continued.

## MILK INSPECTOR'S REPORT.

Number of wagons halted.....	1,209
" " cans of milk inspected.....	2,147
" " lactometer tests.....	863
" " stores visited.....	1,197
" " cans of milk inspected.....	1,150
" " lactometer tests.....	592
Samples found suspicious and delivered to the chemist.....	149
Number of stables inspected.....	247
" " animal permits issued.....	406
" " animals licensed.....	1,357

## BACTERIOLOGICAL LABORATORY.

The laboratory is situated in the City Hospital building, where it was established in March, 1895, and has been equipped by the direction of the board with all the necessary apparatus for the manufacture of antitoxin, and also to serve as a diagnostic station for such diseases as diphtheria, tuberculosis, typhoid and cholera.

The antitoxin produced by the board is distributed free of charge to physicians for the treatment of cases of diphtheria occurring in Newark, and the extent to which the remedy has been employed is shown by the fact that upwards of two-thirds of all the cases of true diphtheria which occurred in the city during the year were treated with the serum.

The following is a summary of the work performed at the bacteriological laboratory of the board of health during the year ending December 31st, 1896:

There have been prepared at the laboratory during the year 1,502 bottles, and it has been used in the treatment of 905 different cases of diphtheria, with the result given in the following table, which compares the antitoxin-treated cases with those not so treated, and also the reports for the years 1895 and 1896.

## ANTITOXIN USED.

	Cases.	Recoveries.	Deaths.	Mortality.
1895.....	384	332	52	13 per cent.
1896.....	905	799	106	11 "

## ANTITOXIN NOT USED.

	Cases.	Recoveries.	Deaths.	Mortality.
1895.....	937	716	221	23 per cent.
1896.....	468	356	112	21 "

## ESSEX COUNTY—Continued.

This would indicate that not only has the relative or percentage mortality been lessened, but that the actual number of deaths has diminished, though more cases of the disease were reported in 1896 than in 1895.

The total number of cultures from suspected cases of diphtheria examined during the year was 3,557, of which 1,871 were from primary cases. In 1,124 of the latter the germs of diphtheria were found, and they were regarded as true cases.

The examination of specimens from suspected consumptive patients is also a part of the routine work, and during the year 415 such specimens were received, in 190 of which the germs of this disease were found.

Specimens of milk, water and blood are examined for the purpose of demonstrating the presence of typhoid fever or the germs of the disease, and the city water-supply is systematically examined at least once during each month.

## PLUMBING DEPARTMENT.

Permits issued to construct plumbing systems.....	1,522
Number of plans and specifications filed.....	1,229
Plans rejected.....	185
Number of water tests.....	3,185
" " plumbing inspections.....	1,201
" " final plumbing inspections.....	1,123
" " cesspool permits.....	134
" " privy vault permits.....	33
" " manure pit permits.....	2
" " main drain permits.....	33

## SLAUGHTER-HOUSE INSPECTIONS.

Number of cattle inspected.....	11,020
" " calves inspected.....	15,366
" " sheep and lambs.....	14,479
" " swine.....	5,074

## CONDEMNED.

Number of cattle.....	8
" " calves.....	18
" " sheep.....	2
" " horses (on account of glanders).....	17

## ESSEX COUNTY—Continued.

## INSPECTIONS OF BUTCHER-SHOPS.

Number of visits.....	10,467
“ “ carcasses of beef inspected.....	32,893
“ “ lambs and sheep.....	97,559
“ “ calves.....	14,667
“ “ swine.....	14,497

## CONDEMNATIONS OF UNWHOLESOME FOODS.

Bob veal, carcasses.....	24½
“ “ quarters.....	15
Beef, pounds.....	60
Lamb, “.....	50
Mutton, carcasses.....	2
Shoulders of pork, pounds.....	1,001
Pork, “.....	6
Fish, “.....	425
Chickens, “.....	400
Turkeys, “.....	220
Hams.....	11
Boxes of hams.....	1
“ “ chickens.....	2
Barrels chickens.....	6
“ fish.....	6
“ spinach.....	2
Number of geese.....	2
“ “ ducks.....	1
Barrels of apples.....	1
Crates of peaches.....	6
Baskets of plums.....	2
Barrels of meat.....	2
Number of complaints attended to.....	13

## SANITARY INSPECTIONS DURING THE YEAR 1886.

Number of citizens' complaints.....	2,377
“ “ “ “ verified.....	1,975
“ “ “ “ no cause.....	399
“ “ original inspections made.....	11,207
Total number of inspections made.....	13,584
Number of written notices served.....	3,196
Total number of abatements from same.....	2,454
Number of verbal notices given.....	2,305
Total number of abatements from same.....	1,453
Number of hours in court.....	231

## ESSEX COUNTY—Continued.

## DETAILED REPORT.

Wells inspected.....	82
“ “ closed.....	61
Sewer connections ordered.....	517
“ “ drains inspected.....	1,311
Cesspools inspected.....	371
Alleys inspected.....	413
“ “ filthy.....	84
“ “ need repairing.....	37
Streets uncleanly.....	128
Areas “.....	177
Cellars “.....	513
Ashes accumulation.....	297
Garbage “.....	270
Drainage surface.....	91
Lots filthy.....	110
“ “ stagnant water.....	75
Manure accumulation.....	341
Defective water pipes.....	137
Houses filthy.....	57
“ “ unfit for habitation.....	8
Slaughter-houses.....	21
Houses unprovided with privy vaults or water-closets.....	18
“ “ with no water-supply.....	81
“ “ roofs leaking.....	27
“ “ defective hydrants.....	58
Privy-houses filthy.....	414
Privy vaults full.....	1,293
Cesspools full.....	258
Privy-houses dilapidated.....	26
“ “ vaults ordered reconstructed.....	11
“ “ “ “ out.....	2,580
Yards inspected.....	12,839
“ “ filthy.....	886
Plumbing defective.....	723
Water-closets defective.....	387
Stables inspected.....	873
Total number of re-inspections.....	5,408
“ “ “ “ nuisances found.....	8,572
Number of houses disinfected where cases of scarlet fever and diphtheria occurred.....	1,959
Number of houses disinfected where phthisis occurred.....	394
Total number of disinfections.....	2,353
Permits issued for cleaning privy vaults.....	1,680
“ “ “ “ cesspools.....	170
Total number of permits issued.....	1,860

## ESSEX COUNTY—Continued.

## NEWARK CITY DISPENSARY AND THE OUTDOOR POOR DEPARTMENT.

Medical cases.....	6,070
Surgical.....	1,753
Diseases of skin.....	1,198
“ “ children.....	1,359
“ “ women.....	738
“ “ genito urinary organs.....	766
Number of teeth extracted.....	916
“ “ vaccinations.....	5,364
“ “ new cases treated at city dispensary.....	18,182
“ “ prescriptions by clinic.....	14,418

## Number of Prescriptions Prescribed by District Physicians.

First District.....	635
Second “.....	1,223
Third “.....	596
Fourth “.....	872
Fifth “.....	1,316
Sixth “.....	542
Seventh “.....	458
Eighth “.....	725
Ninth “.....	978
Tenth “.....	1,177
Eleventh “.....	509
Total.....	9,031
Total number of prescriptions.....	23,449

## SUMMARY OF SERVICES RENDERED BY THE DISTRICT PHYSICIANS.

	Actual No. houses visited.	Actual No. families visited.	Cases.	Visits.	Sent to hospital.	Deaths.
First District.....	195	206	241	402	15	5
Second “.....	278	379	440	714	30	20
Third “.....	254	246	302	854	14	6
Fourth “.....	316	356	458	611	18	2
Fifth “.....	375	447	505	1,033	23	3
Sixth “.....	239	246	321	767	17	8
Seventh “.....	185	199	238	363	15	9
Eighth “.....	165	295	250	411	7	8
Ninth “.....	227	250	284	438	2	3
Tenth “.....	182	439	281	509	10	2
Eleventh “.....	255	312	191	774	9	2
Total.....	2,671	3,378	3,514	6,884	160	68

## ESSEX COUNTY—Continued.

## CITY OF ORANGE.

MEMBERS AND OFFICERS—John T. Platt, President; Augustus Eichhorn, G. H. Richards, M.D., John Burke, J. P. Hannagan, J. H. Brown, S. Collins; William Schleur, Secretary; T. F. Phelan, M.D., Inspector; T. A. Davis, Attorney.

Population, census 1895, 22,792; area, 1,372 acres; number of births reported, 543; number of deaths reported, 402; number of deaths under one year, 86. Contagious diseases were reported as follows: Diphtheria, 81 cases, 14 deaths; membranous croup, 1 case, 1 death; scarlet fever, 254 cases, 2 deaths; typhoid fever, 10 cases and 2 deaths. Fourteen meetings were held. Four hundred and seventy-six nuisances were reported, in nearly all of which improvement was secured. Regular house-to-house inspection is made and the records are placed on file. Disinfection of houses is accomplished by the use of formaldehyde gas, generated by the use of Robinson lamps. Several suits have been brought by the board, all of which were successful except one, which is still before the court.

## SOUTH ORANGE TOWNSHIP.

MEMBERS AND OFFICERS—Matthew W. Hogan, President, South Orange; W. J. N. Carter, South Orange; John Walker, South Orange; Samuel E. Tillou, South Orange; Byron R. Bacon, South Orange; Thomas C. Baker, Maplewood; W. W. Heberton, M.D., South Orange; Joseph H. Osborne, Assessor and Secretary, Hilton.

Population, census 1895, 5,108; area, 5,329 acres; number of births reported, 128; number of deaths reported, 79; number of deaths under one year, 13. One case of diphtheria, 12 cases of scarlet fever, with 1 death, and 1 case of typhoid fever were reported. Six meetings of the board were held. A few complaints were received and four nuisances were abated.

## VILLAGE OF SOUTH ORANGE.

MEMBERS AND OFFICERS—Mefford Runyon, M.D., President; H. A. Pulsford, M.D., H. H. Hart, John Williams, H. B. Gates; Richard D. Freeman, M.D., Secretary; W. W. Heberton, M.D., Inspector.

## ESSEX COUNTY—Continued.

Population, census 1895, 3,778; area, 1,575 acres. Owing to the inaccuracies of the record no report is made by the board of the number of communicable diseases which occurred. Twelve regular and eight special meetings were held. A system of sewerage to tide-water is contemplated and is about to be constructed. Two deaths from railroad injuries occurred during the year. One case of typhoid fever was traced to a polluted well. A regular house-to-house inspection has recently been established and records are made and filed. The board is contemplating the systematic inspection of dairies.

## BOROUGH OF VAILSBURG.

MEMBERS AND OFFICERS—A. Maybaum, President; Henry Aschenbach, John V. Diefenthaler, James Hampton, Francis I. Knowles, M.D.; Charles H. Bakestraw, Secretary; Andrew Lentz, Inspector; Riker & Riker, Attorneys, Newark.

Population, census 1895, 1,563. Two cases of diphtheria and eleven cases of scarlet fever were reported. Eleven meetings were held. Twenty-seven complaints were received and twenty-two nuisances were abated.

## VERONA TOWNSHIP.

MEMBERS AND OFFICERS—Charles S. Simonson, President, Verona; Charles A. Williams, Verona; Fillmore Condit, Verona; J. E. De Camp, Verona; Charles H. Jacobus, Cedar Grove; H. B. Whitehorne, M.D., Secretary, Verona; William L. Scott, Assessor, Verona.

Population, census 1895, 1,631; area, 4,710 acres; number of births reported, 14; number of deaths reported, 17; number of deaths under one year, 4. Eleven cases of scarlet fever and six cases of typhoid fever were reported; no deaths from these diseases. Four meetings were held by the board.

## ESSEX COUNTY—Continued.

## WEST ORANGE TOWNSHIP.

MEMBERS AND OFFICERS—John Otterbein, President, West Orange; Carl Fentzlar, Montclair; Thomas Cunningham, West Orange; Cornelius N. Sexton, West Orange; Anthony Kling, West Orange; Frank O'Connor, Secretary, West Orange; William M. Brien, M.D., Inspector, Orange Valley; Colonel E. L. Price, Attorney.

Population, census 1895, 5,854; area, 7,728 acres; number of births reported, 91; number of deaths reported, 58; number of deaths under one year, 11. Four cases of diphtheria, with two deaths; fifty-seven cases of scarlet fever and two cases of typhoid fever were reported. Monthly meetings are held by the board. One suit was brought during the year, resulting in the abatement of a nuisance and the payment of costs by the party prosecuted.

## GLOUCESTER COUNTY.

## BOROUGH OF CLAYTON.

MEMBERS AND OFFICERS—D. W. Moore, Jr., President; A. G. Silver, H. G. Buckingham, M.D.

Population, census 1895, 2,130; area, 5,223 acres; number of births reported, 36; number of deaths reported, 30; number of deaths under one year, 12. Five meetings were held. Three nuisances were reported and abated.

## DEPTFORD TOWNSHIP.

MEMBERS AND OFFICERS—A. W. Muller, President, Almonesson; Joseph Noblit, Wenonah; B. F. Haines, Westville; H. A. Stout, M.D., Wenonah; William C. Cattell, Assessor and Secretary, Wenonah.

Population, census 1895, 1,883; area, 13,032 acres; number of births reported, 41; number of deaths reported, 36; number of deaths under one year, 11.

GLOUCESTER COUNTY—*Continued.*

## EAST GREENWICH TOWNSHIP.

MEMBERS AND OFFICERS—Charles Dorrman, President, Mickleton; E. H. Howey, Clarksboro; John Rambo, Paulsboro; Walter Heritage, Assessor and Secretary, Mickleton.

Population, census 1895, 1,363; area, 9,082 acres; number of births reported, 25; number of deaths reported, 6. Two cases of typhoid fever, attended by one death, occurred. Two meetings were held by the board.

## FRANKLIN TOWNSHIP.

MEMBERS AND OFFICERS—L. M. Halsey, M.D., President, Monroe; W. S. Richman, Assessor, Malaga; T. E. Parker, M.D., Secretary, Woodbury.

Population, census 1895, 2,256; area, 38,429 acres; number of births, 37; number of deaths, 28; number of deaths under one year, 5. No reports of contagious diseases were received.

## GLASSBORO TOWNSHIP.

MEMBERS AND OFFICERS—Thomas C. Allen, President, Glassboro; Henry Rowan, Sr., Glassboro; Ira Izard, Glassboro; Charles S. Heritage, M.D., Secretary, Glassboro; David Paulin, Assessor, Glassboro; Edward Munyon, Inspector, Glassboro; John S. Jessup, Attorney, Woodbury.

Population, census 1895, 2,265; area, 4,698 acres; total number of births during year ending June 30th, 1897, 55; deaths, 38; deaths under one year, 11. The following infectious diseases occurred in the township: Diphtheria, 1; scarlet fever, 3, 1 death; typhoid fever, 1. These outbreaks were confined to the dwellings in which they first appeared. The case of typhoid fever was believed to have been contracted in Camden. Contagious diseases are not reported very promptly by physicians. One death occurred from drowning. One hundred and eighteen nuisances were reported to the board during the year and abatement was secured in all of these cases.

GLOUCESTER COUNTY—*Continued.*

## GREENWICH TOWNSHIP.

MEMBERS AND OFFICERS—William H. Duncan, President, Gibbetown; James J. Cowgill, Paulsboro; D. R. Ackley, Paulsboro; George B. Laws, M.D., Paulsboro; Jacob Ballinger, Assessor and Secretary, Paulsboro; Joseph Summerill, Attorney, Woodbury.

Population, census 1895, 2,157; area, 9,574 acres; number of births reported, 46; number of deaths reported, 26; number of deaths under one year, 9. Physicians do not report communicable diseases in this district, the board of health having made no effort to execute the law. When cases of infectious diseases occur the attending physician is depended upon by the board to secure such protection for the public as may be required. The board held two meetings.

## HARRISON TOWNSHIP.

MEMBERS AND OFFICERS—W. W. Justice, President, Richwood; Ira Coles, Mullica Hill; Samuel Stratton, Ewan; S. F. Ashcraft, M.D., Mullica Hill; Eli Heritage, Assessor and Secretary, Richwood.

Area, 10,601 acres; number of births reported, 15; number of deaths reported, 17; deaths under one year, 2. The board has held two meetings during the year, but transacted no business.

## LOGAN TOWNSHIP.

MEMBERS AND OFFICERS—Hance Helmes, President, Repaupo; Smith Shoemaker, Bridgeport; Hugh McGlincy, Bridgeport; Samuel B. Platt, Assessor and Secretary, Bridgeport; S. H. Richards, Attorney.

Population, census 1895, 1,526; area, 10,863 acres; number of births reported, 26; number of deaths reported, 26; number of deaths under one year, 4. The inspectorship of the board is vacant. The board held three meetings during the year.

GLOUCESTER COUNTY—*Continued.*

## MANTUA TOWNSHIP.

MEMBERS AND OFFICERS—James Lodge, President, Pitman; Elmer L. Sharp, Barnsboro; B. A. Carson, Mantua; E. C. Hillegrass, M.D., Mantua; George B. Hurff, Assessor and Secretary, Sewell.

Population, census 1895, 2,012; area, 12,076 acres; number of births reported, 35; number of deaths reported, 23; number of deaths under one year, 3. One case of scarlet fever was reported. One meeting was held by the board.

## MONROE TOWNSHIP.

MEMBERS AND OFFICERS—J. J. Eldridge, President; William F. Tweed, James M. Tweed, L. M. Halsey, M.D.; Clayton B. Tice, Assessor and Secretary. All of Williamstown.

Population, census 1895, 2,542; area, 29,335 acres: number of births reported, 14; deaths reported, 30; deaths under one year, 9. The following cases of communicable diseases were reported: Diphtheria, 4; membranous croup, 1 fatal case; scarlet fever, 8, and typhoid fever 5. The board has discovered that reports of these diseases are not regularly made by physicians practicing in the district. Four meetings were held during the year. Four complaints were received, and in each case improvement was secured.

## SOUTH HARRISON TOWNSHIP.

MEMBERS AND OFFICERS—Charles Homer, President; Alfred Lippincott, Sr., George Conover; D. C. Lippincott, Assessor; Samuel F. Stanger, M.D., Secretary. All of Harrisonville.

Population, census 1895, 704; area, 10,760 acres; number of births reported, 17; number of deaths reported, 11; number of deaths under one year, 1. One meeting was held by the board.

GLOUCESTER COUNTY—*Continued.*

## WASHINGTON TOWNSHIP.

MEMBERS AND OFFICERS—Albert Williams, President, Turnerville; George Rowan, Cross Keys; Frank Garrison; Charles D. Nicholson, Assessor and Secretary, Turnerville; C. B. Phillips, M.D., Inspector, Hurville.

Population, census of 1895, 1,235; area, 14,428 acres; number of births, 26; number of deaths, 17; number of deaths under one year, 3. No local record is kept of vital statistics. Two cases of typhoid fever occurred during the year, but no death resulted. Reports of communicable diseases are received promptly from physicians dwelling in the township, but physicians residing outside of the township limits, and who attend patients within the township, do not report at all.

During the year only one meeting was held by the board. A number of nuisances were reported, all of which were abated. The board believes that a polluted water-supply exists in a number of places on private premises in the township, but no steps have yet been taken to fill up the contaminated wells.

## BOROUGH OF WENONAH.

MEMBERS AND OFFICERS—Andrew W. Carey, President; Edgar Smith, Henry G. Gaithen, Eldiras Huoff, Thomas W. Synott, William A. Dawson, H. G. Stout, M.D.; Jesse W. English, Secretary; Richard Ballinger, Inspector; David O. Watkins, Attorney.

Population, census 1895, 473; area, 318 acres; number of births reported, 11; number of deaths reported, 2. Six cases of typhoid fever were reported. One of these cases proved fatal. The board held one meeting.

## WEST DEPTFORD TOWNSHIP.

MEMBERS AND OFFICERS—JOS. A. MOORE, President, Woodbury; R. M. Plum, Woodbury; JOE. LOW, Thorofare; JOS. HUNTER, M.D., Westville; MARK CLEMENT, Assessor and Secretary, Woodbury.

## GLOUCESTER COUNTY—Continued.

Population, census 1895, 1,717; area, 12,910 acres; number of births reported, 20; number of deaths reported, 17; number of deaths under one year, 3. Several cases of typhoid fever and also a few cases of scarlet fever have occurred. Complaints have been received in regard to the condition of the lake at Washington Park, but no action has been taken.

## CITY OF WOODBURY.

MEMBERS AND OFFICERS—Warner Underwood, President; Wm. M. Carter, Charles Walton, Arthur L. Terry, T. E. Parker, M.D., William C. Williams, M.D.; Arthur Starr, Secretary; Joshua Dawson, Inspector; Lewis Starr, Attorney.

Population, census 1895, 3,853; area, 1,080 acres; number of births reported, 78; number of deaths reported, 61; number of deaths under one year, 7. Communicable diseases were reported as follows: Diphtheria, 9 cases, 1 death; scarlet fever, 10 cases; typhoid fever, 8 cases. Seventeen meetings were held by the board. Twelve nuisances were reported, and abatement was secured in each instance. Rules and regulations for the government of the board were adopted August 16th, 1897.

A movement was started in Woodbury, in April 1897, for the organization of a County Health-Authorities Association. Several meetings were held, and much interest has been shown in the organization by the various sanitary districts in the county. The following correspondence shows the progress which has been made:

WOODBURY, N. J., April 21st, 1897.

Henry Mitchell, M.D., Secretary New Jersey State Board of Health:

DEAR DOCTOR—The board of health of Woodbury, at my suggestion, has considered it advisable to call together the several health boards of Gloucester county to perfect county organization, believing that such a body can further the work of good sanitation in unison better than each working independently. We thought that perhaps at least once a year we can call upon our higher officials or others who have made a study of sanitation to address a public meeting at some central place, thus getting in touch with the people and awakening them to the importance of this work. What do you think of such a proposition? Can you second the work and give us encouragement by advising the proper procedure to pursue? Who can we call upon to address us, and when can we arrange for such a meeting and what would be the expense connected with procuring speakers? We are in earnest and believe great good can be done. Has any other county in New Jersey such a body?

Yours truly,

T. E. PARKER.

## GLOUCESTER COUNTY—Continued.

OFFICE STATE BOARD OF HEALTH,  
TRENTON, N. J., April 24th, 1897.

1. E. Parker, M.D., Woodbury, N. J.:

MY DEAR DOCTOR—The proposition contained in your letter of April 21st is one of the most encouraging which has recently come to my attention, and I assure you that your effort to interest other sanitary authorities and the public also, in your county, will be sustained by this board in every way in its power.

Such an organization as the one you have in mind has been very successfully conducted in several of the states, but thus far no such movement has been undertaken in New Jersey. \* \* \*

Very truly yours,

HENRY MITCHELL,  
Secretary.

Under date of September 1st, 1897, Dr. Parker writes as follows: "A meeting of our organization was held Monday, August 30th. Sixteen persons were present and nine local boards of health were represented. Some of the delegates present were not aware that the law requires that contagious diseases shall be reported."

## HUDSON COUNTY.

MEMBERS AND OFFICERS—W. W. Varick, M.D., President; C. B. Converse, M.D., John Connell, M.D.; C. J. Rooney, Jr., Clerk; C. C. Hendrick, M.D., Inspector; M. Nevin, Inspector; E. T. Mitchell, Inspector; H. W. Winfield, Attorney.

Area, 38,709 acres; number of births reported, 7,524; number of deaths reported, 6,930; number of deaths under one year, 1,705.

## CITY OF BAYONNE.

MEMBERS AND OFFICERS—Egbert Seymour (Mayor), President; Henry Meigs, Vedder Van Dyck, L. F. Donohoe, M.D., James Faerst; F. F. Martinez, Jr., Secretary; A. C. Forman, M.D., Inspector; J. H. Nevins, Deputy Inspector; A. F. Gill, Deputy Inspector; Thomas F. Noonan, Jr., Counsel.

Population, census 1895, 19,856; area, 7,381 acres; number of births reported, 631; number of deaths reported, 440; number of



## HUDSON COUNTY—Continued.

deaths under one year, 112. The following cases of infectious diseases were reported: Diphtheria, 49; scarlet fever, 89; typhoid fever, 12. Infectious diseases are promptly reported. Twelve meetings were held by the board during the year. About 475 complaints were received, and in 443 of these cases the nuisance was abated. Progress has been made in extending the sewer system during the year. One of the public school buildings in the city is provided with a system for the disposal of excreta by fire. This method has produced a serious nuisance. The offensive odors being present in many parts of the building, action was taken in regard to this matter by the local board, and steps will be taken by the school board to remedy the existing conditions. The ordinances of the board are at present being revised. House-to-house inspection is regularly conducted in the closely-built district of the city, records being kept. Two suits for violation of health ordinances were brought by the board, in both of which judgment was obtained for the board and fines were imposed.

## CITY OF HOBOKEN.

MEMBERS AND OFFICERS—E. T. Stedman, M.D., President; Palmer Campbell, L. S. Fugazzi, August Grassman, S. A. Helfer, M.D., Horace L. Allen; James Havron, Secretary; Antonio Granelli, Inspector.

Population, census 1895, 54,083; area, 720 acres; number of births reported, 1,763; number of deaths reported, 1,285; number of deaths under one year, 329.

TABLE OF CONTAGIOUS DISEASES FOR THE YEAR ENDING JUNE 30TH, 1897.

NAME OF DISEASE.	Number of cases reported.	Number of deaths.	Number of houses infected.	Number of out-breaks confined to the first house.
Diphtheria .....	256	37	104	36
Membranous croup.....	32	15	32	...
Scarlet fever.....	161	10	120	26
Typhoid fever.....	17	8	17	...
Small-pox.....	1	...	1	...

## HUDSON COUNTY—Continued.

Twenty-five meetings have been held by the board. Eight hundred and seventy-three complaints were received and in nearly all cases abatement has been secured. House-to-house inspections are regularly made and records are kept on file. A new ordinance in relation to the protection of milk-supply was adopted September 14th, 1897. One suit for violation of the ordinances of the board was successfully prosecuted.

The flooding of the meadows on the western and northern borders of the city during heavy rains has continued to cause much annoyance to residents, and a proposition is now under consideration to establish a pumping station for the purpose of lowering the level of the ground water.

## JERSEY CITY.

MEMBERS AND OFFICERS—H. H. Abernethy, President; P. W. M. West, John S. Feeney; G. T. Robinson, Clerk; D. W. Benjamin, Inspector; J. H. Atkinson, Attorney.

Population, census 1895, 163,033; area, 12,288 acres; number of births, 3,536; number of deaths, 3,735; number of deaths under one year, 805. The following communicable diseases were reported: Diphtheria, 926; membranous croup, 57; scarlet fever, 617; typhoid fever, 45; measles, 676. Reports of communicable diseases are promptly made by physicians. Regular meetings of the board are held monthly. Nuisances reported, 3,757; nuisances abated, 3,467. Ten cases of glanders were reported. A new plumbing code was adopted and also an ordinance to prohibit spitting on the floors of street cars. Thirteen hundred and fifty-eight persons were vaccinated in the office of the board during the year. Twelve suits for violation of the ordinances of the board were brought during the year.

## KEARNEY TOWNSHIP.

MEMBERS AND OFFICERS—I. L. Newbery, President, Arlington; M. M. Forest, Arlington; Dr. J. A. Exton, Health Officer, Arlington; William Beardesley, Kearney; Robert F. Lord, Kearney; William Duncan, Kearney; James N. Matthews, Secretary, Arlington; Clark W. Beach, Inspector, Arlington; J. Franklin Crowell, Arlington.

## HUDSON COUNTY—Continued.

Population, census 1895, 10,487; area, 6,581 acres; number of births, 152; number of deaths, 234; number of deaths under one year, 45. The vital statistics relating to this district are forwarded to the county board of health, and no local record is made of marriages, births and deaths.

The following is a list of the infectious diseases which occurred in Kearney township during the year ending June 30th, 1897:

Disease.	Number cases reported.	Number deaths.
Membranous croup.....	2	1
Scarlet fever.....	36	1
Typhoid fever.....	4	1

The source of the infection in these cases was not positively ascertained, but it is believed that about one-half of them resulted from exposure to infection on school premises. The physicians in this district report cases of communicable diseases with promptness, except in the case of two individuals. The board has held fifteen meetings during the year, and reports have been received concerning 107 nuisances, all of which the board succeeded in abating. Five deaths resulted from drowning.

The following ordinance has been adopted since the last report to the State board of health.

## AN ORDINANCE DEFINING CERTAIN NUISANCES.

Be it ordained by the board of health of the township of Kearney, as follows:

Section 1. That the placing or depositing in or upon any lot, street or highway, or in or upon any private or public place in the township of Kearney, any dead animal, or any part of the same, or filth from privies or cesspools or other receptacles, or rubbish of any kind or description, or any house or kitchen slops, or garbage, manure or sweepings, is hereby defined to be a nuisance, and every such nuisance is hereby prohibited and forbidden within the township of Kearney. Any person or persons or corporation causing, making, maintaining or permitting any of said nuisances, shall forfeit and pay a penalty of twenty (\$20) dollars. Provided, however, that nothing herein contained shall be construed as preventing farmers, truck gardeners or other persons from using manure in or upon the soil for the fertilization or cultivation thereof.

Section 2. That the provisions of this ordinance shall be enforced, and any penalty incurred thereunder shall be collected in the manner prescribed by an act of the legislature of New Jersey, entitled "An act to establish in this State boards of health and a bureau of vital statistics, and to define their respective powers and

## HUDSON COUNTY—Continued.

duties," approved March 31st, 1887, and the acts amendatory thereto or supplementary therof.

The above ordinance was passed to its second reading at a regular meeting of the board of health, held August 4th, 1897.

I. L. NEWBERRY,  
President.

JAMES N. MATTHEWS,  
Secretary.

No control has been exercised by the board over the cutting and sale of ice. All dairies situated within the township are regularly inspected once in each year, and written reports of these inspections are placed on file. Permits for keeping dairy animals are issued when the report of the inspector seems to the board to warrant such action.

## NORTH BERGEN TOWNSHIP.

MEMBERS AND OFFICERS—Gustav Schlop, Chairman; A. E. Graham, Henry Harms, Edward Lussen, M. F. Moylan; George Bruce, Assessor and Secretary, New Durham.

Population, census 1895, 8,427; area, 7,647 acres; number of births reported, 174; number of deaths reported, 307; number of deaths under one year, 68.

## WEST HOBOKEN TOWNSHIP.

Report of investigation concerning the complaint of the city of Hoboken relative to alleged nuisance caused by discharge of sewage from West Hoboken:

September 18th, 1897.

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

GENTLEMEN—In response to a request from the counsel of the board of health of the city of Hoboken, asking that the State board of health shall inquire into a nuisance caused by the discharge of sewage upon lands in Hoboken in the vicinity of Fourteenth and Adams streets, I have to-day visited the locality referred to and respectfully report as follows:

Several years ago a drain was constructed along Palisade avenue, West Hoboken, from Paterson avenue to High street. Originally this drain was intended only as a means of lowering the ground water and thereby drying up the cellars of adjacent dwellings and to carry off the gutter water, but at present, I am informed, about twenty houses discharge waste fluids into it.

HUDSON COUNTY—*Continued.*

The outflow from this sewer is beneath the trolley railroad, and thence, by open ditch, into the city of Hoboken, near Fourteenth street.

At the time of my visit, about 12 M., the fluid discharged from the end of the in-pipe above referred to was in all respects sewage, but after flowing down the steep hill, and after reaching Hoboken, the same fluids had lost all of the odor and appearance of sewage and resembled pure water.

The flow was estimated to be about fifteen gallons per minute.

Very respectfully,  
 HENRY MITCHELL,  
 Secretary.

## HUNTERDON COUNTY.

## ALEXANDRIA TOWNSHIP.

MEMBERS AND OFFICERS—J. Reed, President, Little York; R. A. Williamson, Mount Pleasant; M. D. Knight, M.D., Clinton; John Crounce; W. B. Wean, Assessor and Secretary, Mount Pleasant.

Population, census 1895, 1,202; area, 17,524 acres; number of births reported, 13; number of deaths reported, 24; number of deaths under one year, 6.

## BETHLEHEM TOWNSHIP.

MEMBERS AND OFFICERS—John Johnson, President, Norton; Wm. Creveling, Pattenburg; J. V. Wilson, Bloomsbury; S. O. Myers, Assessor and Secretary, Bloomsbury; E. L. Riegler, M.D., Inspector; John H. Nuns, Attorney, Glen Gardner.

Population, census 1895, 1,761; area, 15,133 acres; number of births, 22; number of deaths, 24; number of deaths under one year, 3. Two cases of diphtheria occurred, with one death. Three meetings have been held by the board.

## BOROUGH OF CLINTON.

MEMBERS AND OFFICERS—W. H. Baker, President; F. A. Esty, S. Van Syckel; Joseph W. Berry, Inspector; Chester Tomson, Secretary.

Population, census 1895, 895; area, 722 acres. Four meetings were held during the year. A system of public water-supply is being

HUNTERDON COUNTY—*Continued.*

introduced. Five nuisances were reported to the board, and improvement was secured in the case of each of these complaints. The board contemplates the control of the ice-supply for the coming season.

## CLINTON TOWNSHIP.

MEMBERS AND OFFICERS—W. E. Berkaw, M.D., President, Annandale; T. J. Starner, Annandale; G. W. Kinney, Sunnyside; C. A. Conover, Potterstown; B. B. Berkaw, Assessor and Secretary, Annandale; Harvey L. Stout, Attorney, Flemington.

Population, census 1895, 1,941; area, 17,926 acres; number of births reported, 43; number of deaths reported, 32; number of deaths under one year, 7. Three cases of scarlet fever and six cases of typhoid fever and one death were reported. Two meetings of the board were held. The report for this township was full and comprehensive.

The following correspondence is published because it has general interest:

ANNANDALE, N. J., Aug. 5th, 1897.

Henry Mitchell, M.D., Secretary State Board of Health, Trenton, N. J.:

DEAR SIR—I desire to present the following case, trusting that you will refer me to any laws or circulars relative to the matter, as the condition is one of vital importance to the people of our village:

Located in the village is a creamery, and adjoining the said creamery is some land, lying rather low, which in a wet season shows evidence of some water arising from one or two springs. This piece of land was very recently sold to a person interested in the creamery, and at present he is building a large pond on the property with the intention of making it an ice pond in winter from which to cut ice for the creamery.

Having known the location for more than fifteen years, I am satisfied that the supply of water will not be sufficient to make the pond other than a stagnant pool during the summer and fall seasons. This is not a running brook of water which is being collected with an overflow.

Several persons owning residences adjoining this contemplated pond are complaining to me as health inspector. Of course, the nuisance does not exist now, but if it is a violation of health laws to construct such a pond it would be in the line of economy and public good to inform the parties constructing it that it had better not be done.

Will you please inform me what is the law in such cases?

Yours truly,

W. E. BERKAW, M.D.,  
 Health Inspector.

## HUNTERDON COUNTY—Continued.

OFFICE OF THE BOARD OF HEALTH  
OF THE STATE OF NEW JERSEY,  
TRENTON, Aug. 7th, 1897. }

*W. E. Berkaw, M.D., President Board of Health, Annandale, N. J.:*

DEAR DOCTOR—The inclosed circular (90) contains the act authorizing local boards of health to control and prohibit the cutting, sale and use of ice. The law is comprehensive, and it fully empowers local boards to prevent the spread of disease by means of impure ice.

It is an accepted principle that ice should not be cut for use for domestic purposes from any source which would not be considered good if the water was used for drinking unfrozen, and experience has shown that it is never safe to allow ice to be taken from unclean ponds or pools on pretence that it will be used for cooling purposes only, for such ice does so often find its way into drinking water that no reliance can be placed upon promises that it will be used in refrigerators exclusively.

The proper course is to issue no permits for the cutting or sale of ice except in cases where it is known by the board that the ice is provided from waters which are clean and uncontaminated. The board should promptly prosecute all offenders in accordance with the provisions of section 3 of the act approved March 18th, 1885, and the supplement approved March 8th, 1888.

Very truly yours,  
HENRY MITCHELL,  
Secretary.

## DELAWARE TOWNSHIP.

MEMBERS AND OFFICERS—Samuel S. Robinson, President, Raven Rock; Lewis Case, Sergeantsville; Anderson Bray, Sergeantsville; John E. Barber, Assessor and Secretary, Oakdale; George M. Best, M.D., Inspector, Rosemont.

Population, census 1895, 2,819; area, 27,589 acres; number of births, 27; number of deaths, 24; number of deaths under one year, 3. Two meetings were held during the year. Two complaints were investigated and relief was afforded in each case. Several cases of scarlet fever and diphtheria were reported, but no record of these cases was kept. Several animals were bitten by a rabid dog during the month of April, and one farmer lost four valuable cows. Hog cholera prevailed to a considerable extent in the southern part of the township, but at present few cases exist.

## HUNTERDON COUNTY—Continued.

## EAST AMWELL TOWNSHIP.

MEMBERS AND OFFICERS—Edward Larowe, President, Rocktown; William B. Prall, Ringoes; William Hixson, Wertsville; P. C. Young, M.D., Ringoes; S. H. Ditts, Secretary, Ringoes; William Clayhammer, Assessor, Wertsville.

Population, census 1895, 1,273; area, 15,729 acres; number of births reported, 14; number of deaths reported, 15; number of deaths under one year, 2. Six cases of diphtheria with four deaths and one fatal case of typhoid fever were reported. Four meetings were held and one nuisance was abated.

## FRANKLIN TOWNSHIP.

MEMBERS AND OFFICERS—P. H. Conover, President, Pittstown; William L. Scott, Quakertown; Isaiah Matthews, Pittstown; Q. E. Snyder, M.D.; Isaac Suydam, Assessor and Secretary, Quakertown; R. S. Kuhl, Attorney.

Population, census 1895, 1,287; area 14,631 acres; number of births reported, 20; number of deaths reported, 17; number of deaths under one year, 2. The board held one meeting.

## BOROUGH OF FRENCHTOWN.

MEMBERS AND OFFICERS—H. M. Harman, M.D., President; Charles Sigafos, George Tinsman; Wm. Hoffman, Secretary; Robert McIntyre, Inspector; L. D. Hagsman, Attorney.

Population, census 1895, 1,052; area, 281 acres; number of births reported, 17; number of deaths reported, 19; number of deaths under one year, 2. One case of scarlet fever occurred. This case appeared in the same dwelling in which the disease occurred two years ago, and inasmuch as it was the only case of this disease which existed in the borough during the year, it seems highly probable that the infection remained in the house after the illness which previously occurred. Four meetings were held and three nuisances were abated.

## HUNTERDON COUNTY—Continued.

## HIGH BRIDGE TOWNSHIP.

MEMBERS AND OFFICERS—Percival Christie, President; I. N. Hoffman, Peter A. Bunn; George F. Hummer, Assessor and Secretary; C. F. Halstead, Inspector; Paul Queen, Attorney. All of High Bridge.

Population, census 1895, 1,032; area, 11,348 acres; number of births reported, 43; number of deaths reported, 23; number of deaths under one year, 6. One case of diphtheria was reported during the year. Two meetings have been held by the board, and two complaints were received. Both of these nuisances were abated.

## HOLLAND TOWNSHIP.

MEMBERS AND OFFICERS—Godfrey Bellis, President; Oakley Vandebelt, Henry Sigafoss, George Wenner, M.D.; F. A. Dalrymple, Assessor and Secretary.

Population, census 1895, 1,706; area, 15,923 acres; number of births reported, 13; number of deaths reported, 24; number of deaths under one year, 3.

## BOROUGH OF JUNCTION.

MEMBERS AND OFFICERS—Howard Servis, M.D., President; Warren O. Landenberger, D. W. Anderson, Henry M. Bigelow; Morris E. Albright, Secretary.

Population, census 1895, 975; area, 2,560 acres. No meetings were held. One nuisance was abated.

## KINGWOOD TOWNSHIP.

MEMBERS AND OFFICERS—Thomas Malone, President, Raven Rock; A. B. Chamberlain, Baptisttown; Jacob T. Bloom, Baptisttown; Frank T. Grim, Baptisttown; S. J. Snyder, Assessor and Secretary, Locktown.

Population, census 1895, 1,375; area, 23,642 acres; number of births reported, 23; number of deaths reported, 25; number of deaths under one year, 3. One case of membranous croup and two cases of scarlet fever occurred in the township. All these cases were fatal. Twenty tuberculous cows were killed by order of the State authorities.

## HUNTERDON COUNTY—Continued.

## CITY OF LAMBERTVILLE.

MEMBERS AND OFFICERS—Jervas Ely, President; Albert D. Anderson, William A. Cole, Francis W. Larison, M.D., John Sproat, John L. Coryell; W. Wayne Robinson, Secretary.

Population, census 1895, 4,620; area, 754 acres; number of births reported, 74; number of deaths reported, 89; number of deaths under one year, 16. The following cases of communicable diseases were reported to the board: Diphtheria, 39 cases, 5 deaths; scarlet fever, 2 cases, no deaths; typhoid fever, 34 cases, 12 deaths. The typhoid outbreak was definitely traced to a polluted well, located in a stable near the rubber mill, the water of which was used by the employes in the mill. No cases of typhoid fever occurred in Lambertville during the period covered by the epidemic except in the persons of individuals who had partaken of this water. Fifteen meetings were held by the board during the year. Notification by physicians of cases of communicable diseases have been very prompt and satisfactory. Forty-seven nuisances were reported and abated.

LAMBERTVILLE, N. J., Jan. 22d, 1898.

Following is a report giving the names, ages and particulars of the thirty-six employes of the Lambertville Manufacturing Company (rubber mill) who were taken sick during the prevalence of the recent typhoid fever outbreak in Lambertville, N. J., resulting from the drinking of water from an infected well situated upon the premises of the company in the southern part of the city:

The first case of typhoid fever was reported March 1st, 1897; the last case was reported April 1st, 1897.

The first death from typhoid fever occurred March 16th, 1897; the last death occurred April 12th, 1897. There were twelve deaths from typhoid fever throughout the city during the epidemic.

The infected well was closed up March 12th, and on March 13th an analysis of the water was made by our local chemist, who found the water to be very impure and unfit for drinking purposes.

*Analysis as follows:* Specimen—Clear, tasteless and odorless.

Total solids in one gallon, dried at 212° F.....	8.8	grains.
Chlorine .....	0.65	"
Free ammonia, parts per million.....	0.185	"
Albuminoid ammonia, in one gallon .....	0.284	"
Nitrates, none; nitrites, marked traces.		

As soon as the disease assumed the proportions of an epidemic the board of health secured the services of Mr. Frank V. Robinson, of Altoona, as hospital nurse, who also acted as a health inspector, taking immediate supervision of the sanitary treat-

HUNTERDON COUNTY—Continued.

ment of all persons affected by typhoid fever throughout the city, and, as the number of cases increased, additional trained nurses were hired from time to time. On April 5th, steps were taken to establish an emergency hospital for the more effective treatment of the sick, and the vestry of Saint Andrew's Church offered the city the free use of their parish hall for that purpose, and as it was conveniently located and well adapted for the purpose it was gratefully accepted and promptly fitted up with the necessary furniture and fixtures. A committee of five citizens were appointed, who, together with the board of health, assumed the entire management of the hospital.

Mr. F. V. Robinson was made superintendent, and was ably assisted by a staff of four lady nurses from Blockley Hospital, Philadelphia. The hospital was opened April 8th, on which date three patients were admitted; seven more patients were received at different times up to and including April 26th, making in all ten patients treated at the hospital. Only one death occurred at the hospital, and this case was considered hopeless from date of admission, as he was in a semi-comatose condition when brought in. The last patient was removed May 21st, and the hospital was closed May 22d, 1897.

NAMES OF THE PERSONS WHO WERE AFFECTED WITH TYPHOID FEVER DURING THE EPIDEMIC IN LAMBERTVILLE, N. J., COMMENCING MARCH 1ST, 1897.

NAME.	Age.	Date taken sick.	Date admitted to hospital.	Date discharged from hospital.	Date of death.	Name of physician.
* Frank Call.....	37	March 1	.....	.....	.....	George L. Romine.
* Jerry Lahan.....	27	" 1	.....	.....	March 16	George L. Romine.
† William Hunt.....	44	" 2	.....	.....	" 22	George L. Romine.
† Charles Conover.....	26	" 2	.....	.....	" 14	George L. Romine.
† Joseph Fortiner.....	29	" 4	.....	.....	.....	George L. Romine.
* James Ferris.....	19	" 6	.....	.....	March 15	Edward W. Closson.
* Michael Riordan.....	23	" 8	.....	.....	" 17	George L. Romine.
† Wilson Price.....	38	" 8	.....	.....	" 25	Edward W. Closson.
† Charles E. Fisher.....	30½	" 10	.....	.....	" 15	Frank W. Larison.
* Fred Servis.....	19	" 7	.....	.....	.....	Peter McGill.
* Russell Cole.....	19	" 13	.....	.....	March 17	Frank W. Larison.
* Bessie Reading.....	16	" 13	.....	.....	.....	Edward W. Closson.
† George S. Cronce.....	36	" 16	.....	.....	.....	Frank W. Larison.
* Charles S. Slack.....	18	" 15	.....	.....	April 7	Edward W. Closson.
† William Campion.....	40	" 15	.....	.....	.....	George L. Romine.
* James Markey.....	26	" 18	.....	.....	.....	George L. Romine.
* Nellie Trimmer.....	17	" 23	.....	.....	.....	Edward W. Closson.
* Daniel C. Naylor.....	24	" 14	.....	.....	April 8	Frank W. Larison.
* Lewis L. Williamson.....	31	" 27	.....	.....	" 11	Edward W. Closson.
* Thomas McGuire.....	22	" 27	.....	.....	.....	Edward W. Closson.
* Minnie Trimmer.....	20	" 27	.....	.....	.....	Edward W. Closson.
* Charles Joiner.....	22	" 28	April 10	May 14	.....	Edward W. Closson.
* William Colligan.....	25	" 31	.....	.....	.....	George L. Romine.
* Charles Pidcock.....	18	" 31	April 8	Mar 10	.....	George L. Romine.
† John Mounan.....	28	" 28	.....	.....	.....	George L. Romine.
* John Duffey.....	18	" 28	.....	.....	.....	George L. Romine.
* William R. Naylor.....	15	" 28	April 10	May 10	.....	George L. Romine.
* Sallie Cole.....	22	April 1	" 8	" 14	.....	George L. Romine.
† Thatcher Heath.....	32	March 31	" 9	" 21	.....	Edward W. Closson.
* Reba Smith.....	17	April 4	" 10	" 20	.....	Edward W. Closson.
† Augustus Blackwell.....	50	March 16	.....	.....	.....	Peter McGill.
† Charles A. Callan.....	25	April 1	.....	.....	.....	Edward W. Closson.
* Bessie Higgins.....	21	" 3	April 10	Mar 14	.....	Edward W. Closson.
* Harry S. Toenigges.....	19	" 1	" 8	Mar 14	.....	George L. Romine.
† Samuel Z. Price.....	30	" 1	" 23	May 21	April 12	Edward W. Closson.
† Harry K. Slack.....	24	" 1	" 26	May 21	.....	George L. Romine.

\* Single, 22; † Married, 13; ‡ Widower, 1; Total, 36.

W. WAYNE ROBINSON,  
City Clerk.

January 22d, 1898.

HUNTERDON COUNTY—Continued.

LEBANON TOWNSHIP.

MEMBERS AND OFFICERS—George Apgar, President, Califon; Wm. S. Prall, Changewater; Daniel C. Anderson, Wood Glen; T. B. Fulper, M.D., Glen Gardner; A. S. Baughart, Assessor and Secretary.

Population, census of 1895, 1,894; area, 16,893 acres; number of births reported, 42; number of deaths reported, 35; number of deaths under one year, 4. Eleven cases of diphtheria, two cases of scarlet fever, with two deaths, and one fatal case of typhoid fever were reported. Two meetings were held by the board. Hog cholera has existed to some extent.

READINGTON TOWNSHIP.

MEMBERS AND OFFICERS—Wm. R. Ewing, President, Pleasant Run; A. V. Honeyman, White House Station; J. R. Foster, Three Bridges; F. L. Johnson, M.D., Stanton; Eugene Hoffman, Assessor and Secretary, White House Station.

Population, census 1895, 2,776; area, 31,190 acres; number of births reported, 50; number of deaths reported, 51; number of deaths under one year, 8.

UNION TOWNSHIP.

MEMBERS AND OFFICERS—Sylvester Taylor, President, Pittstown; H. A. Dalrymple, Pattenburg; Jonas Tharp, Pattenburg; N. B. Boileau, Jutland; John Little, Assessor and Secretary, Jutland; P. A. Queen, Attorney, Flemington.

Population, census 1895, 1,073; area, 12,734 acres; number of births reported, 8; number of deaths reported, 15; number of deaths under one year, 3. Two meetings of the board were held.

WEST AMWELL.

MEMBERS AND OFFICERS—Joseph K. Leigh, President, Lambertville; R. H. Fisher, Lambertville; William Holcombe, Mount Airy; F. W. Larison, M.D., Inspector, Lambertville; G. H. Carr, Assessor and Secretary, Lambertville; C. S. Skillman, Attorney, Lambertville.

HUNTERDON COUNTY—*Continued.*

Population, census 1895, 896; area, 12,970 acres; number of births, 12; number of deaths, 13; number of deaths under one year, 3. One case of diphtheria, five cases of scarlet fever and two cases of typhoid fever occurred, with one death each from typhoid fever and diphtheria. Reports from physicians in cases of infectious diseases are unsatisfactory. Two meetings were held by the board.

## MERCER COUNTY.

## EAST WINDSOR TOWNSHIP.

MEMBERS AND OFFICERS—George M. Wyckoff, President; Richard Norton, William T. Smock, William L. Wilbur, M.D.; A. N. Schenck, Attorney. All of Hightstown.

Population, census 1895, 2,671; area, 10,852 acres; number of births reported, 21; number of deaths reported, 40; number of deaths under one year, 6.

## EWING TOWNSHIP.

MEMBERS AND OFFICERS—James F. Herbert, President, Trenton Junction; Horace G. Hough, Trenton Junction; J. S. Hough, M.D., Trenton Junction; Samuel T. Atchley, Ewingville; James M. Matthews, Assessor and Secretary, Trenton.

Population, census 1895, 3,569; area, 11,359 acres; number of births reported, 15; number of deaths reported, 119; number of deaths under one year, 5. Contagious diseases are not reported by physicians with any regularity in this township. During the year three nuisances were reported to the board, two of which were abated.

## BOROUGH OF HOPEWELL.

MEMBERS AND OFFICERS—William Drake, President; E. P. Hawke, T. A. Pierson, S. V. Van Sandt; W. I. Phillips, Secretary; James H. Hill, Inspector.

Population, census 1895, 860; area, 336 acres. Four meetings were held, six complaints received and six nuisances abated.

MERCER COUNTY—*Continued.*

## HOPEWELL TOWNSHIP.

MEMBERS AND OFFICERS—John Fleming, President, Pennington; N. Stroud Voorhees, Glen Moore; P. B. Hunt, Titusville; Wm. M. Radcliffe, M.D., Inspector, Pennington; W. D. Hunt, Assessor and Secretary, Harbourn; T. D. Durling, Attorney, Pennington.

Population, census 1895, 4,300; area, 38,555 acres; number of births reported, 47; number of deaths reported, 69; number of deaths under one year, 9. Five meetings have been held by the board during the year. Action was taken in regard to one complaint, and the nuisance was abated.

## LAWRENCE TOWNSHIP.

MEMBERS AND OFFICERS—J. D. Cranston, President, Lawrenceville; Clark Flock, James W. Phillips, Trenton; Edmund De Witt, M.D., Lawrenceville; Isaac B. Baker, Assessor and Secretary, Lawrence Station.

Area of township, 13,862 acres; number of births, 16; number of deaths, 20; number of deaths under one year, 1. Thirteen cases of diphtheria occurred in the township during the year.

## BOROUGH OF PRINCETON.

MEMBERS AND OFFICERS—A. K. Macdonald, M.D., President; Prof. H. B. Cornwall, Prof. W. B. Harris, J. D. Wolfe, Richard Rowland; N. W. Hubbard, Secretary; August McDonald, Inspector.

Population, census 1895, 3,488.

## CITY OF TRENTON.

MEMBERS AND OFFICERS—Garret D. W. Vroom, President; Thomas S. Chambers, Treasurer; Wm. Golding, Frank V. Cantwell, M.D., Frank J. Eppels, Adam Exton; Wm. Cloke, Secretary; B. W. McGalliard, M.D., Health Officer; W. C. Allen and Edward Titus, Assistant Inspectors; Joseph Schaefer, Inspector of Plumbing.

Population, census 1895, 62,518; area, 3,047 acres; number of births reported, 736; number of deaths reported, 1,060; number of

## MERCER COUNTY—Continued.

deaths under one year, 291. The following infectious diseases were reported during the year: Diphtheria, 186 cases, 30 deaths; scarlet fever, 106 cases, 3 deaths; typhoid fever, 114 cases, 21 deaths. The propriety of constructing a filter plant for purifying the public water-supply has been under consideration, but no steps have yet been taken toward its introduction. Seven hundred and fifty-one complaints were received and investigated. The isolation hospital has proved to be very useful in suppressing outbreaks of communicable diseases. The plumbing inspector reports that 711 plumbing plans have been filed, 32 of which were disapproved. Six hundred and seventy-nine permits were issued, for which the sum of \$1,159 was received. Fourteen old buildings and 24 new buildings were connected with cesspools. Five hundred and seventy-three sewer connections were made. Air pressure for testing drain pipes was applied 654 times. Eighty-three premises were examined by the inspector upon request of the owners or occupants.

## WASHINGTON TOWNSHIP.

MEMBERS AND OFFICERS—Forman Hutchinson, President, Windsor; H. H. Hutchinson, Windsor; Laban H. Brown, Robbinsville; George S. Silvers, M.D., Windsor; J. B. Yard, Assessor and Secretary, Robbinsville.

Population, census 1895, 1,142; area, 13,309 acres; number of births reported, 8; number of deaths reported, 14. Several nuisances, caused by hog-pens, were abated by the board.

## BOROUGH OF WILBUR.

MEMBERS AND OFFICERS—Henry Whittier, President; John Coxon, Frank Higgins, Clarence Eldridge; J. H. Brooks, Secretary; Samuel Oliphant, Attorney.

Area, 443 acres. The following communicable diseases were reported to the board: Three cases of diphtheria, one case of membranous croup and six cases of scarlet fever. Seven meetings were held. Eight nuisances were reported and abated.

## MIDDLESEX COUNTY.

## CRANBURY TOWNSHIP.

MEMBERS AND OFFICERS—J. E. Bennett, President; A. M. Davison, Isaac M. Cudberly; James H. Goodwin, Assessor and Secretary. All of Cranbury.

Population, census 1895, 1,456; area, 11,336 acres; number of births, 31; number of deaths, 25; number of deaths under one year, 1. One nuisance has been reported.

## EAST BRUNSWICK.

MEMBERS AND OFFICERS—John O. Cozzens, Spottswood; Samuel Watts, South River; George H. Kohlhepp, Milltown; J. G. Dennelsbeck, M.D., Spottswood; David Serviss, Secretary, South River; Asher B. Rue, Assessor, South River.

Population, census 1895, 4,928; area, 18,664 acres; number of births reported, 86; number of deaths reported, 67; number of deaths under one year, 18. Two meetings were held by the board.

## MADISON TOWNSHIP.

MEMBERS AND OFFICERS—James Fountain, Browntown; W. H. Lamberson, Cheesequakes; Ambrose Green, Old Bridge; A. J. Jackson, M.D., Matawan; D. H. Brown, Assessor, Inspector and Secretary, Browntown.

Population, census 1895, 1,557; area, 23,993 acres; number of births, 4; number of deaths, 14; number of deaths under one year, 2.

## BOROUGH OF MILLTOWN.

MEMBERS AND OFFICERS—F. E. Riva, M.D., President; Adam Wagner, Conrad Wagner, R. M. Heustis, Bartholdi Christ; Conrad W. Kuhlthau, Secretary.

Number of births reported, 5; number of deaths reported, 2; number of deaths under one year, 2. Six meetings were held.



## MIDDLESEX COUNTY—Continued.

## CITY OF NEW BRUNSWICK.

MEMBERS AND OFFICERS—H. R. Baldwin, M.D., President; John B. Smith, P. A. Shannon, M.D., George R. Parsell, F. B. Kilmer, John Jacques; S. V. D. Clark, M.D., Secretary and Inspector; H. B. Willis, Attorney.

Population, census 1895, 19,910; area, 2,785 acres; number of births reported, 233; number of deaths reported, 395; number of deaths under one year, 74. Contagious diseases were reported as follows: Diphtheria, 20 cases, 3 deaths; membranous croup, 4 cases, 4 deaths; scarlet fever, 36 cases, 1 death; typhoid fever, 20 cases, 6 deaths. Monthly meetings are held by the board, and during the summer more frequently. Four hundred and thirty-seven nuisances were reported and all but two abated. Deaths resulting from accident occurred as follows: Drowning, 13; railroad injuries, 11; coal-gas, 2. Three suicides also were recorded. One suit was brought by the board against parties who maintain a sanitarium and allow patients to bathe in Lawrence brook, from which the public water-supply of the city is taken. The suit is now pending. The secretary of the board reports as follows:

The want of proper sewer facilities has been the cause of many complaints, as residents in some parts of the city have no sewer accommodation and are compelled to empty wash-water in the gutters.

This nuisance the board is called upon to correct. Disinfectants are largely used for this purpose, and in the parts of the city where there are sewers property-owners are directed to connect with the same.

All nuisances complained of on private property are inspected and permits to correct the same issued to licensed scavengers.

The health of the city has been good, except during the spring and early summer, when quite a number of cases of scarlet fever were reported, but not enough to be called an epidemic.

To prevent the spread of contagious diseases the board has directed the inspector to report all cases to the superintendent of the public schools, so that the children from infected houses may be kept at home. The natural watercourses at the extremes of the city have become more or less contaminated by drains emptying into them. To prevent this the board of health have used large quantities of disinfectants, and the beds of the streams have been cleaned.

During the early part of the summer reports of cases of typhoid fever were made to the board. All or most of the cases were confined to a limited portion of the city. Investigation was made, and it was found that most of the cases reported had been drinking water from a certain public well. The chemist of the board was directed to make an analysis of the water and report to the board.

It was found that the water was unfit for drinking purposes and the well was closed

## MIDDLESEX COUNTY—Continued.

by order of the president. Since that time no cases of typhoid fever have been reported from that section of the city.

During the summer a complaint was made to the board that a certain man by the name of Charles Smith, and a resident of Fresh Ponds, in this county, and professing to be a physician, was receiving patients at his home and treating them there by having them bathed in Lawrence brook, near by, which is the main source of supply for drinking water for the city of New Brunswick. As many as eleven people were seen in the water, all supposed to be suffering from some form of disease.

As soon as evidence could be procured a complaint was made before the justice of the peace, the man arrested and bound over to appear before the grand jury.

The board awaits the result of the investigation with a great deal of interest, as the law seems to be deficient in that it does not prescribe a penalty for bathing in water used for drinking purposes.

During the year the board has been instrumental in having sewers built in the Second and Sixth wards of our city, terminating at tide-water, which will be a great relief to the sections in which they have been built.

S. V. D. CLARK,  
Secretary.

## NORTH BRUNSWICK TOWNSHIP.

MEMBERS AND OFFICERS—Nelson S. Williamson, President, New Brunswick; J. B. Herbert, New Brunswick; T. H. Buckelew, Deans; John D. Ten Eyck, Franklina Park; Alonzo Bowman, Assessor and Secretary, New Brunswick.

Population, census 1895, 1,394; area, 8,975 acres; number of births reported, 18; number of deaths reported, 14; number of deaths under one year, 1. Two cases of typhoid fever were reported. Six meetings were held. One nuisance was abated. One suit at law was brought by the board for the suppression of a nuisance caused by a bone-boiling establishment. Decision not yet rendered.

## CITY OF PERTH AMBOY.

MEMBERS AND OFFICERS—E. V. R. Sofield, President; F. J. Richters, John Taft, S. W. Schoonover, Frank Neer, F. O. Pierson, Louis Garben; E. A. Hultz, M.D., Inspector; Adrian Lyon, Attorney.

Population, census 1895, 13,030; area, 3,997 acres; number of births reported, 410; number of deaths reported, 247; number of deaths under one year, 87.

Contagious diseases were reported as follows:

## MIDDLESEX COUNTY—Continued.

NAME OF DISEASE.	Number of cases reported.	Number of deaths.	Number of houses infected.
Diphtheria.....	32	8	21
Membranous croup.....	12	8	10
Scarlet fever.....	108	1	76
Typhoid fever.....	8	2	8

Fifteen meetings were held. The supply of water for the city, which was formerly taken from the mill-pond at Runyon, will soon be replaced by water obtained from a four-inch pipe well in the same locality.

Thirteen suits have been brought during the year, and the decisions were all favorable to the local board. Three of these cases were brought against midwives who failed to report births.

The following supplement to the sanitary code of the city of Perth Amboy was adopted December, 1896 :

Be it ordained by the board of health of the city of Perth Amboy, as follows :

Section 1. All owners of property along the line of any public sewer constructed in the city of Perth Amboy for the purpose of carrying off sewage shall connect their houses and other buildings with such sewer, and in the manner provided by the code to which this is a supplement.

Section 2. Any person who shall not comply with the terms of this supplement within thirty days after notification to make the aforesaid connection by the board of health or its duly authorized officer, shall be subject to a fine of twenty-five dollars for every such offense and shall also be subject to an additional fine of ten dollars for each and every day after the said thirty days in which the provisions of this supplement and of said notice shall not be complied with.

Section 3. That this supplement shall take effect immediately.

E. V. R. SOFIELD,  
President.

Attest:

E. A. HULTS,  
Clerk.

The rules and regulations for the government of the local board of health for the city are as follows :

## MIDDLESEX COUNTY—Continued.

## RULES AND REGULATIONS.

*Organization.*

The board of health shall meet on the second Monday in May of each year, for the purpose of organization, at the usual place of meeting; at which time a president shall be elected for the ensuing year. At the same time an inspector, a secretary and an attorney shall be elected, their terms of office and their compensation to be fixed by the board at the time of their election. In case of failure to elect officers at such meeting, said election shall be in order at any regular meeting thereafter. In all instances a majority of the board shall be required to elect.

The chair shall be taken by the president or the president pro tem. The roll shall be called at the hour appointed for such meeting, and the names of members present shall be recorded by the secretary; and the names of members afterward as they appear. When a quorum is present the board shall proceed to business, and after organization no member shall retire without permission of the chair.

*Regular Meetings.*

The board shall meet on the second and fourth Mondays of each month from April to November, and the second Monday of each month from November to April.

*Quorum.*

A quorum shall consist of a majority of the members of the board.

*Special Meetings.*

Special meetings of the board may be called at any time by the president, when he shall deem it necessary, or at the request of two members of the board in writing.

*Standing and Select Committees.*

Standing and select committees shall be appointed by the president each year as follows:

Sanitary committee.

Committee on accounts.

Committee on supplies and printing.

Each committee shall consist of three members.

The president shall be ex-officio a member of all standing committees.

The president shall also appoint all special committees.

*Order of Business.*

Roll call.

Reading of minutes.

Reception of petitions and memorials.

Presentation of bills and claims.

Reports of standing committees.

Reports of special committees.

Reports of health inspector.

Unfinished business.

Miscellaneous business.

Adjournment.

## MIDDLESEX COUNTY—Continued.

The order of business may be temporarily suspended by a two-thirds vote of the members present.

All motions shall be reduced to writing at the request of the president or of two members, and all resolutions shall be presented in writing with the name of the mover and no motion or resolution shall be considered until seconded, and when any such resolution or motion shall have been stated by the chair or read by the secretary, it shall be deemed in possession of the board, but it may be withdrawn by the mover at any time before the decisions or amendment.

It shall be in order for a member at any time, when the attention of the board is not occupied with other business, to rise for the purpose of making inquiries in regard to subjects connected with the board, and to receive answers thereto. But no member shall be permitted to make the subject of inquiry a matter of debate, except on motion made and seconded at the proper time, in the order of business.

When a member desires to speak or deliver any matter to the board, or offer any motion or resolution, he shall rise from his seat and respectfully address himself to the president; and shall confine himself to the question under debate and avoid all indecorous language and personalities. No member shall interrupt another who is in possession of the floor, without the consent of the occupant, nor then, unless to correct a misapprehension or misrepresentation of his own argument.

No member shall speak more than twice on the same question, at any meeting, without permission of the chair; nor shall any member occupy the floor more than ten minutes, at any time, without like permission.

If any member, in speaking or otherwise, transgresses the rules of the board, the president, or any member, may call him to order, in which case the person so called to order shall immediately resume his seat, unless permitted to explain, and the board, if appealed to, shall decide on the question without debate; if there be no appeal, the decision of the chair shall be submitted to.

When a question is under debate, no motion shall be received except—

- To adjourn.
- To lay on the table.
- For the previous question.
- To postpone for a definite time.
- To postpone indefinitely.
- To commit.
- To amend.

Which motions shall have precedence in the order in which they are arranged. A motion to lay on the table or for the previous question, shall be decided without debate.

The previous question shall only be admitted when demanded by one-third of the members present, and shall then be put in this form: "Shall the main question now be put?" and its effect shall be to put an end to all debate, and bring the board to a direct vote upon amendments reported by a committee, if any; then on pending amendments, and then upon the main question. All incidental questions of order arising after the previous question has been ordered shall be decided, whether on appeal or otherwise, without debate.

## MIDDLESEX COUNTY—Continued.

The yeas and nays may be ordered on any question before the board on demand of any two members.

The board may form itself into a committee of the whole; in which case the president, first naming a chairman, shall leave the chair. The rules of the board, so far as they may be practicable—except as they may restrict members from speaking more than twice, or provide for the calling of the yeas and nays, or give precedence to the previous question, or allow a motion to adjourn—shall be observed in committee of the whole; and a motion for the committee to rise may be made by any member at any time. In all other respects the transaction of business, the deliberations and proceedings of the board shall be conducted according to the usual rules of parliamentary law.

*The Duties of the Several Committees*

Are to be discharged without waiting for the direction of the board, when the power is expressly given, but in all other cases no action of any committee is to be binding until reported to the board and approved, and no expenditure exceeding twenty-five (25) dollars in any one month shall be made without such prior approval.

All reports of committees recommending any action shall be presented in writing and signed by the members of the committee who concur therein.

*Sanitary Committee*

Shall be that of a consulting party for the benefit of the inspector, with power to cause the abatement of all temporary nuisances detrimental to public health, without a special meeting of the board, provided that the same may be abated at an expense not to exceed twenty-five dollars.

*Committee on Accounts*

The committee on accounts shall receive and examine all bills and accounts referred to them by the board, and if satisfied of their correctness, shall so certify thereon and return the same to the board. But no bill or account shall be so referred which is not indorsed by a majority of the committee under whose supervision the expense was incurred, or the supplies furnished, and accompanied, if for supplies furnished, by the original orders; and no bill or account shall be paid for, unless the fulfillment of special contracts, until the same shall have been so referred and certified.

*Committee on Supplies and Printing.*

The committee on supplies and printing shall be charged with the duty of recommending, from time to time, such supplies and printing as they think best adapted to the wants of the board, and shall, under the direction of the board, contract for such supplies, and provide for the delivery of the same to the secretary of the board, to supersede any already in use, and shall be charged with the duty of contracting for and superintending the printing of all reports, documents, blank forms and other printing that may be ordered by the board, or required in the transaction of the current business of the board.

## MIDDLESEX COUNTY—Continued.

*Duties of President.*

The president, or, in his absence, the president pro tem., shall preside at the meetings of the board; preserve order and decorum in the meetings; may speak to points of order and decide all questions of order, subject to an appeal to the board, on motion of any member, regularly seconded, and no other business shall be in order till the question on appeal shall have been decided. He may express his opinion on any subject under debate, he may state facts, give his opinion on questions of order, and his reasons for any vote he may give, without leaving his place, and he shall also be the keeper of the seal of the board of health.

*Duties of Secretary.*

The secretary of the board shall have the custody of the records, books and papers of the board, and shall transfer them to his successor in office when his term of office shall expire. It shall be his duty to cause proper notices to be given of all meetings of the board, attend them and keep full minutes of the proceedings, which, after approval, shall be duly recorded without unnecessary delay in the book of minutes. He shall notify the chairman of every special committee appointed, stating the duties assigned and the members associated with him. He shall keep an account of all moneys accruing to the board from fines or otherwise, and keep a full account of receipts and expenditures, and shall perform such other duties as may be required of him by law, or by the board; and his compensation for such services shall be such as the board may prescribe.

*Duties of Inspector.*

It shall be the duty of the inspector to visit all parts of the city, as often as necessary, to make all examinations; to see that the regulations of the board in regard to the health of the city are properly carried into effect; it shall be his duty to enforce the health ordinances; to report in writing to the board monthly the condition of the health of the city, with such suggestions for improvements as experience and observation may dictate; and to perform such services in relation thereto as the board may require, and make such reports to the State board as required by law. He shall inspect meats and all food supplies and attend all meetings of the board.

He shall make a house-to-house visit at least once a year, and keep and make a report to the board on the blank forms provided for that purpose and recommended by the State board of health; and when ordered by the board to abate a nuisance he shall do so with all possible speed.

To receive the complaints of the people, and keep accurate statistics of complaints in a suitable book to be provided for that purpose.

His compensation for such services shall be as prescribed by the board.

These rules shall not be altered or amended without being presented in writing at a regular meeting previous.

The board of aldermen have agreed to the recommendation of the board of health and will proceed to cause the city jail to be ventilated.

## MIDDLESEX COUNTY—Continued.

## PISCATAWAY TOWNSHIP.

MEMBERS AND OFFICERS—Jacob M. Dayton, President, New Market; J. V. D. Field, Bound Brook; John H. Sebring, Bound Brook; M. J. Whitford, M.D., New Market; Charles E. Kelly, Assessor and Secretary, New Market.

Population, census 1895, 2,352; area, 20,616 acres; number of births reported, 67; number of deaths reported, 54; number of deaths under one year, 17. One case of scarlet fever occurred during the year, but there were no other cases of infectious disease reported. No measures are employed in this township to prevent the spread of communicable diseases except the placing of a card on the infected house. Five nuisances were brought to the attention of the board and all of them were abated.

## BARITAN TOWNSHIP.

MEMBERS AND OFFICERS—Luther H. Tappan, President; A. C. Litterst, Oscar I. Martin, W. W. Moore, M.D.; Wm. Van Siclen, Assessor and Secretary.

Population, census 1895, 3,914; area, 22,840 acres; number of births reported, 59; number of deaths reported, 54; number of deaths under one year, 8. Four cases of diphtheria and five cases of typhoid fever were reported to the board. The board held four meetings. During the past year a new water-supply has been introduced in Metuchen. The supply is obtained from artesian wells located in South Plainfield. The analyses of the water are very satisfactory. About thirty connections have been made. The number of hydrants is twenty-five. The water is pumped to a stand-pipe located on Bloomfield's Hill. The supply is owned by a private company, and Woodbridge and Carteret obtain water from the same source.

## SOUTH AMBOY BOROUGHS.

MEMBERS AND OFFICERS—Albert Roll, President; Bernard Roddy, J. Leon White, M.D., A. Parison, John J. Taylor; Joseph Fulton, Secretary; Thomas Baker, Inspector; B. Willis, Attorney, New Brunswick.

Population, census 1895, 5,571; area, 832 acres; number of births reported, 03; number of deaths reported, 105; number of deaths

## MIDDLESEX COUNTY—Continued.

under one year, 20. Diphtheria caused twenty-seven deaths; membranous croup caused ten deaths; these cases were all promptly reported by the attending physicians. Fifteen meetings were held by the board during the year. Six nuisances were reported, all of which were abated. Eight deaths resulted from accidents, six of which were caused by drowning and two by railroad injuries.

## SOUTH BRUNSWICK.

MEMBERS AND OFFICERS—William P. Hagerman, President, Dean's; John McDowell, Dean's; Frank W. Stout, Monmouth Junction; Edgar Carroll, M.D., Dayton; H. E. Hathaway, Assessor and Secretary, Monmouth Junction.

Population, census 1895, 2,467; area, 31,341 acres; number of births reported, 33; number of deaths reported, 25; number of deaths under one year, 5. Two cases of diphtheria were reported, one of which proved fatal. One complaint was received and the nuisance abated. One meeting was held by the board.

## WOODBRIIDGE TOWNSHIP.

MEMBERS AND OFFICERS—W. S. Anness, President, Woodbridge; E. W. Christie, Sewaren; O. N. Little, Woodbridge; J. V. Freeman, Secretary, Woodbridge; I. T. Spencer, M.D., Inspector, Woodbridge; William M. Brown, Attorney, Woodbridge.

Population, census 1895, 5,802; area, 18,903 acres; number of births reported, 175; number of deaths reported, 125; number of deaths under one year, 39. Thirty cases of diphtheria, with ten deaths; one case of membranous croup, which proved fatal, and one fatal case of typhoid were reported to the board. The spread of diphtheria is believed to have been increased by school attendance. Fifteen meetings were held by the board. A new water-supply is being introduced in Woodbridge, and about ten miles of sewers have also been laid. Eight nuisances were reported to the board, all of which were abated. On the premises where the case of typhoid fever occurred the water from the well was found to be polluted and the well was filled with earth by order of the board.

## MIDDLESEX COUNTY—Continued.

An action in chancery was commenced to abate a nuisance caused by overflow from cesspool and privy vault running on to adjacent property and forming a stagnant pool. The owner of the property on which the cesspool and privy vault were located, resisted enforcement of health ordinances, and the board proceeded to bring suit. Vice Chancellor Pitney upheld the action of the board in every point, and issued an injunction commanding the owner to abate the nuisance at once, either by discontinuing use of cesspool and privy vault, or by such frequent cleaning of same (daily, if necessary) that the cause of the nuisance would be removed.

## MONMOUTH COUNTY.

## CITY OF ASBURY PARK.

MEMBERS AND OFFICERS—N. E. Buchanan, President; M. L. Bamman, D. W. Sexton, Theodore Barringer, Randolph Ross, James A. Bradley, W. W. Davis; D. C. Bowen, Secretary; S. A. Patterson, Attorney.

Population, census 1895, 3,761; area, 320 acres; number of births reported, 31; number of deaths reported, 62; number of deaths under one year, 9.

The report furnished by the local board includes the following statement:

In January, 1897, the board of health was assigned quarters in the new city building, corner of Mattison avenue and Bond street, and the health office was moved from the apartment in Park Hall, which it had occupied since 1880. The change in the form of government in Asbury Park from borough to city necessitated the adoption anew of an ordinance establishing a board of health. This was done May 3d, 1897, and all of the members of the former board were re-appointed. The re-incorporation of the municipality also necessitated the re-adoption of the rules, regulations and ordinances of the board of health, and the opportunity was taken to introduce several improvements which had for some time been under consideration.

## MONMOUTH COUNTY—Continued.

The regular house-to-house inspections, which have been systematically performed by this board for seventeen years, have been continued during the past year, and in addition to the individual record of each premises in the city, which is kept and corrected by these inspections, maps have been prepared which show the exact location of all privy vaults, wells, stables, premises without sewer connections, premises on which fowls are kept, character and location of stable manure receptacles, &c. These maps are filed in a cabinet having sliding drawers, and they afford a very convenient method of reference for study and observation of the increase or decrease of the structures which are believed to have relation to the public health.

The following letter of inquiry from a physician of New York and reply to same, show the value of the inspection record, and indicate the practical utility of this record to tenants and occupants of buildings:

NEW YORK CITY, Aug. 22d, 1897.

To the Board of Health, Asbury Park, N. J.:

GENTLEMEN—My daughter has just returned from Asbury Park, where she has been sojourning with her child for the past two weeks at "The Burvington," 317 Seventh avenue, kept, I believe, by a Mrs. ———. My daughter was located in the house very near the bathroom. She suffered with a sore throat during the last few days of her stay there, and I find upon examination *streptococci*. As the house is filled with guests, I deem it my duty to advise a careful examination of the premises.

Very respectfully,

OFFICE BOARD OF HEALTH,  
ASBURY PARK, N. J.,  
Aug. 30th, 1897.

Dr. ———, 203 West Eighty-first Street, New York:

DEAR DOCTOR—An examination of the premises No. 317 Seventh avenue, kept by Mrs. ———, has been made by order of this board, and the following conditions have been observed:

The main drain connecting the sewer with the drainage system of the house is intercepted by a catch-basin. The catch-basin is sixteen inches square and is located in the yard twelve feet from the building. On the sewer side of the catch-basin a trap (four-inch) is placed and the catch-basin is ventilated by a four-inch cold-air inlet and a four-inch cast-iron pipe to the top of the house. The catch-basin is covered by a circular cast-iron cover, resting upon a two-inch flagging-stone. All of the house drainage is discharged into this catch-basin. The plumbing inside of the dwelling has recently been extended, and the new work was subjected, at the time of its construction, May 11th, 1897, to an air-pressure test of five pounds to the square inch for a period of thirty minutes.

## MONMOUTH COUNTY—Continued.

The whole system of the drainage of this dwelling, both old and new work, has just been subjected to smoke test and we find that the waste and vent pipes are tight except one joint. This joint is located in a closet in the kitchen. Inspection showed this joint, which was in a 1½-inch vent pipe from kitchen sink trap, had become separated and permitted smoke to escape when the exits at the roof were stopped by plugs and smoke under pressure was applied to the drains outside of the house. You will observe that sewer air is effectually cut off from these premises by means of the trap on the sewer side of the catch-basin, and leakage of sewer air into the catch basin is practically impossible. If, however, such leakage should occur the gases would be quickly and safely disposed of by the passage which is supplied from the catch-basin to the house roof by means of the cold-air inlet and the vent from catch-basin to top of house (all four inch pipes) The leak in the 1½-inch vent pipe in the kitchen, therefore, permitted no gases to enter the building except those which might be in the pipes on the house side of the catch basin.

The records of this office show the sanitary history of this and every other dwelling in Asbury Park, and we find by reference to these records (see copy inclosed) that no case of diphtheria or other sore throat has ever been reported from this house.

The housekeeping on these premises is slovenly.

The closets are not kept in a cleanly condition and the waste liquids have been strewn about instead of being deposited in the kitchen sink, where they belong. The whole appearance of the rear of the house is untidy.

We are of course much interested in the statement which you make in regard to the illness of your daughter. The infection seems to be in this case quite as likely to have occurred as a result of touching unwashed door knobs, chair arms and other similar objects about these ill-kept premises as from any other source. Sore throats have not prevailed in Asbury Park recently, there having been no case of serious illness of this nature for many months.

Very truly yours,  
D. C. BOWEN,  
Secretary.

Form xxix., 1893.

RECORD OF SANITARY INSPECTION.

No. 317 Seventh avenue.

Owner, B M. Burr Address, Belmar, N. J.

## SITE OF HOUSE.

1. Size of lot, 50 feet x 150 feet. Area of lot, 7,500 square feet. Area covered by buildings, about 2,800 square feet.
2. Has lot been filled in? No.
3. Elevation of house sill above curb. About 5 feet.
4. Ground-water level below curb. About 8 feet.
5. Height of buildings on adjoining lots. Two and a half stories on west, about 10 feet distant, and 2½ stories on east, about 8 feet distant.
6. Yard .....

MONMOUTH COUNTY—Continued.

- 7. Privy vault condemned, cleansed and filled with clean earth and abandoned for use by order of the board of health.
- 8. New catch-basin constructed.
- 9. Cesspool; size, construction, location and ventilation. No cesspool.
- 10. Well closed and abandoned.
- 11. Stable. None.
- 12. Chickens kept on premises? None.
- 13. Garbage: How stored? Metal cans.

HOUSE.

- 14. House erected, 1883; rebuilt and enlarged, 1897.
- 15. House used for boarders? Yes. For other business? No.
- 16. House faces south; sun exposure unobstructed.
- 17. Number of sleeping-rooms. Ten in 1894; 28 in 1897.
- 18. Rooms without windows. None.
- 19. Heating. Stoves.
- 20. Lighting. Gas and oil.
- 21. Number of stories high. Two and a half in 1894; 5 in 1897.
- 22. Material of construction. Wood. Sheathed and covered with building paper? Yes.
- 23. Fire-escape. None in 1894; iron fire-escape erected on rear of house 1897.
- 24. Roof. Slate.
- 25. Back dwelling on lot. Yes; erected in 1895. (See record on following blank)
- 26. Foundation: thickness. Four inches and 8 inches. Damp? No.
- 27. Cement floor placed in cellar.

PLUMBING.

- 28. New plumbing system, May, 1895. Extension made to plumbing work, making in all 8 closets, located—3 on first, 1 on second, 2 on third and 2 on fourth floor.
- 29. House drain: Material, cast iron; size, four inches; fall, ample.
- 30. Trap on main drain. Yes.
- 31. Inlet for fresh air. Yes.
- 32. Are all fixtures trapped? Yes. Traps vented? Yes.
- 33. Premises connected with street sewer? Yes.

VITAL STATISTICS.

- 34. Population of house. Accommodates about fifty guests.
- 35. Number of families.....
- 36. Diseases reported during past year.....
- 37. Diseases reported during past ten years.....
- 38. Deaths during past year.....
- 39. Deaths during past ten years. One; August 26th, 1891.

J. G. EMMONS,  
Inspector.

MONMOUTH COUNTY—Continued.

ICE.

Steps were taken during the past year to protect the inhabitants of Asbury Park against the use of ice collected from bodies of water of questionable purity, and, acting under the provisions of an act approved March 18th, 1885, no person was allowed to sell ice in the city without first obtaining a permit from the board of health. The following blanks were prepared:

Form xxxiv.

BOARD OF HEALTH OF THE CITY OF ASBURY PARK.

APPLICATION FOR PERMIT FOR THE SALE OF ICE.

Application is hereby made to the board of health of the city of Asbury Park for permission to bring into this city, and to sell and deliver ice which is intended for..... purposes. The following facts are furnished for the information of the board of health:

- 1. Name of dealer.....
- 2. Location of office or depot.....
- 3. Number of wagons used.....
- 4. Location of ice-houses.....
- 5. Where the ice is harvested.....

Signature.....  
Date.....189

STATE OF NEW JERSEY, } ss.  
COUNTY OF MONMOUTH, }

of full age and being duly sworn according to law, on his oath, says, that the foregoing statement is true.

Subscribed and sworn to before me on this }  
.....day of..... }  
189..... }

BOARD OF HEALTH OF THE CITY OF ASBURY PARK.

APPLICATION FOR PERMIT TO SELL ICE.

Name.....  
Date.....  
Ice to be used for..... purposes.  
Permit.....  
.....18

MONMOUTH COUNTY—Continued.

This permit is revocable at any time by the Board of Health.

Form xxxiv.

BOARD OF HEALTH OF THE CITY OF ASBURY PARK.

PERMIT TO SELL ICE.

In accordance with the provisions of the act approved March 18th, 1885, permission is hereby given to.....  
 to bring ice, which is intended for sale for.....  
 .....  
 purposes, into this city, and to sell and deliver said ice; provided, that said ice is obtained from the sources named in the application for this permit made by.....  
 on.....18

.....Clerk.

Penalty for violation of the act under which this permit is issued is \$500, or imprisonment not exceeding six months.

Form xxxiv.

Issue to.....  
 Ice to be used for.....  
 Ice obtained from.....  
 Date.....18

Permits were granted for the sale of ice which had been gathered on ponds of polluted water, but these permits specifically stated the purpose for which such ice should be used, and included butchers' boxes, fish and oyster markets and like purposes, but it was soon found that the terms of these permits were being disregarded by certain dealers, and that the ice intended for refrigerator purposes only was being served for domestic uses. This led to the revocation of several permits and the adoption of the following resolution by the board :

WHEREAS, The waters of Deal lake, Sunset lake, Wesley lake, Fletcher lake, Sylvan lake and Heroy's pond, and of their tributaries, arise from sources which render the water and ice taken from said lakes unquestionably unfit for potable use; therefore, for the protection of the public health, be it

Resolved, That no permits be granted by this board for the sale in the city of Asbury Park of ice which has been gathered from any of the lakes above named, nor from any lake, pond or stream on which skating has occurred; and be it

Resolved, That written notice be given to all persons engaged in the sale of ice in this city that no permits will be granted by this board for the sale of ice gathered from any of the sources named in this resolution.

MONMOUTH COUNTY—Continued.

Under the provisions of an act of the legislature, approved April 23d, 1897, the following ordinance relating to the sale of milk in Asbury Park has been adopted :

SEC. 7. Every person and every firm or corporation engaged in the sale of milk in the city of Asbury Park shall furnish to the board of health of said city a statement when requested so to do, definitely showing the locality where the milk which is sold, held or offered for sale by said person or persons was procured and also showing a full and complete list of the persons from whom said milk was purchased. Said statement shall be written upon blank forms furnished by said board of health.

Any person or persons who shall violate any of the provisions of this section shall forfeit and pay a penalty of fifty dollars.

SEC. 8. Every person and every corporation engaged in the sale of milk in the city of Asbury Park, shall, when requested so to do by the board of health of said city, furnish to said board a full and complete list of the names and addresses of all customers or persons to whom he or they shall deliver milk and the said list shall be corrected by said milk dealer from time to time in accordance with the requests of said board. Said list of names and addresses shall be written upon blanks supplied by the said board of health.

Any person or persons who shall violate any of the provisions of this section shall forfeit and pay a penalty of fifty dollars.

Information pertaining to the supply of milk is furnished, when so requested, to the board of health from each dealer on the following blank :

Form XLVI.

Office hour : 1 to 2 P. M.

BOARD OF HEALTH OF THE CITY OF ASBURY PARK.

Office : S. E. Cor. Mattison avenue and Bond street.

INFORMATION RELATING TO PURCHASE OF MILK.

To the Board of Health :

In accordance with the provisions of section 7 of the sanitary code of the city of Asbury Park, I hereby furnish the names and addresses of all the persons from whom I (or we) purchase milk, and also a statement showing the locality from which such milk is procured.



MONMOUTH COUNTY—Continued.

Locality from which milk is procured.	Names and addresses of persons from whom milk is purchased.	No. of quarts received daily.
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

[Signature.]

Date.....189.....

EXTRACT FROM SANITARY CODE OF THE CITY OF ASBURY PARK, ADOPTED AUGUST 3d, 1897.

SEC. 7. Every person and every firm or corporation engaged in the sale of milk in the city of Asbury Park shall furnish to the board of health of said city a statement when requested so to do, definitely showing the locality where the milk which is sold, held or offered for sale by said person or persons was procured, and also showing a full and complete list of the persons from whom said milk was purchased. Said statement shall be written upon blank forms furnished by said board of health.

Any person or persons who shall violate any of the provisions of this section shall forfeit and pay a penalty of fifty dollars.

BOARD OF HEALTH OF THE CITY OF ASBURY PARK.  
INFORMATION RELATING TO PURCHASE OF MILK.

Name of dealer.....  
Address.....  
Date when furnished.....189.....

With this information as a basis to work upon, inquiry into the sanitary conditions existing on each dairy premises supplying milk is made and a record is prepared, generally fortified by one or more photographs, showing the number of cows, their apparent healthfulness, the source of the water-supply, the facilities for washing cans, bottles and utensils, the habits of the milkers, the method of cooling the milk and the temperature at which it is sold.

The quality and quantity of the public water-supply during the past year has been entirely satisfactory, and but few householders have failed to avail themselves of the privilege of connecting their premises with the street mains. There are but sixteen dwellings in the city which depend upon well water for their only source of supply. This is five less than existed a year ago. There are, how-

MONMOUTH COUNTY—Continued.

ever, still 105 domestic wells in the city, many of which are seldom or never used, while the water from others is used for laundry purposes only; and still others, owing to the fact that water freshly drawn from the ground on a hot day is cool and palatable, notwithstanding the fact that it is probably polluted, are kept for drinking purposes in the summer time. These wells are classified by the board as follows:

Wells on premises which have no other water supply.....	18
" " " are also supplied with water from street mains.....	77
Private artesian wells.....	4
Wells to which the public has access.....	8
Total.....	105

There has been no change in the method of collection and disposal of garbage and rubbish since our last report, but the question is now being again considered by the city officials, and it is hoped that before another year Asbury Park will have instituted more modern methods for the collection and disposal of these troublesome products. The following report concerning some of the questions relating to this subject will soon be presented to the governing body of this municipality:

ASBURY PARK, N. J., Oct. 25th, 1897.

To the Mayor and Common Council of the City of Asbury Park, N. J.:

GENTLEMEN—The question relating to the disposal of garbage, which was referred to this board by your honorable body for investigation, has been duly considered, and we respectfully present the following report:

In anticipation of some device for the more satisfactory final disposal of the refuse of Asbury Park, this board has, during the past ten years, noted the experience in England and in this country which has attended the construction and use of incinerating, reducing and rendering plants for handling the refuse accumulation of municipalities, and we have been keenly interested in the progress thus far made in the efforts to effectually and economically dispose of these substances.

Cremation of garbage has gained rapidly in popularity among sanitarians, and it has thus far fully met all hygienic requirements; but in the interest of economy the search after methods which shall utilize some of the ingredients of town refuse, has been steadily kept up.

There are, therefore, only two methods for the disposal of garbage which it is proper to bring to your attention at this time. One of these is the so-called *reduction* process, which has for its purpose the extraction of grease, and the desiccation of the material to a state in which it is known as tankage. The grease is sold for lubricating and for various other uses, and the tankage is utilized as an adulterant for fertilizers.

## MONMOUTH COUNTY—Continued.

The other system is the cremation method, which reduces the garbage to gas and slag.

The first of these processes depends for its value entirely upon the reclamation of the waste products above referred to. The objections to its employment relate to the handling and storage to which the garbage is necessarily subjected in the treatment.

During the summer months the amount of grease obtained is exceedingly small on account of the large proportion of fruit and vegetables which are used. The market price of grease and the fertilizer adulterant has been so small during the past three years that the reduction process in the treatment of garbage could not be carried on except at a loss. All the methods employed for this purpose are protected by patents.

It should be noticed that all plants for extracting the valuable parts of the refuse materials handle garbage only, thus excluding and leaving, to be otherwise disposed of, an enormous bulk of very objectionable matter which is commonly designated rubbish. The Merz reduction process, which has been in operation in St. Louis, and the Simonin process, which has been in operation in Cincinnati, and also in Providence, have not been successful from a financial standpoint.

From a sanitary point of view the reduction process is extremely objectionable, because it has invariably caused a serious nuisance in every locality in which it has been tried.

The destruction of garbage by fire is altogether more desirable than the method just referred to, because the garbage is quickly converted into an odorless and inoffensive gas and no nuisance is created after the garbage is once dumped into the furnace.

The processes for the application of heat are found to vary greatly, and the use of coal, gas and petroleum as fuel has been found practicable, but we believe that crude petroleum thrown into the furnace by means of a steam jet has been shown to be the most economical, and most easily controlled method of producing the high temperatures which are required in conducting this operation.

Quite recently the heat generated in garbage furnaces has been utilized for the making of steam, and in at least one district, Shoreditch, England, an electric light plant is successfully supplied with power from the garbage furnace.

In the construction of garbage furnaces, the most difficult problem which at present presents itself seems to be to build them so that they will be capable of withstanding the changes of temperature to which they are subjected.

The fact that garbage can be burned without creating a nuisance is fully established. Great difficulties, however, attach to the burning of rubbish, and few garbage crematories are so constructed that they are capable of receiving and incinerating this material.

From a report of the committee on the disposal of garbage and refuse made in April, 1897, to the American Public Health Association the following statements are quoted:

"The system of destruction of garbage by rendering is used in twelve (12) cities in the United States. In one of these, however, it has been abandoned.

"Cremation systems, where garbage is destroyed by fire, are used in forty-two (42) cities in the United States.

"The committee states that the cost per capita for the burning of garbage in cities having over one hundred thousand population is from eighteen to twenty cents per

## MONMOUTH COUNTY—Continued.

annum. The cost of collection and removal of garbage where it is disposed of by dumping on land, in the case of small cities, ranges from six to twelve cents per capita per annum.

"For the same service in cities where the garbage is fed to animals, the cost varies from twenty-eight to thirty-seven cents.

"In Berlin it has been found that garbage can be destroyed in a suitable furnace at small expense without much additional fuel, and in Hamburg it has been accomplished without any additional fuel whatsoever.

"The furnaces used in these instances are modifications of the Fryer furnace as improved by Horsfall."

The committee quotes from a report on the disposal of garbage in the city of Zurich, Switzerland, as follows:

"The city officials visited the best works in England and on the continent, and experiments were made regarding the disposal of the material in their own city, the following conclusions being reached: Destruction of refuse by fire is to be recommended; the method will not entail a greater expense than the crude method used heretofore.

"With the latest improvements and with careful management no objectionable results will follow in the immediate or more distant surroundings of the garbage furnace. From a sanitary point of view, cremation is the only correct method of disposal, particularly during epidemics."

In Asbury Park in 1893, while the collection and transportation of garbage was being performed under the supervision of the health department, records were kept for the purpose of making a basis for estimating the actual cost of collection and transportation of garbage, and the following data were then gathered:

The wagons in use by the contractor have the following dimensions: The bodies are nine feet in length, three feet three inches in width, and one foot eight inches in depth, and have a capacity of 48.75 cubic feet, or 1.80 cubic yards.

The average weight of one load (1.8 cubic yards) of garbage was found to be 2,850 pounds, or 1,472 pounds for each cubic yard, or seven and one-quarter pounds for each gallon.

The distance from the dumping-ground is two miles, and the time consumed in transporting a load of garbage and returning the empty wagon to the borough is two and one-half hours.

Four loads were taken out by each wagon daily, at a cost of \$1.18 $\frac{1}{2}$  for each load. The total number of loads of garbage removed from the borough from June 1st to October 1st was 1,92, at a total cost to the contractor of \$1,236.75.

If a furnace should be erected within one half mile of the borough boundary for the cremation of garbage, it is estimated that two-fifths of the time for each wagon, and of its team and crew of two men would be saved—or forty-seven cents for each load—thereby reducing the cost of each load to seventy-one cents, and reducing the cost for four months from \$1,236.75 to \$778.15, thus making a saving in transportation of \$518.60 during that period.

It was estimated at the time that the total amount per annum of garbage removed from Asbury Park was about 2,250 tons.

MONMOUTH COUNTY—Continued.

The same wagons are still in use for the removal of garbage, and they are entirely unsuitable for the purpose, and should be replaced by vehicles owned by the city. The bodies should be constructed of sheet steel, and should be so arranged that the load may be discharged by dumping. Several parties are engaged in the manufacture of garbage wagons of this general character.

As a general principle, the board believes that the city should own all of the plants which are used in connection with public works. There can be no question but that the sewer works should be owned by the city as well as the water works. The garbage works belong to the same group of public necessities, and should be owned and operated and be at all times under the control and management of the mayor and common council.

This board recommends the following procedure:

1. The purchase of a suitable site, as near the city limits as possible, for the construction of an incinerating plant for the disposal of garbage and rubbish. This site should be so located that it can be within reach of the sewer and the public water-supply.
2. The employment of a competent person to prepare plans and specifications for the construction of a garbage furnace.
3. A sufficient number of suitable metallic garbage wagons should be purchased by the city.

We advise that for the coming year the collection and transportation shall be done by contract. The contractor to furnish the necessary labor and horses, but to use wagons which are provided by the city.

The committee's report and recommendation were unanimously adopted, and it was, by motion, ordered that the report be transmitted to the mayor and common council.

On motion, adjourned.

SECRETARY.

One hundred and thirty-one plans and specifications for the plumbing and drainage of buildings have been filed in this office during the past year, making a total number to date of 1,041.

There are but thirty-three premises in Asbury Park which are not connected with the sewer. They are classified as follows:

Dwellings.....	9
Business houses.....	5
Churches.....	4
Shops and small buildings.....	15
Total.....	33

The board has continued its efforts during the past year to rid the city of objectionable and offensive privy vaults. Seventy-four of these structures have been replaced by water-closets, but there are still 343 privy vaults in use.

MONMOUTH COUNTY—Continued.

The following forms of notice have been used in dealing with offensive privies:

To.....

Whereas, it has been brought to the attention of the board of health of the city of Asbury Park, county of Monmouth and State of New Jersey, that the privy vault upon the premises owned by you, and known as ..... in said city of Asbury Park, is so constructed that the same is a nuisance and dangerous to the public health of said city, and that the said privy vault and contents thereof contaminate the ground and air adjacent thereto:

Therefore, you are hereby notified that the said board of health will meet in the health office at the engine-house, corner of Mattison avenue and Bond street, in said city, on the.....day of ..... 1897, at the hour of eight o'clock P. M., to hear such evidence as may be presented to said board touching the truth of said allegations, and determine whether in fact said nuisance exists, and you, the said .....are notified to be present at said time and place and present to said board such evidence as you desire relating to said complaint and said alleged nuisance.

Dated.....18...

Pres't.

Clerk.

To.....

At a meeting of the board of health of the city of Asbury Park, held in the health office, corner Mattison avenue and Bond street, Asbury Park, N. J., on the ..... day of .....189...at eight o'clock P. M., whereof due notice was given you, it was established by evidence then and there presented to said board of health that the privy vault maintained on the premises owned by you, known as..... Asbury Park, N. J., is a public nuisance and injurious to the public health of said city, in that said vault contaminates the air and soil adjacent thereto.

Therefore, you are hereby notified to abate said nuisance within..... days from the date of service hereof upon you, by causing the accumulations in said vault to be removed, and the bottom of said vault to also be removed and the said vault to be filled with clean earth.

In default of which the said board of health will abate said nuisance in manner aforesaid and the expense thereof will be recovered from you by legal proceedings.

Dated.....189...

Pres't.

Clerk.

## MONMOUTH COUNTY—Continued.

The number of reported cases of diphtheria which occurred during the past year exceeds that of any preceding year, but the mortality was less than for any preceding year, except for the years 1891 and 1894, when there were no deaths from that disease. There were fifteen reported cases and two deaths. During the fall and winter of 1896-7 diphtheria prevailed in epidemic form in the adjoining sanitary districts, and, owing to the daily presence in the city of the inhabitants of the two infected districts, because of intimate business relations, and because many children from those localities then regularly attended our public school, there was constant exposure of our citizens to the infection of the disease. The first three cases which occurred in Asbury Park were directly traced to infected persons from Neptune township. Knowing of the prevalence of the disease in this vicinity, a circular letter was prepared by the board and sent to all physicians practicing in this city, requesting that all cases of suspicious sore throat be reported to the health office, and that specimens for bacteriological examination be taken. This request was cordially conformed to by the physicians, and it doubtless led to the detection of some mild cases of true diphtheria which would have otherwise escaped observation.

As we have already stated, one of the three cases above referred to was contracted in Baltimore; two others were secondary cases, occurring in families in which there had existed a previous case. The direct source of contagion in the remaining cases was not learned. A bacteriological examination was had in each of the cases as soon as reported, and isolation for the afflicted person was maintained until the laboratory examinations, which were made about every five days during the continuance of this disease, showed that the bacilli were no longer present. The length of time necessary to maintain isolation varied greatly in these cases, and the facts observed show that the isolation of patients afflicted by diphtheria frequently results in detaining some patients longer than is really necessary for the protection of the public health; and, on the other hand, other patients are undoubtedly permitted to mingle with uninfected persons before they cease to be capable of transmitting the disease.

## MONMOUTH COUNTY—Continued.

TABLE SHOWING LENGTH OF TIME DURING WHICH THE BACILLI REMAINED IN EACH CASE OF DIPHTHERIA REPORTED.

REPORTED DATE OF ATTACK.		Died.	Date of release from isolation.	Number of days during which the patient was infectious.
1	case October 9.....	.....	Oct. 24..	15
1	" " 18.....	Oct. 20..	.....	6
1	" " 18.....	.....	Oct. 26..	8
1	" " 20.....	.....	" 28..	6
1	" " November 17.....	.....	Jan. 12..	66
1	" " " 22.....	.....	Dec. 18..	26
1	" " December 22.....	.....	Jan. 16..	25
1	" " January 3.....	.....	" 22..	19
1	" " " 8.....	.....	" 18..	8
1	" " " 10.....	.....	" 22..	12
1	" not reported.....	May 19..	.....	.....
1	" May 23.....	.....	June 8..	16
1	" " ".....	.....	" 19..	25
1	" date of inception uncertain—not counted.....	.....	.....	.....
1	" June 18.....	.....	July 20..	32

Average period during which the patients remained infectious, 21.5 days.

In our efforts to prevent the spread of this disease during the past year very valuable assistance was received from the State Bacteriological Laboratory, in Princeton, in making bacteriological examinations in the case of suspected diphtheria, and particularly in secondary examinations, to learn when the bacilli were no longer on the throats of the persons known to have been infected.

Bacteriological examinations of specimens taken from the throats of persons known to have had an exposure to the disease, but who did not develop clinical symptoms, were also secured, and by this method the diphtheria bacilli were found to exist in the throats of ten such persons, and in each case the individuals were kept under surveillance until the disappearance of the bacilli. The following table shows the number of specimens sent through this department to the State Laboratory for examination:

MONMOUTH COUNTY—Continued.

	Diphtheria bacilli present.	Diphtheria bacilli not found.	Total.
Primary specimens.....	25	48	73
Secondary.....	53	35	88
Total number of specimens sent for examination.....			161

Two specimens were sent for diagnosis in cases of suspected tuberculosis, one proving positive and one negative.

Fourteen cases of scarlet fever were reported, but no deaths from this disease occurred. Two of these cases were undoubtedly imported. The closest inquiry was made concerning these cases, but no communication was proved to have occurred between the infected persons and those in whom the disease subsequently developed.

The following table shows the number of cases of communicable diseases reported and the number of deaths which have occurred therefrom in Asbury Park for thirteen years, 1885-1897.

YEARS.	POPULATION.		NUMBER OF CASES REPORTED.						DEATHS.					
	Resident (estimated).	Non-resident (estimated except for census years).	Measles.	Scarlet fever.	Diphtheria.	Typhoid fever.	Consumption.	Small pox.	Measles.	Scarlet fever.	Diphtheria.	Typhoid fever.	Consumption.	Small-pox.
1885	2,000	15,320	14	3	1									
1886	2,125	17,108	4	2	9				2	1			2	
1887	2,250	18,896	82	7	7					4			2	
1888	2,375	20,694		20	2	1				7				
1889	2,500	22,472	10	3		1			1	1				
1890	2,625	24,260		16	6									
1891	2,750	26,048	1	6	2				1	2				
1892	2,875	27,836	36	4	1									
1893	3,000	29,624	7	7	6				1	3	1			
1894	3,380	31,412	7	7	2	1	8						3	1
1895	3,761	33,200	6	5	7	7				3	1		5	1
1896	4,141	35,000	39	3	2	1			1	1			2	
1897	4,521	36,800	5	14	15	2	1			2	1		2	
Totals			204	97	61	17	3	8	1	5	26	3	49	1

MONMOUTH COUNTY—Continued.

The emergency hospital has been opened twice during the past year; once for the care of a diphtheria case and once for a case of scarlet fever.

In December, 1896, this board commenced the use of formaldehyde gas for house disinfection. Fifteen different styles of apparatus have been employed for generating the gas, with varying results. Test cultures which have been employed during the disinfection of infected apartments have shown that the gas, when used in sufficient quantities and when the rooms were kept closed for a sufficient time, will destroy the diphtheria bacilli under such conditions as are usually found in ordinary houses. Experience has shown, however, that several of the lamps which are offered for sale by manufacturers for generating formaldehyde gas are unsafe in the hands of inexperienced persons.

The system pursued in making the record of deaths of persons dying in Asbury Park includes a statement as to whether the deceased is a resident or non-resident of the borough, and also shows the death-rate for each year among permanent residents and among transient visitors.

The following table shows the death-rate in Asbury Park since the establishment of the board of health, except for the year 1881, which is not available:

YEARS.	POPULATION.		DEATHS.			DEATH-RATE.	
	Resident.*	Non-resident.†	Resident.	Non-resident.	Total.	Resident.	Non-resident.
1880	1,640	6,380	19	13	32	11.58	2.03
1881		8,168					
1882	1,784	9,956	30	18	45	16.81	1.80
1883	1,856	11,744	18	12	30	9.69	1.02
1884	1,928	13,532	24	15	39	12.44	1.10
1885	2,060	15,320	20	14	34	10.60	0.91
1886	2,125	17,108	21	23	44	9.88	1.34
1887	2,250	18,896	20	29	49	8.88	1.53
1888	2,375	20,684	16	18	34	6.73	0.91
1889	2,500	22,472	28	28	56	11.20	1.24
1890	2,625	24,260	32	39	71	12.19	1.60
1891	2,750	26,048	34	28	62	12.36	1.11
1892	2,875	27,836	25	24	49	12.17	0.86
1893	3,000	29,624	30	19	49	10.00	0.64
1894	3,380	31,412	40	21	61	11.86	0.66
1895	3,761	33,200	39	17	56	10.36	0.54
1896	4,141	35,000	34	25	59	8.21	0.71
1897	4,521	36,800	43	19	62	9.51	0.51

\* Resident population estimated, except for the years 1880 and 1895.  
† Estimated.

MONMOUTH COUNTY—Continued.

MONMOUTH COUNTY—Continued.

The reports of births for the year were as follows :

Males .....	13
Females.....	18
Total .....	31
Still-births.....	2

Following is a statement of the office work of the board :

Number of written notices requiring improvement in stable premises.....	46
“ “ “ “ “ excavation of privy-vaults.....	153
“ “ “ “ “ compliance with garbage ordinance.....	27
“ “ “ “ “ abatement of defective drainage construction .....	47
“ “ “ “ “ abatement of nuisance other than specified, .....	83
“ “ “ “ “ for violation of plumbing and drainage ordinance.....	34
“ “ “ “ “ quarantine notices.....	25
“ “ “ “ “ general communications.....	1,179
Total.....	1,598
Number of meetings held.....	20

TABLE SHOWING CAUSES OF DEATH.

DISEASES.	Among resi- dents.	Among non- residents.	Total.
Diphtheria.....	2		2
Cholera Morbus.....		1	1
Cholera Infantum.....	1	1	2
Typhoid Fever.....	1	1	2
Dermatitis, Gangræous .....	1		1
Pulmonary Tuberculosis.....	1		1
Meningeal Tuberculosis.....		1	1
Cancer of Stomach.....	2		2
Carcinoma .....		1	1
Diabetes .....	1		1
Anæmia .....	1		1
Cerebral Hemorrhage.....		1	1
Convulsions .....	2		2
Apoplexy .....	2	1	3
Sclerosis.....	1		1
Abdominal Tumor.....	1		1
Tumor of Liver.....	1		1
Sarcoma.....	1		1
Degeneration of Heart.....	1		1
Dilation of Heart.....	1		1
Valvular Disease of Heart.....		2	2
Mitral Disease of Heart.....	1		1
Heart Disease, not stated.....	1	1	2
Bright's Disease.....	3		3
Nephritis.....	3		3
Marasmus.....	1		1
Bronchitis.....	1		1
Pneumonia.....	6	1	7
Gastritis.....	1	1	2
Peritonitis.....		2	2
Jaundice.....	1		1
Epithelioma of Vagina.....		1	1
Premature Birth.....	3		3
Senile Debility.....	1		1
General Debility.....	1		1
Asphyxia by gas (accident).....		2	2
Drowning (accident).....		1	1
Uremia .....	1		1
Endocarditis .....	1		1
Enterocolitis .....		1	1
Totals.....	43	19	62

TABLE SHOWING NUMBER OF WRITTEN PERMITS DURING YEAR, BY MONTHS.

MONTHS.	Certificates of approval of plumbing plans.	Minor alterations and repairs in house drainage.	For construction of stable manure receptacles.	Scavenger permits.	Burial permits.	Transit permits.	Total during month.
October, 1896.....	14	5	1	10	3	2	25
November, “.....	14	7	1	2	3	3	30
December, “.....	10	3	2	6	2	3	26
January, 1897.....	7	2	.....	5	1	4	19
February, “.....	6	6	.....	2	4	.....	18
March, “.....	14	16	.....	10	1	.....	41
April, “.....	15	15	.....	31	3	3	67
May, “.....	22	12	1	36	1	6	78
June, “.....	5	21	.....	13	3	3	45
July, “.....	17	8	1	18	1	5	50
August, “.....	4	4	.....	29	1	6	44
September, “.....	3	.....	1	6	1	3	14
Totals.....	131	93	7	168	24	38	467

## MONMOUTH COUNTY—Continued.

TABLE SHOWING AGES AT DEATH.

	Males.	Females.
Under 1 year.....	4	5
From 1 to 2 years.....	...	...
From 2 to 5 years.....	2	2
From 5 to 10 years.....	1	1
From 10 to 20 years.....	...	1
From 20 to 30 years.....	1	1
From 30 to 40 years.....	3	1
From 40 to 50 years.....	3	3
From 50 to 60 years.....	3	5
From 60 to 70 years.....	8	6
From 70 to 80 years.....	3	4
From 80 to 90 years.....	1	3
Over 90 years.....	1	...
Totals.....	30	32

## COMPLAINTS RECEIVED, EXCLUSIVE OF THOSE MADE BY EMPLOYES OF THE BOARD.

	Number of complaints.
Non-removal of garbage by contractor.....	61
Garbage receptacles offensive.....	6
Garbage on ground.....	3
Burning garbage in kitchen range.....	6
Waste fluids on ground.....	13
Rubbish in yards.....	8
Keeping chickens on premises.....	3
Defective and offensive water-closets.....	8
Obstructed drains.....	2
Defective and leaky drains.....	4
Defective plumbing.....	1
Untrapped drainage fixtures.....	1
Offensive privy vaults.....	41
Overflowing privy vaults.....	8
Overflowing catch-basins.....	26
Livery stable premises offensive.....	9
Private stable premises offensive.....	4
Stable manure receptacles.....	3
Damp cellars.....	4
Offensive markets.....	10
Offensive street gutters.....	3
Unclassified complaints.....	7
Total.....	231

## MONMOUTH COUNTY—Continued.

## BOROUGH OF ATLANTIC HIGHLANDS.

MEMBERS AND OFFICERS—William T. Franklin, President; Thomas J. Emery, Thomas Jennings, A. C. Watrous; Edgar H. Cook, Secretary and Inspector; John E. Foster, Attorney.

Population, census 1895, 1,715; area, 600 acres. Diphtheria, three cases; typhoid fever, three cases. The diphtheria cases were traced to infection brought from Staten Island. Five meetings were held and four complaints were received concerning unsanitary conditions, and the nuisance in each of these four instances was abated.

## ATLANTIC TOWNSHIP.

MEMBERS AND OFFICERS—Samuel T. Vandever, President, Colts Neck; Daniel Sutte, Tinton Falls; George Wilkins, Jr., Freehold; Levi Scobey, Scobeyville.

Population, census 1895, 1,455; area, 20,264 acres. Number of births reported, 12; number of deaths reported, 17; number of deaths under one year, 5.

## BOROUGH OF BELMAR.

MEMBERS AND OFFICERS—Charles H. Thompson, M.D., President; Jacob Titus, George W. Oswald, S. L. Gillen, F. P. Philbrick, Wm. M. Bergen; Neil H. Miller, Secretary; Samuel C. Hoppeck, Inspector; H. H. Wainwright, Attorney, Manasquan.

Area, 600 acres. One case of typhoid fever was reported. This case is believed to have been due to the use of water from a polluted well. The suspected well was closed by the board. Eleven meetings were held. Fifty nuisances were reported, nearly all of which were abated. A new water-supply owned by the borough, was introduced during the year. Water is obtained from three artesian wells. A new plumbing ordinance was adopted by the board. Several suits for the violation of the health ordinances were brought during the year, and judgment was rendered in favor of the board in all but one case. In this case the evidence was insufficient.

## MONMOUTH COUNTY—Continued.

## BOROUGH OF BRADLEY BEACH.

MEMBERS AND OFFICERS—Elias Brower, President; William Furlong, Charles Cromford, D. F. Gant, Aaron Smith; Thomas R. Layton, Clerk; Robert Reynolds, Inspector.

Population, census 1895, 707.

## TOWN OF FREEHOLD.

MEMBERS AND OFFICERS—John W. Bawden, President; O. R. Freeman, M.D., I. S. Long, M.D., Daniel Smith, Henry C. Thorn; J. O. Burt, Secretary and Inspector.

Population, census 1895, 3,157. Six cases of typhoid fever were reported.

## REPORT OF WATER COMMISSIONERS OF THE TOWN OF FREEHOLD.

The water commissioners of the town of Freehold beg leave to submit the following as their seventh annual report for the year ending April 1st, 1897:

There have been during the year 34 new permits taken out, making a total of 313. The total number of consumers is now about 350.

*Sewers.*

The number of sewer permits cannot be stated here because they are issued by the board of health. The increased earnings show that a large number of connections has been made. The earnings from sewer rentals have amounted to \$1,344.14, which is \$388.42 in excess of last year.

The cost for labor and supplies has been \$342.76. To this should be added a share of the superintendent's salary, and a third of the salaries of the water commissioners. It will thus be seen that the sewers are approaching in revenue an amount that will make them self-sustaining and provide for the payment of the interest.

The cement floor of the sewer tank has been newly made over at a cost of \$158.21. It is now in a substantial shape and is likely to last many years. The disposal fields are in good condition and easily take care of the increasing demands upon them.

*Fuel.*

The cost of coal and carting during the year has been \$587.99 as against \$365.10 last year. The increase in the cost of fuel has been due to two causes. First, there has been a large increase in the water consumed; and second, the small rainfall has lessened the water-power for pumping.

*New Boiler.*

A new fifty-horse-power boiler has been installed at the pumping-station at a total cost of \$708.34. The boiler itself cost on board the cars at Freehold, \$67. Sealed proposals were received from a half dozen boiler-makers, and the above was the bid of James Beggs & Company, reputable boiler engineers of New York City.

## MONMOUTH COUNTY—Continued.

*Water Pumped.*

There has been a much larger amount of water pumped during the year than the increased number of consumers would account for. It can only be explained on the supposition that there has been more waste. The total number of gallons pumped has been 71,487,678, an excess of 14,870,698; 19,384,422 gallons were pumped by water-power as against 26,300,172 gallons the year previous. There were pumped by steam 52,103,156 gallons as against 30,300,172 last year.

The plant in general is now in first-class condition. The new boiler was much needed and has been provided large enough to take care of the natural increase of demand for many years to come. There has been some grading done about the station, which has given the place a very tidy appearance.

*Net Earnings.*

We have been able to pass over to the town treasurer the sum of \$2,293.99. This is the largest amount that has yet been passed to the town. This too, notwithstanding a new boiler has been paid for, the sewer tank newly cemented, and the stand-pipe repainted. We must not forget that we have a very valuable fire service that we can hardly estimate in dollars. It, however, should be taken into account when crediting the net earnings.

*Delinquents.*

The amount of uncollected rentals reported in the financial summary is \$242.90. This is largely the meter rents due the first of April, and for the collection of which there is hardly time up to the writing of this report. So that practically there is a delinquent list of only \$28.05. The rest is expected to be paid within a very few days. This we regard as a remarkably good showing.

*Telephone.*

We have now established telephone connections with the pump station. The Monmouth Telephone Company have put in free of charge one telephone at the superintendent's house and another at the engineer's house, at the station. These will be of much service during a fire, as well as of great convenience all the time.

## FINANCIAL SUMMARY.

*Receipts.*

Balance from last year.....	\$3 81
Water rentals.....	4,370 92
Sewer rentals.....	1,344 14
Wm. N. Thompson, ice privilege.....	75 00
Wm. N. Thompson, street sprinkling.....	176 85
Thirty-four attachments permits.....	102 00
Received for millstone.....	25 00
Received from last year's earnings.....	433 29

\$6,531 01



## MONMOUTH COUNTY—Continued.

## Disbursements.

Coal and carting.....	\$587 99	
Boiler and setting.....	708 34	
Painting stand-pipe .....	85 00	
Cementing sewer tank .....	158 21	
Flushing sewers.....	38 76	
Corporation stops.....	26 00	
Meters.....	13 60	
Salaries of water commissioners.....	450 00	
Salary of superintendent.....	900 00	
Salary of engineer.....	420 00	
Sewer labor.....	300 00	
Collector's salary and expenses.....	85 30	
Incidentals.....	220 92	
D. S. Crater, treasurer, net earnings.....	2,293 99	
Uncollected rentals.....	242 90	
		\$6,531 01

## Inventory.

One 10 x 4 T, 28 x 4 L's, 3 ten-inch bends, 1 six-inch T, 1 6 x 4 Y, 4 three-inch L's, 1 ten-inch sleeve, 5 six-inch sleeves, 9 four-inch sleeves, 1 three-inch sleeve, 1 four-inch plug, 8 inspection caps, 2 lengths of ten-inch water pipe, 1 eight-inch flanged pipe, 3 four-inch water pipes, 1 three-inch water pipe, 300 feet of one-and-a-half-inch galvanized pipe, small lot of fittings for wrought-iron pipe.

## Oil, Coal, Waste, &amp;c.

Five tons of soft coal,  $\frac{1}{2}$  ton of hard coal, 1,000 bricks, 50 fire bricks, 25 pounds waste, 40 pounds of oakum, 20 gallons of cylinder oil, 18 gallons of engine oil, 75 pounds of lead.

## Tools and Implements.

One mowing machine, 1 lead furnace with fixtures, 1 tapping machine, 1 set of drilling tools for artesian wells, 1 grindstone, 1 pipe vise, 1 pipe cutter, 2 wrenches, 1 hammer, 1 scythe, 2 grass shears, 1 lawn mower, 1 cart and harness, 1 harrow, 4 wheelbarrows, 6 shovels, 6 picks, 3 forks and 2 rakes, 2 pails, 6 lanterns, 3 brooms, axe, saw square, 2 stoves, 2 sets of stencil plates, lot of rope for sewer flushing, 200 feet of sewer pipe and lot of odd sewer pipe.

A. C. HARTSHORNE,  
JOHN ENRIGHT,  
W. B. DURYEE,

Board of Water and Sewer Commissioners.

The following extract from the *Monmouth Democrat* shows the financial aspect of the water works question in this town:

It was argued by the advocates of the town ownership of the water system that the principal and interest of the bonds could be paid without increasing the tax rate, and

## MONMOUTH COUNTY—Continued.

that the income from the rentals for private service would be sufficient, after a year or two, to at least meet the cost of running expenses. They have more than paid running expenses from the start, and already after five years of successful operation (the first year, ending April 30th, 1892, should not in fairness be counted) they are not only paying running expenses and extraordinary expenses in the shape of improvements, but are contributing a very considerable sum towards the principal and interest of the bonds. This year, as will be learned from the report of the water board, the sum paid over to the town treasurer was a small fraction short of \$2,300. The original cost of the water works complete was \$46,000, payable \$1,000 each year for six years ending with 1898, together with interest at four per cent., amounting to \$1,840. The works, therefore, as originally planned for and constructed, come within \$600 of paying running expenses, improvements and the principal and interest of the bonds, without counting the service to the town, which should in all fairness, it is claimed, be accounted for in the statement. Putting it at the rate proposed by the private company that was organized for building the works, namely, \$2,100 for forty fire hydrants (we have had fifty from the start), and already it will be seen that the works are paying everything and a profit of some \$1,600 besides. The town, however, purchased the mill property and the pond and meadow adjoining the pumping station, at a cost of about \$4,000, which increased the cost of the plant and made extensions of the mains, &c., at a cost of about \$4,000 more (we are speaking from recollection and not by the card); but counting this all in, and it will still be seen that the system is paying its current expenses and more than \$1,000 besides, a complete vindication of the course of those who urged the policy, which the people adopted, of public ownership of the works. Of course much of the credit for this complete success is due to the admirable management of the works by the water board, all the members of which have given their best services in this regard, quite as energetically and with as much of an eye to economy as if the system had been their own private enterprise.

As to the tax rate, that need not have been raised to meet the payments for the water system. A small addition was made to pay for the sewer system, which also bids fair shortly to become self-sustaining.

## FREEHOLD TOWNSHIP.

MEMBERS AND OFFICERS—Peter F. Conover, President; C. D. B. Forman, Millard F. Conover, O. R. Freeman, M. D.; Rufif Lawrence, Secretary and Attorney. All of Freehold.

Population, census 1895, 2,356; area, 25,969 acres; number of births reported, 91; number of deaths reported, 75; number of deaths under one year, 7. Two cases of typhoid fever were reported. The board held two meetings. One hog-pen nuisance was reported and improvement in its condition was secured.

MONMOUTH COUNTY—*Continued.*

## HOLMDEL TOWNSHIP.

MEMBERS AND OFFICERS—Wesley Mason, President; Jonathan I. Holmes, Jacob O. Lambertson; Aaron Longstreet, Secretary; Fred. V. Thompson, M.D., Inspector. All of Keyport.

Population, census 1895, 1,479; area, 11,500 acres; number of births reported, 17; number of deaths reported, 16; number of deaths under one year, 3.

## HOWELL TOWNSHIP.

MEMBERS AND OFFICERS—S. M. Disbrow, M.D., Farmingdale; B. M. Cooper, Lakewood; C. E. Farry, Farmingdale; Robert H. Morris, Turkey; James M. Butcher, Assessor and Secretary, Ardens; Aaron Johnson, Attorney, Freehold.

Population, census 1895, 3,246; area, 42,209 acres; number of births reported, 31; number of deaths reported, 49; number of deaths under one year, 9. Ten meetings were held by the board. Four nuisances were reported to the board, all of which were abated.

## TOWN OF KEYPORT.

MEMBERS AND OFFICERS—William Bedle, President; William Smith, Augustus Maurer, J. Frank Mason, Timothy Mount; Abram Haylar, Secretary; James M. Walling, Inspector.

Population, census 1895, 3,386. Four cases of diphtheria were reported. The board holds regular monthly meetings. One complaint was received.

## COMMISSION OF LONG BRANCH.

MEMBERS AND OFFICERS—G. H. Baker, M.D., President; William J. Smythe, Jr., Paul F. Brazo, Theodore Howland, J. V. Jordan; E. B. Blaisdell, Secretary; B. S. Van Huel, Health Inspector; S. F. McCloud, Inspector of Plumbing.

Population, census 1895, 7,333; number of births reported, 86; number of deaths reported, 104; number of deaths under one year, 17. Diphtheria has prevailed to a considerable extent, and measures have been employed by the board to limit its spread.

MONMOUTH COUNTY—*Continued.*

## MANASQUAN BOROUGH.

MEMBERS AND OFFICERS—H. H. Wainwright, President and Attorney; Robert C. Conover, G. V. W. Burroughs, R. W. Herbert, M.D.; M. M. Hough, Secretary; B. F. Chamberlain, Inspector. All of Manasquan.

Population, census 1895, 1,427. One case of diphtheria and nine of scarlet fever were reported. Six meetings were held by the board. Three complaints were received.

## MANALAPAN TOWNSHIP.

MEMBERS AND OFFICERS—J. C. Sutphin, President, Tennent; D. S. Amack, Englishtown; E. M. Reid, Smithburg; A. T. Applegate, M.D., Englishtown; S. C. Bowne, Assessor, Tennent; G. B. Conover, Secretary, Englishtown; S. C. Cowart, Attorney, Freehold.

Population, census 1895, 1,944, including borough of Englishtown; area, 20,017 acres; number of births reported, 30; number of deaths reported, 25; number of deaths under one year, 4. No record has been kept of contagious diseases which have occurred in this district. Two meetings have been held by the board during the year. One complaint was received, and the board was able to secure abatement of the nuisance.

## BOROUGH OF MATAWAN.

MEMBERS AND OFFICERS—J. W. Maggs, President; William Hartwick, William Rodgers, William Lambert, John W. Horner, Andrew Jackson, M.D., Isaac Bedle.

## MATAWAN TOWNSHIP.

MEMBERS AND OFFICERS—John Kuhns, President, Matawan; Alonzo Rose, Matawan; Ten Eycke Conover, Matawan; Chris. Winten, Assessor and Secretary, Cliffwood.

Area, 5,411 acres; number of births reported, 57; number of deaths reported, 43; number of deaths under one year, 9.

MONMOUTH COUNTY—*Continued.*

## MILLSTONE TOWNSHIP.

MEMBERS AND OFFICERS—William Parker, President, Etra; H. L. Oldridge, Clarksburg; Curtis B. Forman, Smithburg; W. T. McMullan, M.D., Perrineville; George J. Ely, Assessor and Secretary, Perrineville.

Population, census 1895, 1,723; area, 25,354 acres; number of births reported, 14; number of deaths reported, 23; number of deaths under one year, 3. One case of typhoid fever was reported during the year. Five meetings were held.

## BOROUGH OF NEPTUNE CITY.

MEMBERS AND OFFICERS—E. Finley, President; M. Newman, John Slocum, James King; William Rogers, Secretary and Inspector.

Population, census 1895, 658; number of births reported, 9; number of deaths reported, 6; number of deaths under one year, 2. Communicable diseases were reported as follows: Diphtheria, 2 cases, 1 death; scarlet fever, 2 cases, 1 death; typhoid fever, 4 cases. Six meetings were held. Thirteen nuisances were reported, ten of which were abated.

## BOROUGH OF NORTH SPRING LAKE.

MEMBERS AND OFFICERS—Joseph L. Allen, President; George M. Height, John M. Applegate, Frank Neafie; Charles R. Brahr, Secretary.

Population, census 1895, 262. No meetings were held.

## OCEAN GROVE ASSOCIATION.

MEMBERS AND OFFICERS—H. W. Murphy, James L. Hayes, J. R. Daniels, George W. Evans, J. H. Alday, M.D.; E. A. Ballard, Secretary; H. B. Alday, M.D., Inspector.

Area, 400 acres. Contagious diseases were reported as follows: Diphtheria, 12 cases; membranous croup, 1 case, 1 death; scarlet fever, 1 case; typhoid fever, 1 case. The main sewer pipe has been extended 1,200 feet into the ocean. One nuisance consisting of an offensive stable yard was reported and abated.

MONMOUTH COUNTY—*Continued.*

## OCEAN TOWNSHIP.

MEMBERS AND OFFICERS—James Conover, President; T. R. Wooley, Washington Brown, S. J. Wooley, M.D.; H. C. Irwin, Secretary; H. A. Brinley, Assessor. All of Long Branch.

Population, census 1895, 2,880; area, 16,152 acres; number of births reported, 15; number of deaths reported, 19; number of deaths under one year, 2.

## TOWN OF RED BANK.

MEMBERS AND OFFICERS—Charles D. Warner, President; John Sheehan, H. J. Childs, James Walsh; Samuel Sabath, Secretary; William Wilson, Inspector.

Population, census 1895, 4,888. One case of diphtheria and twenty-five of scarlet fever were reported. Six meetings were held and twenty-five nuisances were abated. A system of sewers is now in course of construction. Four deaths occurred as a consequence of gasoline accidents. Action has been taken by the board to prevent the cutting and sale of impure ice.

## UPPER FREEHOLD TOWNSHIP.

MEMBERS AND OFFICERS—William Kirby, President, Cream Ridge; E. A. Hyers, Red Valley; William Quicksell, Assessor, Hornerstown; F. C. Price, M.D., Secretary, Imlaystown.

Population, census 1895, 2,270; area, 30,718 acres; total number of births, 47; total number of deaths, 39; total number of deaths under one year, 6. The following infectious diseases occurred during the year: Scarlet fever, 5 cases, 1 death; typhoid fever, 5 cases, no deaths. In one case the cause of typhoid fever was traced to a polluted well. In the other cases no positive conclusion was reached.

## WALL TOWNSHIP.

MEMBERS AND OFFICERS—Benjamin E. Alger, President, New Bedford; Charles Gifford, Allenwood; Fred. B. Craig, Como; W. W. Trout, M.D., Spring Lake; G. E. Rogers, Assessor and Secretary, New Bedford; Edwin S. Longstreet, Attorney, Manaquan.

MONMOUTH COUNTY—*Continued.*

Population, census 1895, 3,853; area, 26,236 acres; number of births reported, 113; number of deaths reported, 72; number of deaths under one year, 14. Two cases of diphtheria and ten cases of scarlet fever were reported. Physicians do not report communicable diseases satisfactorily in this township. The board held six meetings and received seven complaints.

## MORRIS COUNTY.

## TOWN OF BOONTON.

MEMBERS AND OFFICERS—N. L. Briggs, President; Henry Waer, George Harris, A. E. Carpenter, M.D.; George W. Blanchard, Secretary; Thomas Hammond, Inspector; J. S. Salmon, Attorney.

Population, census 1895, 3,276; area, 50,571 acres; number of births reported, 41; number of deaths reported, 56; number of deaths under one year, 14. Diphtheria, 7 cases; scarlet fever, 10 cases, were reported. One meeting was held. Numerous nuisances were reported and improvement was secured in each case.

## BOROUGH OF CHATHAM.

MEMBERS AND OFFICERS—George H. Kirkpatrick, President; Addison H. Day, William Elder, George M. Swain, M.D.; Melvin K. Hopping, Secretary; Charles Young, Inspector.

## CHESTER TOWNSHIP.

MEMBERS AND OFFICERS—S. H. De Camp, President; A. W. Cooper, Elwood S. Pitney; J. D. Budd, Assessor and Secretary; W. A. Green, M.D., Inspector. All of Chester.

Population, census 1895, 1,562; area, 19,328 acres; number of births reported, 27; number of deaths reported, 20; number of deaths under one year, 7. There was one meeting held during the year.

MORRIS COUNTY—*Continued.*

## CITY OF DOVER.

MEMBERS AND OFFICERS—Harry S. Peters, President; John H. Green, Samuel M. Clark; Joseph V. Baker, Secretary; Lewis C. Wildrick, Inspector; James H. Neighbour, Attorney.

Population, census 1895, 5,021; area, 1,920 acres; number of deaths reported, 86; number of deaths under one year, 11. Eight cases of diphtheria and forty-seven cases of scarlet fever, accompanied by two deaths, were reported to the board. Forty-two nuisances were reported, all of which were abated.

## MENDHAM TOWNSHIP.

MEMBERS AND OFFICERS—Calvin Willet, Mendham; Jesse N. Forsyth, Mendham; H. S. Baldwin, Brookside; John D. Lindsley, Assessor and Secretary, Mendham; John J. Stiger, M.D., Inspector, Mendham.

Population, census 1895, 1,452; area, 15,587 acres; number of births reported, 27; number of deaths reported, 21; number of deaths under one year, 4. One complaint was received by the board and the nuisance was abated.

## MONTVILLE TOWNSHIP.

MEMBERS AND OFFICERS—John Copstick, President, Montville; Walter A. Young, Boonton; F. Van Dwyne, Glen View; Asa T. Cook, Assessor and Secretary, Montville.

Population, census 1895, 1,370; area, 12,064 acres; number of births reported, 9; number of deaths reported, 11; number of deaths under one year, 2.

## MORRISTOWN.

MEMBERS AND OFFICERS—I. W. Rosearear, President; Charles McCollum, William J. Kay, Isaac Arnold; Thomas Martin, Secretary.

Population, census 1895, 10,290; area, 1,850 acres; number of births reported, 205; number of deaths reported, 180; number of deaths under one year, 31.

MORRIS COUNTY—*Continued.*

## MORRIS TOWNSHIP.

MEMBERS AND OFFICERS—Charles G. Swan, M.D., President; P. Miller, Henry L. Pruden; C. M. Phillips, Assessor and Secretary.

Population, census 1895, 2,525; area, 10,227 acres. Two cases of diphtheria occurred, both of which were fatal. Physicians do not satisfactorily report cases of contagious disease. Three meetings were held during the year. Two complaints were received, in one of which the board was able to secure abatement of the nuisance.

## BOROUGH OF MOUNT ARLINGTON.

MEMBERS AND OFFICERS—Richard J. Chaplin, President; George W. Cisco, D. T. Trundy, F. W. Zuck, H. C. Upchurch, M.D., Kenville; Cyrus E. Cook, Secretary.

Population, census 1895, 348. Number of births reported, 3; number of deaths reported, 7; number of deaths under one year, 4. Seven cases of scarlet fever were reported. The first case of this disease which appeared in the borough had been visiting in the city of Paterson. Seven meetings were held; two complaints were received and in both cases the nuisance was abated.

## BOROUGH OF MOUNT TABOR.

MEMBERS AND OFFICERS—Henry L. Coit, M.D., President; Charles E. Fisher, Charles L. Pitts, A. A. Campbell, S. M. Long, J. B. Cantrill, David A. Barnes, J. H. Cox; Samuel Warren, Secretary.

## MOUNT OLIVE TOWNSHIP.

MEMBERS AND OFFICERS—Aaron S. Hulse, President; Budds Lake; Jacob W. Wack, Draketown; David H. Wolf, Budds Lake; Charles N. Miller, M.D., Flanders; S. W. Salmon, Secretary, Mount Olive.

Population, census 1895, 1,273; area, 20,522 acres; number of births reported, 39; number of deaths reported, 34; number of deaths under one year, 6. One case of scarlet fever was reported. Two meetings were held by the board.

MORRIS COUNTY—*Continued.*

## PASSAIC TOWNSHIP.

MEMBERS AND OFFICERS—John Vador, Charles B. Frost, Samuel Ortman, F. C. Jones, M.D.; J. A. Harvey, Assessor and Secretary, Stirling.

Population, census 1895, 1,843; area, 21,322 acres; number of births reported, 8; number of deaths reported, 26; number of deaths under one year, 3.

## PEQUANNOCK.

MEMBERS AND OFFICERS—A. V. G. Van Zann, President, Pompton Plains; Charles V. D. Romont, Pompton Plains; John De Motte, Pompton Plains; James J. Mander-ville, Pequannock; Oscar Vanderhoff, Butler; Robert C. Yetty, Assessor and Secretary, Butler.

Population, census 1895, 8,166; area, 23,537 acres; number of births reported, 35; number of deaths reported, 20; number of deaths under one year, 2.

## BOROUGH OF PORT ORAM.

MEMBERS AND OFFICERS—H. W. Kice, M.D., President; R. F. Oram, Jr., J. J. Langdon; A. M. Ryan, Secretary.

Population, census 1895, 2,300; area, 2,240 acres. One case of diphtheria and one case of scarlet fever occurred. Five meetings were held. Five complaints were made and the nuisances were abated.

## ROCKAWAY BOROUGH.

MEMBERS AND OFFICERS—John Norris, President; George S. Dearborn, M.D., Samuel C. Crook, David C. Berry, Mahlon Hoagland, Jr.; William May, Secretary. All of Rockaway.

Population, census 1895, 1,334; area, 640 acres. One case of diphtheria occurred in the borough. Three meetings were held. A public water-supply has been introduced.

## MORRIS COUNTY—Continued.

## ROCKAWAY TOWNSHIP.

MEMBERS AND OFFICERS—C. C. De Hart, President, Rockaway; Thomas Heslin, Hibernia; Morris Fox, Rockaway; John Finnegan, Jr., Assessor and Secretary, Mt. Hope; F. W. Flagg, M.D., Inspector, Rockaway.

Population, census 1895, 4,461; area, 40,537 acres; number of births, 90; number of deaths, 103; number of deaths under one year, 36. Four cases of scarlet fever, with 1 death, and 4 cases of typhoid fever, attended by 1 death, occurred in the township. Four meetings were held during the year.

## ROXBURY TOWNSHIP.

MEMBERS AND OFFICERS—George Gillig, President, Succasunna; Joseph McConnell, Port Morris; Theodore F. King, Ledgewood; Frank Flowers, Assessor and Secretary, Landing; Elmer King, Attorney, Netcong.

Population, census 1895, 2,189; area, 15,516 acres; number of births reported, 72; number of deaths reported, 54; number of deaths under one year, 14. The following contagious diseases were reported during the year: Fifteen cases of diphtheria, 5 deaths; 9 cases of scarlet fever, and 1 fatal case of typhoid fever. Several meetings of the board were held.

## WASHINGTON TOWNSHIP.

MEMBERS AND OFFICERS—G. T. Welsh, President, German Valley; William South, Schooley's Mountain; E. B. Sutton, Parker; Joseph R. Farrow, M.D., German Valley; H. W. Dufford, Secretary, German Valley; William A. Flock, Assessor, Schooley's Mountain.

Population, census 1895, 2,278; area, 28,596 acres; number of births reported, 33; number of deaths reported, 29; number of deaths under one year, 6. A few isolated cases of scarlet fever occurred during the year. Meetings of the board are held upon call of the president.

## OCEAN COUNTY.

## BOROUGH OF BAY HEAD.

MEMBERS AND OFFICERS—A. S. Pennington, President; F. B. Pearce, C. R. Priest, George Nunemaker, B. F. Hawley, M.D.; Julius Foster, Secretary.

## BERKELEY TOWNSHIP.

MEMBERS AND OFFICERS—Thomas J. Harvey, Bayville; William H. Potter, Bayville; Peter E. Runyon, Toms River; William E. Lawrence, Secretary, Bayville; Devine Butler, Assessor, Bayville.

Population, census 1895, 737; area, 37,480 acres; number of births reported, 12; number of deaths reported, 12; number of deaths under one year, 1.

## DOVER TOWNSHIP.

MEMBERS AND OFFICERS—Adolph Ernst, President; James J. McKelvey, John Tilton, R. L. Disbrow, M.D.; Thomas B. Irons, Secretary; A. C. Martin, Attorney. All of Toms River.

Population, census 1895, 2,580; area, 35,669 acres; number of births reported, 42; number of deaths reported, 47; number of deaths under one year, 5. Three cases of typhoid fever were reported. Eight meetings were held; four complaints received; four nuisances were abated.

## EAGLESWOOD TOWNSHIP.

MEMBERS AND OFFICERS—John F. Holman, President; J. C. W. Parsons, J. W. Salmon, L. B. Palmer, M.D.; Eugene F. Cranmer, Assessor and Secretary.

Population, census 1895, 589; area, 22,569 acres; number of births reported, 16; number of deaths reported, 10; number of deaths under one year, 3.

OCEAN COUNTY—*Continued.*

## BOROUGH OF ISLAND HEIGHTS.

MEMBERS AND OFFICERS—M. F. Middleton, M.D., President; Ag. Korndorfer, M.D., Henry Wooten, Morris Hollock, William T. McKaig; William A. Parker, Secretary; D. B. Parker, Inspector; Thomas Middleton, Attorney.

Population, census 1895, 246. Seven meetings of the board were held. One nuisance was abated.

## LACEY TOWNSHIP.

MEMBERS AND OFFICERS—S. G. Wilbert, President; George Frazee, B. F. Holmes; B. F. Matthews, Assessor and Secretary; D. W. Blake, M.D., Inspector. All of Forked River.

Population, census 1895, 759; area, 68,807 acres; number of births, 6; number of deaths, 12; number of deaths under one year, 5. Seven cases of diphtheria occurred, one death; number of houses infected, two. The disease was traced to an infected house outside the township limits. During this outbreak of diphtheria the schools were closed by the board of education upon request the board of health, and the school-rooms were disinfected. Only one formal meeting of the board of health was held.

## LAKEWOOD TOWNSHIP.

MEMBERS AND OFFICERS—A. S. Larrabee, George Matthews, John Sherman, H. H. Cate, M.D.; John Peters, Secretary; R. B. Robbins, Assessor and Inspector. All of Lakewood.

Population, census 1895, 2,201; area, 15,117 acres; number of births reported, 54; number of deaths reported, 45; number of deaths under one year, 8. Three meetings were held by the board during the year. Two complaints were received, and two nuisances abated. The cutting and sale of ice will be controlled by the board in future.

## LITTLE EGG HARBOR TOWNSHIP.

MEMBERS AND OFFICERS—Joseph J. Smith, President; Thomas W. Kelly, Clarence Ireland; Alfred Palmer, Assessor; Theodore T. Price, M.D., Secretary. All of Tuckerton.

OCEAN COUNTY—*Continued.*

Population, census 1895, 1,821; area, 48,195 acres; number of births reported, 45; number of deaths reported, 31; number of deaths under one year, 7. One complaint was received, and, upon investigation, it was found that no nuisance existed.

## OCEAN TOWNSHIP.

MEMBERS AND OFFICERS—Charles F. Jones, President; Elvin Penn; William B. Wilkins, Inspector; J. H. Wilkins, Assessor and Secretary. All of Waretown.

Population, census 1895, 526; area, 21,719 acres; number of births reported, 10; number of deaths reported, 7; number of deaths under one year, 3.

## PLUMSTEAD TOWNSHIP.

MEMBERS AND OFFICERS—George W. Ivins, Jr., President, New Egypt; Elmer Cowperthwaite, New Egypt; Dayton Hopkins, Hornerstown; Charles E. Woodward, M.D., New Egypt; Daniel W. Busson, Assessor and Secretary, New Egypt.

Population, census 1895, 1,288; area, 25,722 acres; number of births reported, 11; number of deaths reported, 17; number of deaths under one year, 2. Five cases of diphtheria, 3 of which were fatal; 7 cases of scarlet fever and 1 case of typhoid fever, were reported. One meeting was held by the board. Two nuisances were reported, both of which were abated. Hog cholera appeared in the township, and eight of these animals were killed by order of the board, to limit the spread of the disease.

## STAFFORD TOWNSHIP.

MEMBERS AND OFFICERS—J. L. Lane, M.D., President, Manahawkin; C. H. Cramer, Manahawkin; Thomas H. Letts, Manahawkin; George A. Cramer, Cedar Run; John B. Courtney, Assessor and Secretary, Manahawkin.

Population, census 1895, 1,100; area, 35,679 acres; number of births, 18; number of deaths, 14; number of deaths under one year, 4. One meeting was held by the board during the year. One death from tetanus, due to an accident, occurred.

## OCEAN COUNTY—Continued.

## UNION TOWNSHIP.

MEMBERS AND OFFICERS—Edmund Bennett, M.D., President; Joseph A. Pharo, George H. Vannote, John R. King; E. R. Wills, Assessor and Secretary. All of Barnegat.

Population, census 1895, 1,053; area, 23,686 acres; number of births reported, 22; number of deaths reported, 15; number of deaths under one year, 3. Six cases of scarlet fever and four of typhoid fever were reported. The board held two meetings.

## PASSAIC COUNTY.

## ACQUACKANONK TOWNSHIP.

MEMBERS AND OFFICERS—Theodore S. Perry, President, Paterson; Hiram Keasler, Nutley; Joseph P. Hamil, Paterson; William H. Hofmeister, Nutley; Richard A. Westervelt, Clifton; Richard Berry, Assessor and Secretary, Clifton; Robert I. Hooper, Attorney, Paterson.

Population, census 1895, 3,598; area, 7,256 acres; total number of births reported, 53; total number of deaths reported, 43; number of deaths under one year, 8. No infectious disease occurred during the year. Four meetings have been held. Complaints in the case of two nuisances were made, and in both instances the conditions complained of were improved.

## LITTLE FALLS TOWNSHIP.

MEMBERS AND OFFICERS—H. L. Crane, Little Falls; George McKennon, Little Falls; C. H. Booth, Little Falls; J. H. Francisco, Little Falls; George Jackson, Little Falls; R. W. Furbeck, Assessor and Secretary, Little Falls; M. J. Synnot, M.D., Inspector; Eugene Emley, Attorney, Paterson.

Population, census 1895, 2,410; area, 3,715 acres; number of births reported, 65; number of deaths reported, 43; number of deaths under one year, 9. The board received reports of the following communicable diseases: Diphtheria, 12; membranous croup, 2; scarlet fever, 5; typhoid fever, 2. Three deaths occurred from diphtheria and one death from scarlet fever. Eight meetings were held and ten formal complaints were received.

## PASSAIC COUNTY—Continued.

## MANCHESTER TOWNSHIP.

MEMBERS AND OFFICERS—Adrain Struyk, President, Haledon; Adam Vreeland, North Paterson; William D. Wilson, Little Falls; Joseph Graham, Haledon; Gilbert McDaniels, Haledon; William D. Berdan, Assessor and Secretary, Paterson; Sylvester Utter, M.D., Inspector, North Paterson; Leonard J. Tynan, Attorney, Paterson.

Population, census 1895, 4,993; area, 6,998 acres; number of births reported, 191; number of deaths reported, 80; number of deaths under one year, 28. Twelve cases of diphtheria, seven of scarlet fever and five of typhoid fever were reported. Twelve meetings were held by the board. Seven complaints were received concerning unsanitary conditions. New ordinances were adopted by the board during the year.

## CITY OF PASSAIC.

MEMBERS AND OFFICERS—A. W. Van Riper, President; P. J. Delaney, J. J. Radcliffe, F. R. Low, Charles Denholm; G. J. Van Schott, M.D., Inspector; W. N. Kipp, Attorney; A. H. Smith, Secretary.

Population, census 1895, 17,894; area, 2,074 acres; number of births reported, 632; number of deaths reported, 482; number of deaths under one year, 174. Communicable diseases were reported as follows: Diphtheria, 161, attended by 20 deaths; scarlet fever, 30 cases, 1 death; typhoid fever, 7 cases, 3 deaths; measles, 109 cases, no deaths. Fifteen meetings were held. Forty complaints were received and thirty-eight nuisances were abated. One suit was brought by the board for violation of the plumbing ordinance. Judgment was rendered for the board and a penalty of \$25 was imposed.

## CITY OF PATERSON.

MEMBERS AND OFFICERS—Theodore Y. Kinne, M.D., President; John L. Leal, M.D., Andrew F. McBride, M.D., Thomas L. Paton, M.D., Isaac H. Voorhis, Esq., Thomas Ryle, Esq., John T. Pollitt, Esq. Officers—John L. Leal, M.D., Health Officer; James W. Smith, M.D., Assistant Health Officer; Isaac H. Voorhis, Treasurer; Foster Freeman, Counsel; John T. Pollitt, Registrar of Vital Statistics; William H. McDonald, Plumbing Inspector; James Fitzpatrick, Sanitary Officer; James Powers McNair, Secretary.



## PASSAIC COUNTY—Continued.

Population, census 1895, 97,344; number of births reported, 2,039; number of deaths reported, 1,963; number of deaths under one year, 365.

## BOROUGH OF POMPTON LAKES.

MEMBERS AND OFFICERS—W. S. Colfax, M.D., F. S. Wilson, Lemuel Van Ness, J. C. Morgan, M.D.; W. B. Longyear, Secretary.

Population, census 1895, 675; area, 1,880 acres. One case of scarlet fever was reported. No meetings were held by the board. Two complaints were received and the nuisances were abated in both instances. Two deaths from accident occurred; one from drowning and one from bicycle injury.

## POMPTON TOWNSHIP.

MEMBERS AND OFFICERS—John F. Cisco, President, Butler; D. A. Wheeler, Erskine; Charles Sigler, Wanaque; G. Decker, Wanaque; S. A. Pellington, Midvale; J. V. Beam, Assessor and Secretary, Wanaque.

Population, census 1895, 2,045; area, 33,206 acres; number of births reported, 34; number of deaths reported, 20; number of deaths under one year, 4. One meeting was held by the board.

## WAYNE TOWNSHIP.

MEMBERS AND OFFICERS—George W. Colfax, President, Pompton; George Van Houten, Paterson; George Van Ness, Wayne; William Birchenough, Paterson; Gideon Merelis, Paterson; G. V. Zelif, Assessor and Secretary, Paterson; Eugene Emley, Attorney, Paterson.

Population, census 1895, 2,099; area, 17,107 acres; number of births reported, 27; number of deaths reported, 26; number of deaths under one year, 10. Two meetings were held.

## PASSAIC COUNTY—Continued.

## WEST MILFORD TOWNSHIP.

MEMBERS AND OFFICERS—W. W. Eckhart, President, Newfoundland; T. P. Terhune, West Milford; John R. Freeland, Upper Macopin; D. G. Vanderhoff, Oak Ridge; Charles H. Thorn, West Milford; R. G. Maines, M.D., West Milford; Celestine Tintle, Assessor and Secretary, Echo Lake; Joseph Schulster, Inspector, Echo Lake.

Population, census 1895, 2,169; area, 51,356 acres; number of births reported, 13; number of deaths reported, 24; number of deaths under one year, 9. Physicians in this township do not report cases of communicable diseases. One meeting was held by the board.

## SALEM COUNTY.

## BOROUGH OF ELMER.

MEMBERS AND OFFICERS—J. R. Edwards, President; A. B. Woodruff, M.D., I. P. Cheeseman, M.D., F. Wentzel, Oliver Hughes; Eugene Boetwick, Secretary.

Population, census 1895, 1,145.

## LOWER PENN'S NECK TOWNSHIP.

MEMBERS AND OFFICERS—R. D. Batten, President; David Dixon, Hance Jaquette, W. H. James, M.D.; William Hannah, Secretary; John G. Mitchell, Assessor. All of Penseville.

Population, census 1895, 1,350; area, 15,408 acres; number of births reported, 15; number of deaths reported, 26; number of deaths under one year, 7.

## MANNINGTON TOWNSHIP.

MEMBERS AND OFFICERS—Elmer H. Smith, President; S. Preston Carpenter, Samuel T. Lippincott; Jonathan B. Grier, Assessor and Secretary.

Population, census 1895, 1,931; area, 24,526 acres; number of births, 15; number of deaths, 34; number of deaths under year, 7. No local records are kept of marriages, births and deaths. Nuisances, when reported to the board, are investigated.

## SALEM COUNTY—Continued.

## OLDMANS TOWNSHIP.

MEMBERS AND OFFICERS—Levi Justice, Assessor and President, Pedricktown; John Richards, Pedricktown; Wesley Hewitt, Pedricktown; Joseph Roberts, Auburn; H. T. Johnson, M.D., Pedricktown.

Population, census 1895, 1,423; area, 13,610 acres; number of births, 23; number of deaths, 18; number of deaths under one year, 4. One case of diphtheria and one case of typhoid fever were reported to the board, both of which proved fatal. The board held one meeting.

## BOROUGH OF PENNSGROVE.

MEMBERS AND OFFICERS—Henry M. Flanagan, M.D., President; Walter Springer, George Kille, Warren English; Henry E. Crompton, Secretary.

Population, census 1895, 1,497. Contagious diseases are not satisfactorily reported in this borough, and the president of the local board also informs us that certificates of births are not furnished in accordance with the requirements of the law.

## PILESGROVE TOWNSHIP.

MEMBERS AND OFFICERS—John G. Borton, President; Edgar C. Moore, D. W. C. Hinchman, L. H. Miller, M.D.; D. F. Davis, Assessor and Secretary, Woodstown.

Population, census 1895, 1,779; area, 23,708 acres; number of births reported, 48; number of deaths reported, 68; number of deaths under one year, 9.

## QUINTON TOWNSHIP.

MEMBERS AND OFFICERS—Josiah T. Harris, President; Watson Davis, John G. Fouser, W. T. Good, M.D.; Charles H. Fox, Secretary; John F. Anderson, Jr., Assessor. All of Quinton.

Population, census 1895, 1,317; area, 15,871 acres; number of births reported, 17; number of deaths reported, 21; number of deaths under one year, 6. The board received reports of four cases of mem-

## SALEM COUNTY—Continued.

braneous croup, with three deaths; one case of diphtheria; one case of scarlet fever, and ten cases of typhoid fever. The typhoid fever cases were traced to polluted well water. One meeting was held.

## CITY OF SALEM.

MEMBERS AND OFFICERS—Louis Hoelzel, President; Thomas Hewes, J. F. Sinnickson; Clinton Bowen, Secretary; Austin T. Walton, Inspector.

Population, census 1895, 6,337; area, 1,832 acres; number of births reported, 82; number of deaths reported, 111; number of deaths under one year, 26.

## UPPER PENN'S NECK TOWNSHIP.

MEMBERS AND OFFICERS—J. M. Bevis, President; J. M. Summerell, M.D., Joseph E. Clark, James Hutchinson; George W. Hewitt, Assessor and Secretary. All of Pennsgrove.

Population, census 1895, 803; area, 11,973 acres; number of births reported 41; number of deaths reported, 31; number of deaths under one year, 10.

## UPPER PITTSGROVE TOWNSHIP.

MEMBERS AND OFFICERS—J. F. Newkirk, President, Elmer; W. Du Bois, Daretown; Henry Coombs, Elmer; George M. Fitch, M.D., Daretown; J. M. Gray, Assessor and Secretary, Pilesgrove.

Population, census 1895, 1,741; area, 22,960 acres; number of births reported, 13; number of deaths reported, 31; number of deaths under one year, 4. Two cases of typhoid fever occurred. One meeting was held.

## SOMERSET COUNTY.

## BEDMINSTER TOWNSHIP.

MEMBERS AND OFFICERS—William P. Sutphin, President, Bedminster; Robert B. Nevius, Bedminster; John J. Poulson, North Branch; Henry L. Kennedy, Secretary and Assessor, Gladstone; E. B. Farrow, Inspector, Peapack; J. B. Beekman, Inspector, Pluckamin.

Population, census of 1895, 1,789; area, 17,292 acres; number of births reported, 35; deaths, 38; deaths under one year, 5. But one meeting of the board has been held during the year. Three nuisances were reported to the board, all of which were abated.

## BERNARDS TOWNSHIP.

MEMBERS AND OFFICERS—J. W. Smith, Bernardsville; John A. Layton, Far Hills; E. H. Schley, Bernardsville; S. C. Sutphen, M.D., Bernardsville; Frank E. De Coster, Assessor and Secretary, Basking Ridge.

Population, census 1895, 3,500; area, 26,497 acres; number of births reported, 30; number of deaths reported, 51; number of deaths under one year, 8. Four meetings were held by the board. Several minor complaints were received and improvement was secured in each case.

## BOROUGH OF BOUND BROOK.

MEMBERS AND OFFICERS—J. B. Coddington, President; C. R. P. Fisher, M.D., William E. Messimer; W. S. Negus, Secretary; Charles McNabb, Inspector; Jerald R. Cushman, Attorney.

Population, census 1895, 2,630; area, 640 acres. Diphtheria, 5 cases; scarlet fever, 10 cases, were reported to the board. Sixteen meetings were held. The board recommends that filters shall be provided for the public water-supply. Fifteen nuisances were abated. A regular house-to-house inspection is made each year in the month of May and a record of the same is kept.

## SOMERSET COUNTY—Continued.

## BRANCHBURG TOWNSHIP.

MEMBERS AND OFFICERS—H. S. Van Fleet, Readington; John T. Engle, White House; Ellsworth Brokaw, South Branch; Adonis Nelson, M.D., Neshanic Station; L. T. Schenck, Assessor and Secretary, Readington; L. H. Schenck, Attorney, Neshanic Station.

Population, census 1895, 1,074; area, 13,032 acres; number of births, 12; number of deaths, 16; number of deaths under one year, 1. One meeting of the board was held during the year. Hog cholera prevailed to some extent, and also a communicable disease occurred among poultry.

## BRIDGEWATER TOWNSHIP.

MEMBERS AND OFFICERS—Peter Gulick, President, Raritan; William Hardgrove, Somerville; J. H. Bartle, Martinsville; A. L. Stillwell, M.D., Somerville; C. L. Voorhees, Secretary, Somerville.

Population, census 1895, 1,700; area, 28,413 acres; number of births reported, 237; number of deaths reported, 184; number of deaths under one year, 43. The following communicable diseases were reported: Typhoid fever, 3; diphtheria, 2; scarlet fever, 8. One meeting was held by the board.

## HILLSBORO TOWNSHIP.

MEMBERS AND OFFICERS—Frederick Wyckoff, President, Franklin; John French, Millstone; Peter Hoff, Montgomery; W. H. Merrill, M.D., Secretary, South Branch; A. D. Baird, Assessor and Inspector, Frankfort; J. J. Bergen, Attorney, Somerville.

Population, census 1895, 2,847; area, 37,268 acres; number of births reported, 26; number of deaths reported, 42; number of deaths under one year, 7. The following communicable diseases occurred during the year: Scarlet fever, 3; typhoid fever, 3; no deaths. Two meetings were held by the board during the year.

## SOMERSET COUNTY—Continued.

## MONTGOMERY TOWNSHIP.

MEMBERS AND OFFICERS—Edwin S Voorhees, Rocky Hill; E. C. Taggart, Griggstown; J. Henry Stout, Stoutsburg; John S Hoagland, Secretary, Griggstown; A. B. Mosher, M D, Inspector, Griggstown; James L. Griggs, Attorney, Somerville.

Population, census 1895, 1,644; area, 21,168 acres; number of births reported, 11; number of deaths reported, 19; number of deaths under one year, 4. Two meetings were held by the board. Cases of communicable diseases are not reported by physicians in this township. Two nuisances were abated by the board.

## BOROUGH OF NORTH PLAINFIELD.

MEMBERS AND OFFICERS—Andrew Love, President; Frank Curtis, D. C. Adams, M.D., N. B. Smalley; Rev. W. E. Honeyman, Secretary; W. N. Pangborn, Inspector; Charles A. Reed, Attorney.

Population, census 1895, 4,254; number of births reported, 76; number of deaths reported, 67; number of deaths under one year, 16. Four cases of diphtheria, with 1 death; 39 cases of scarlet fever, with 1 death, and 5 cases of typhoid fever, were reported. Nine meetings were held and 107 nuisances were abated. Several lawsuits have been brought by the board, and in each case the course of the board has been sustained and the nuisance abated. The secretary writes as follows: "Our board has had a busy year and has accomplished more than ever before."

## NORTH PLAINFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Theo. Lustrsen, President, Plainfield; William H Smith, Plainfield; William M. Demler, Plainfield; Frank Molins, Plainfield; Charles Sebring, Bound Brook; G. Smalley, Dunellen; Robert M. Clark, Secretary, Plainfield; George N. Steward, Inspector, Plainfield; Benjamin Clark, Attorney, Scotch Plains.

Population, census 1895, 634; area, 5,324 acres. One case of scarlet fever was reported. The board held one meeting. At the last meeting of the board it was ordered that inspection of dairies shall be regularly performed in the future.

## SOMERSET COUNTY—Continued.

## BOROUGH OF RARITAN.

MEMBERS AND OFFICERS—W. H. De Hart, President; J. S. Hecht, M.D., J. Cooper, J. M. Weaver; William Killiger, Secretary; Steele & Meehan, Attorneys.

Population, census 1895, 2,693; number of births reported, 29; number of deaths reported, 51; number of deaths under one year, 15. The following cases of communicable diseases were reported: Diphtheria, 9, 2 deaths; membranous croup, 2 fatal cases; scarlet fever, 4 cases; typhoid fever, 2 cases, one of which caused death. Monthly meetings are held by the board. During the year both the sewer and water mains were extended. One suit was brought by the board for the violation of an ordinance which forbids the slaughtering of animals without a permit. A judgment was rendered against the defendant, and the fine and costs were collected.

## WARREN TOWNSHIP.

MEMBERS AND OFFICERS—John D. Bornmann, Warrentown; W. H. Rogers, Plainfield; Thomas C. Bird, Galia; Peter Newmiller, Secretary and Assessor, Warrentown.

Population, census 1895, 1,086; area, 12,402 acres; number of births reported, 18; number of deaths reported, 10; number of deaths under one year, 2. One meeting was held.

## SUSSEX COUNTY.

## ANDOVER TOWNSHIP.

MEMBERS AND OFFICERS—Charles M. Roof, Newton; William M. Slater, Newton; B. K. Stiff, Andover; S B Straley, M.D., Andover; G. C. Cook, Assessor and Secretary, Andover.

Population, census 1895, 1,072; area, 15,743 acres; number of births reported, 16; number of deaths reported, 11; number of deaths under one year, 3. Contagious diseases reported were as follows: Diphtheria, 3, 1 death. In one of these cases the source

SUSSEX COUNTY—*Continued.*

of infection was traced to Warren county. An ordinance covering all of the usual and ordinary matters controlled under the health laws was passed July 14th, 1896. In one case of nuisance legal action was taken under the ordinance and the penalty collected.

## BYRAM TOWNSHIP.

MEMBERS AND OFFICERS—R. S. Slight, Theo. Collins, G. P. Hart; E. O. Valentine, Assessor and Secretary; C. K. Davison, Inspector. All of Stanhope.

Population, census 1895, 1,218; area, 23,199 acres; number of births reported, 14; number of deaths reported, 14; number of deaths under one year, 2. Three cases of scarlet fever occurred. No meetings were held by the board. One nuisance was reported and abated.

## FRANKFORD TOWNSHIP.

MEMBERS AND OFFICERS—Victor Compton, President, Branchville; L. Clark, Branchville; M. F. Lantz, Augusta; E. S. Dalrymple, Branchville; George Phillips, Assessor and Secretary, Branchville.

Population, census 1895, 1,430; area, 23,366 acres; number of births, 24; number of deaths, 22; number of deaths under one year, 5. No contagious diseases were reported. The board held no meetings.

## HAMPTON TOWNSHIP.

MEMBERS AND OFFICERS—John H. Williamson, President, Branchville; John W. Thompson, Blair; Elmer Case, Halsey; Frank Emmans, Assessor and Secretary, Newton.

Population, census 1895, 859; area, 19,050 acres; number of births reported, 7; number of deaths reported, 5.

SUSSEX COUNTY—*Continued.*

## HARDYSTON TOWNSHIP.

MEMBERS AND OFFICERS—W. B. Pollard, President; John P. Wilson, J. B. Pellet, M.D.; W. H. Ingersoll, Secretary; Smith Simpson, Assessor. All of Hamburg.

Population, census 1895, 2,531; area, 24,794 acres; number of births reported, 3; number of deaths reported, 37; number of deaths under one year, 9. Several nuisances have been complained of and abated.

## LAFAYETTE TOWNSHIP.

MEMBERS AND OFFICERS—Samuel Warbasse, President; Edward Mabie, John D. Ackerson; John Demarest, Assessor and Secretary. All of Lafayette.

Population, census 1895, 703; area, 11,677 acres; number of births reported, 8; number of deaths reported, 11.

## MONTAGUE TOWNSHIP.

MEMBERS AND OFFICERS—Loren T. Cole, Tri-States, N. Y.; Joseph S. Hornbeck, Montague; George N. Cole, Assessor and Secretary, Montague.

Population, census 1895, 858; area, 28,522 acres; number of births reported, 5; number of deaths reported, 15; number of deaths under one year, 2.

## TOWN OF NEWTON.

MEMBERS AND OFFICERS—Shepard Voorhees, M.D., President; Charles S. Steel, Lewis J. Martin, James Northrup, J. L. Hallock; George Hardin, Assessor and Secretary.

Population, census 1895, 3,426; area, 1,760 acres; number of births reported, 30; number of deaths reported, 39; number of deaths under one year, 4. Seven cases of diphtheria, one of membranous croup, forty-three of scarlet fever, and ten of typhoid fever, were reported. Nine meetings were held. Thirteen nuisances were reported, ten of which were abated. The water mains were considerably extended.

SUSSEX COUNTY—*Continued.*

## SPARTA TOWNSHIP.

MEMBERS AND OFFICERS—T. H. Andrus, M.D., President, Sparta; W. H. Beatty, Sparta; James T. Dolan, Ogdensburg; Sydney S. Bryon, Assessor and Secretary, Houses.

Population, census 1895, 1,970; area, 27,029 acres; number of births reported, 10; number of deaths reported, 18; number of deaths under one year, 4.

## STILLWATER TOWNSHIP.

MEMBERS AND OFFICERS—E. T. Moore, President, Stillwater; J. A. Wintermute, Jr., Middleville; William E. Titman, Swartswood; J. F. McCloughlan, M.D., Swartswood; A. C. Hough, Assessor and Secretary, Middleville.

Population, census 1895, 1,500; area, 24,073 acres; number of births reported, 8; number of deaths reported, 4; number of deaths under one year, 1. Infectious diseases occurred as follows: Diphtheria, 2; membranous croup, 1, 1 death; typhoid fever, 1, 1 death. One case of diphtheria was traced to an infection introduced from Canada. The premises in which these diseases occurred were found to be unsanitary, and measures were taken by the board which resulted in prompt improvement. Each case was reported to the school authorities, and no communication between the infected families and schools was permitted. One regular meeting has been held by the board during the year.

## VERNON TOWNSHIP.

MEMBERS AND OFFICERS—D. R. Forgeron, President, Stockholm; James Steadworthy, Rusling Rhodes; Carlos Allen, M.D., Vernon; Abram Van Winkle, Assessor, Glenwood.

Population, census 1895, 1,837; area, 44,189 acres; number of births reported, 19; number of deaths reported, 25; number of deaths under one year, 6.

SUSSEX COUNTY—*Continued.*

## WANTAGE TOWNSHIP.

MEMBERS AND OFFICERS—Brice Roy, President; L. J. Martin; S. M. Parcel, Assessor and Secretary; Jonathan Coykendall, Inspector. All of Deckertown.

Population, census 1895, 2,362; area, 43,628 acres; number of births reported, 22; number of deaths reported, 42; number of deaths under one year, 5. One meeting was held by the board.

## UNION COUNTY.

## CLARK TOWNSHIP.

MEMBERS AND OFFICERS—Benjamin King, President, Picton; Edward Mays, Rahway; I. Terhune, Rahway; W. E. Cladek, M.D., Rahway; F. P. Bullman, Assessor and Secretary, Picton.

Population, census 1895, 384; area, 3,036 acres; number of births reported, 3; number of deaths reported, 2. One case of scarlet fever was reported during the year. The board held one meeting.

## CRANFORD TOWNSHIP.

MEMBERS AND OFFICERS—J. C. Hunt, President; N. Foster, James E. Hibson, J. H. Severance, Philip Jahn, Joseph K. McConnell, M.D., Edward S. Crane. All of Cranford. Frank Bergen, Attorney, Elizabeth.

Population, census 1895, 2,145; area, 3,736 acres; number of births reported, 13; number of deaths reported, 32; number of deaths under one year, 8. Ten cases of scarlet fever and one case of typhoid fever were reported. Four meetings were held by the board. The sewer has been extended to tide-water during the past year, and house connections are now being made. Twelve nuisances were reported to the board, all of which were abated.

UNION COUNTY—*Continued.*

## CITY OF ELIZABETH.

MEMBERS AND OFFICERS—John W. Whelan, President; W. A. M. Mack, M.D., N. L. Wilson, M.D., T. F. Barnett, M.D., John J. Donahue; James J. Manning, Secretary; E. G. Putnam, Inspector; C. A. Swift, Attorney.

Population, census 1895, 43,834; area, 8,295 acres; number of births reported, 938; number of deaths reported, 794; number of deaths under one year, 255. The following cases of communicable diseases were reported: Diphtheria, 211, accompanied by 16 deaths; scarlet fever, 184, with 5 deaths; typhoid fever, 10, with 2 deaths. Eleven meetings were held by the board. The sewers have been considerably extended and the water-supply improved by the addition of water from the driven wells in Morris avenue. Nuisances reported, 333; nuisances abated, 328. Three cases of typhoid fever were traced to polluted wells, and the wells were closed.

## BOROUGH OF FANWOOD.

MEMBERS AND OFFICERS—F. W. Wescott, M.D., President; William E. Gibbs, Edward Austin; George F. Carter, Secretary; B. P. Hall, Inspector.

Area, 700 acres. One case of scarlet fever was reported. Nine meetings have been held by the board. Ten nuisances have been reported to the board, and in six instances improvement has been secured. The board has been principally engaged in regulating the construction and management of cesspools, and the construction of sewers is strongly urged. An inspection of the dairies in the borough was made in April, 1897. The record shows the number and condition of the cows on each dairy premise, the amount of milk sold, condition of stable and source of the water used in washing cans and utensils and watering the cattle.

## FANWOOD TOWNSHIP.

MEMBERS AND OFFICERS—Thomas Nicholl, President, Scotch Plains; Theodore Buckman, Scotch Plains; William H. Terry, Plainfield; Charles H. French, Assessor and Secretary, Westfield; F. W. Wescott, M.D., Inspector, Fanwood; W. R. Coddington, Attorney, Plainfield.

UNION COUNTY—*Continued.*

Population, 1,600; area, 6,689 acres; total number of births, 25; total number of deaths, 19; number of deaths under one year, 5. The following infectious diseases occurred: Diphtheria, 3; scarlet fever, 1. Two meetings have been held.

## LINDEN TOWNSHIP.

MEMBERS AND OFFICERS—Samuel B. Ridman, Linden; John P. Winans, Linden; Joshua Rose, Linden; Walter Mitchell, Linden; Joseph Bauer, Linden; H. Page, M.D., Rahway; Asa Collins, Secretary, Linden; Milton C. Lowden, Inspector, Linden; John Lowden, Attorney, Elizabeth.

Population, census 1895, 1,061; area, 8,965 acres; number of births reported, 16; number of deaths reported, 24; number of deaths under one year, 6. No cases of contagious diseases were reported. Six meetings have been held by the board.

## NEW PROVIDENCE TOWNSHIP.

MEMBERS AND OFFICERS—William H. Dean, President, Murray Hill; John M. Badgley, New Providence; L. E. Bergmiller, Berkeley Heights; A. M. Cory, M.D., Secretary and Inspector, New Providence; Foster M. Voorhees, Attorney, Elizabeth.

Population, census 1895, 934; area, 6,348 acres; number of births reported, 18; number of deaths reported, 20; number of deaths under one year, 3. Three cases of diphtheria, with 2 deaths, and 3 cases of membranous croup, with 3 deaths, occurred. Four meetings were held during the year. Several complaints were received, in all of which improvement was secured.

## CITY OF PLAINFIELD.

MEMBERS AND OFFICERS—Henry B. Newhall, President; L. W. Serell, Sr., G. W. Endicott, M.D., A. J. Garrett; William H. Murray, M.D., Secretary; William Addis, Sr., Inspector; Craig A. Marsh, Attorney.

## UNION COUNTY—Continued.

Population, census 1895, 16,629; area, 3,791 acres; number of births reported, 291; number of deaths reported, 238; number of deaths under one year, 60. Contagious diseases were reported as follows: Diphtheria, 15 cases, 2 deaths; scarlet fever, 89 cases, 1 death; typhoid fever, 10 cases, 1 death. The cause of the outbreak of scarlet fever was carefully investigated, and some of the cases were traced to an infected milk-supply, as milk sold from a wholesale depot had been handled by parties living on premises where there were cases of scarlet fever. The dairies supplying the city were examined and careful inquiry was made as to any cases of the disease. As the disease had existed in North Plainfield for some time, a portion of the cases must have originated by direct exposure to persons coming from infected houses. A public fete, at which a large number of persons met just previous to the outbreak, will account for some of the cases. The local board of health were very active in taking measures to limit the spread of the disease. Medical inspection of schools was at once adopted, and all houses were strictly quarantined, and after recovery of patients thorough disinfection was practiced. A map, showing the location of infected houses, was made. As a result of the action taken, the number of cases diminished rapidly, and in a short time the epidemic was under control. The reports of contagious diseases are received from physicians with regularity and promptness.

The board has held twenty-six meetings during the year. A number of houses where cesspools were in use have been connected with the sewer system. One accident from gasoline was reported. Several ordinances have been adopted during the year in relation to compulsory sewer connections and the cleansing of cesspools and vaults. House-to-house inspections are made systematically. A few cases of violations of the sanitary code have been prosecuted and convictions secured.

## RAHWAY CITY.

MEMBERS AND OFFICERS—C. B. Holmes, M.D., President; H. Page Hough, M.D., J. M. Randolph, M.D., H. B. Rollinson, D. K. Ryno, M.D.; S. R. Ryno, Secretary; F. J. Mix, Inspector.

## UNION COUNTY—Continued.

Population, census 1895, 7,945; area, 2,582 acres; number of births reported, 97; number of deaths reported, 133; number of deaths under one year, 22. Three cases of diphtheria and two cases of typhoid fever were reported to the board, but the secretary states that physicians do not satisfactorily report cases of communicable diseases, and doubtless many cases, aside from those above referred to, have occurred in this city. The enforcement of the act approved March 22d, 1895, is left by the legislature in the hands of local boards of health, and the public interests in every community demand that prompt returns shall be secured from physicians and others who are required by the law to bring to the notice of the secretary of the board all cases of infectious diseases which are named in the act. Five meetings were held by the board. The municipal authorities have under consideration the construction of a filtration works for purification of the water-supply. The extension of the Cranford sewer has removed a considerable source of pollution of the public water-supply which has heretofore been a cause of some apprehension.

## SUMMIT TOWNSHIP.

MEMBERS AND OFFICERS—George Wilcox, President; Parker W. Page, Charles F. Ward, W. H. Risk, M.D.; John A. Hicks, Assessor and Secretary; William McMans, Inspector.

Population, census 1895, 4,458; area, 3,848 acres; number of births reported, 70; number of deaths reported, 54; number of deaths under one year, 16.

## UNION TOWNSHIP.

MEMBERS AND OFFICERS—John H. Doremus, President, Lyons Farms; William P. Bonnell, Roselle; Daniel H. Beach, Union; D. Hobart Sayre, Assessor and Secretary, Union.

Population, census 1895, 3,412; area, 9,775 acres; number of births, 37; number of deaths, 37; number of deaths under one year, 8. There is no resident physician in this township, and few certificates of births are returned to the assessor, the physicians who attend



UNION COUNTY—*Continued.*

these cases stating, when questioned, that returns are made to the local board of the district in which they reside. This method of making reports deprives the local board of health of the opportunity of learning the vital facts which relate to their locality. Section 12, subsection 7 of the act of March 31st, 1887, authorizes local boards to require that all returns of births, marriages and deaths shall be made to the local officer, and local boards are thus enabled to compel physicians to forward these reports to the local officer. Six meetings have been held by the board during the past year. Several nuisances have been complained of, and all have been abated.

## WESTFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Charles E. Endicott, President; George H. Embree, Christopher W. Harden, Joseph B. Harrison, M.D.; John M. C. Marsh, Assessor and Secretary.

Population, census 1895, 3,753; area, 6,926 acres; number of births reported, 91; number of deaths reported, 55; number of deaths under one year, 15. Several cases of diphtheria occurred; no deaths. All nuisances which have been complained of have been abated.

## WARREN COUNTY.

## ALLAMUCHY.

MEMBERS AND OFFICERS—C. L. Munroe, President, Hackettstown; T. G. Dunlap, Allamuchy; W. H. Young, Hackettstown; J. H. Hobler, Tranquillity; W. H. Wilson, Allamuchy; E. J. Harden, Assessor, Allamuchy.

Population, census 1895, 653; area, 13,166 acres; number of births reported, 4; number of deaths reported, 4; number of deaths under one year, 3. The board met twice during the year. One complaint was received, and the nuisance was abated.

WARREN COUNTY—*Continued.*

## TOWN OF BELVIDERE.

MEMBERS AND OFFICERS—James Belford, Jacob Stone, Thomas Hays; G. W. Cummins, M.D., Secretary.

Population, census 1895, 1,834; area, 863 acres; number of births reported, 35; number of deaths reported, 23; number of deaths under one year, 5. The following communicable diseases were reported: One case of diphtheria, which terminated fatally, and 10 cases of typhoid fever, with 1 death. The infection in the diphtheria case was traced to Phillippeburg, and in four of the typhoid fever cases water from a polluted well was used. The physicians of this town do not promptly report cases of infectious diseases. Ten meetings were held, numerous complaints were received and investigated, and all nuisances which were discovered were abated.

## BLAIRSTOWN TOWNSHIP.

MEMBERS AND OFFICERS—Elmer Kishpaugh, President; William C. Howell, Wesley Eice, H. C. Carhart, M.D.; W. S. Perry, Assessor and Secretary.

Population, census 1895, 1,601; area, 20,363 acres; number of births reported, 35; number of deaths reported, 23; number of deaths under one year, 5.

## FRELINGHUYSEN TOWNSHIP.

MEMBERS AND OFFICERS—George Armstrong, President, Marksboro; William Kerr, Marksboro; John Stickler, Johnsonburg; Frederick Rorback, M.D., Johnsonburg; W. H. Ackerson, Assessor and Secretary.

Population, census 1895, 864; area, 15,206 acres; number of births reported, 8; number of deaths reported, 8; number of deaths under one year, 3. The board has held no meetings.

## GREENWICH TOWNSHIP.

MEMBERS AND OFFICERS—George Hamlen, President, Stewartsville; A. P. Kinney, Stewartsville; A. A. Painter, Shimers; F. P. Curtis, M.D., Stewartsville; William Sherrer, Assessor and Secretary, Bloomsbury.

## WARREN COUNTY—Continued.

Population, census 1895, 886; area, 7,083 acres; number of births reported, 17; number of deaths reported, 11; number of deaths under one year, 3. One nuisance was abated by the board.

## TOWN OF HACKETTSTOWN.

MEMBERS AND OFFICERS—Jacob H. Beatty, President; James Tamblin, John S. Cook, M.D., A. C. Van Syckle, M.D., A. W. Cutter, R. G. Clark, Thomas Nolan; O. A. Mattison, Secretary; J. M. Everett, Inspector.

Population, census 1895, 2,594; area, 1,897 acres; number of births reported, 36; number of deaths reported, 32; number of deaths under one year, 5. Reports from two cases of scarlet fever were received. Twelve meetings were held.

## HARDWICK TOWNSHIP.

MEMBERS AND OFFICERS—William C. Wildrick, Marksboro; Benjamin B. Linaberry, Blairstown; David B. Teel, Blairstown.

Population, census 1895, 470; area, 11,304 acres; number of births reported, 4; number of deaths reported, 4.

## HARMONY TOWNSHIP.

MEMBERS AND OFFICERS—Peter E. Cole, President, Montana; J. W. Cline, Harmony; J. W. Dewitt, Inspector, Harmony; Cornelius Pittenger, Assessor and Secretary, Harmony.

Population, census 1895, 1,110; area, 15,567 acres; number of births, 20; number of deaths, 12; number of deaths under one year, 1.

## INDEPENDENCE TOWNSHIP.

MEMBERS AND OFFICERS—F. W. Haggerty, President, Vienna; John W. Lindaberry, Hackettstown; J. D. Shoemaker, Vienna; G. F. Martenis, Danville; W. J. Barker, Assessor and Secretary, Vienna.

## WARREN COUNTY—Continued.

Population, census 1895, 960; area, 12,905 acres; number of births reported, 9; number of deaths reported, 8; number of deaths under one year, 2.

## KNOWLTON TOWNSHIP.

MEMBERS AND OFFICERS—Peter J. Young, President, Hainesburg; Lewis Brands, Polkville; George De Witt, Columbia; Wm. B. Moore, Assessor and Secretary.

Population, census 1895, 1,294; area, 16,417 acres; number of births reported, 15; number of deaths reported, 16; number of deaths under one year, 1. Four cases of typhoid fever occurred. Two meetings were held.

## MANSFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Jacob Beatty, President, Port Murray; Frederick Dellicker, Rockport; H. S. Funk, M.D., Port Murray; Silas Shields, Port Colden; James Beatty, Secretary and Assessor, Stephensburg.

Population, census 1895, 1,368; area, 19,414 acres; number of births reported, 7; number of deaths reported, 32; number of deaths under one year, 1. One fatal case of diphtheria occurred. One meeting was held by the board.

## OXFORD TOWNSHIP.

MEMBERS AND OFFICERS—E. T. Smith, Bridgeville; George Wildrick, Buttville; Depue Roseberry, Belvidere; John Sohner, Oxford; L. B. Hoagland, M.D., Secretary, Oxford.

Population, census 1895, 2,040; area, 21,796 acres; number of births reported, 66; number of deaths reported, 62; number of deaths under one year, 15. One case of diphtheria was reported, which terminated fatally. Five cases of scarlet fever, no deaths; seven cases of typhoid fever, two deaths. One meeting of the board was held.

## CITY OF PHILLIPSBURG.

MEMBERS AND OFFICERS—E. C. Parker, President; J. E. Force, J. C. Perdoe, Charles Creveling, M.D., Frank Kneedler; Daniel McMullin, Inspector; W. H. Walters, Attorney.

## WARREN COUNTY—Continued.

Population, census 1895, 9,081; area, 759 acres; number of births reported, 157; number of deaths reported, 155; number of deaths under one year, 30. One hundred and fifty cases of diphtheria, with eight deaths; one fatal case of membranous croup, three cases of scarlet fever and two cases of typhoid fever were reported. Monthly meetings were held. One new ordinance was adopted by the board during the year.

## POHATCONG TOWNSHIP.

MEMBERS AND OFFICERS—William Butler, President, Shimers; Warren W. Shener, Springtown; Charles H. Boyer, M.D., Rieglesville; Jacob O. Boyer, Assessor and Secretary, Carpenterville.

Population, census 1895, 1,648; area, 9,476 acres; number of births reported, 33; number of deaths reported, 23; number of deaths under one year, 6.

## BOROUGH OF WASHINGTON.

MEMBERS AND OFFICERS—F. P. McKinstry, M.D., President; William Vannata, George C. Campbell, William Stites, M.D., John Hornbaker; A. J. Craft, Secretary; A. J. Bigler, Inspector.

Population, census 1895, 3,538; area, 1,167 acres. Three cases of diphtheria and six cases of scarlet fever were reported. The physicians of this district are now reporting cases of communicable diseases regularly and promptly. Eight meetings were held, thirty-one complaints received, and all nuisances which were reported were abated. The drainage of the public school buildings is defective, there being no public sewer system in the borough.

## WASHINGTON TOWNSHIP.

MEMBERS AND OFFICERS—Robert G. Bowers, President; William Corvel, Daniel A. Wise, C. B. Smith, M.D.; Samuel Rinehart, Assessor and Secretary.

Population, census 1895, 1,287; area, 11,389 acres.

## LIST OF SANITARY DISTRICTS IN THE STATE OF NEW JERSEY,

With the name and address of the secretary, clerk or other officer to whom correspondence should be addressed, and also the name and address of the registrar of vital statistics.

Representatives of boards are requested to notify the secretary, Dr. Henry Mitchell, if any errors appear in the list of names, and where names are omitted to state the correct name for insertion in its proper place.

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List of Sanitary Districts, Showing Locality and Names of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	POPULATION.		NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF ASSESSOR.	NAME AND ADDRESS OF CLERK OR VITAL STATISTICIAN.
		1890.	1886.			
Pasadena city	Pasadena	18,068	13,891	H. Smith	J. A. Harvey	Fred. A. Parker.
Pasadena township	Pasadena	1,621	1,231	A. Harvey, Sirling	J. A. Harvey	John T. Pollitt.
Paterson borough	Passaic	78,347	97,314	James P. McNair	.....	Barclay Hampton.
Pemberton borough	Morris	816	816	Wm. Dyer	.....	.....
Pennington borough	Morris	1,704	1,704	Chas. K. Yerr	.....	.....
Pennsauken township	Camden	8,990	8,990	Chas. K. Yerr	.....	.....
Pennsauken borough	Camden	1,497	1,497	H. E. Crompton	.....	.....
Pequanock township	Morris	8,664	8,664	Robert C. Getty	.....	.....
Phillipsburg city	Warren	2,899	2,899	Robert C. Getty	.....	.....
Phillipsburg township	Warren	2,899	2,899	Frank Kuebler	.....	.....
Pilesgrove township	Middlesex	1,388	1,388	Chas. E. Kelly	.....	.....
Pilesgrove city	Middlesex	1,388	1,388	Chas. E. Kelly	.....	.....
Pinebluff city	Atlantic	11,267	11,267	W. H. Murray, M. D.	.....	.....
Pinebluff township	Atlantic	1,483	1,483	Samuel Bartlett	.....	.....
Pohatcong township	Warren	1,827	1,827	Daniel W. Busson, New Egypt	.....	.....
Poisonville township	Ocean	1,827	1,827	Daniel W. Busson	.....	.....
Point Pleasant borough	Ocean	676	676	W. B. Longyear	.....	.....
Pompton Lakes borough	Pasaic	2,158	2,046	A. M. Ryan	.....	.....
Pompton township	Pasaic	676	676	W. B. Longyear	.....	.....
Port Oran borough	Morris	848	848	A. M. Ryan	.....	.....
Port Oran township	Morris	848	848	A. M. Ryan	.....	.....
Princeton township	Morris	1,807	1,807	W. B. Longyear	.....	.....
Rahway city	Union	7,106	7,106	S. Rusling Rynd	.....	.....
Rahway township	Union	8,798	8,798	S. Rusling Rynd	.....	.....
Raritan township	Middlesex	3,738	3,738	Chas. Albaugh	.....	.....
Raritan borough	Middlesex	1,849	1,849	Wm. Van Sicken, Metuchen	.....	.....
Raritan township	Monmouth	2,778	2,778	Chas. Albaugh	.....	.....
Red Bank township	Monmouth	2,813	2,813	Asbury F. Beadle	.....	.....
Ridgefield township	Bergen	1,481	1,481	Eugene Hofman, White Horse Sta.	.....	.....
Ridgefield village	Bergen	1,481	1,481	Henry Bencke, Fort Lee	.....	.....
Ridgewood township	Bergen	1,481	1,481	Henry Bencke	.....	.....
Ridgewood village	Bergen	1,481	1,481	Henry Bencke	.....	.....
Riverdale borough	Bergen	1,481	1,481	Henry Bencke	.....	.....
Riverdale village	Bergen	1,481	1,481	Henry Bencke	.....	.....
Riverdale township	Bergen	1,481	1,481	Henry Bencke	.....	.....
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List of Sanitary Districts, Showing Locality and Names of Officers - Continued.

SANITARY DISTRICT.	COUNTY.	POPULATION.		NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF ASSESSOR.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
		1890.	1895.			
Valhburg borough	Essex	1,746	1,969	Charles J. McArdle, Gloucester	Alvan Van Winkle	William Billington.
Verona township	Essex	3,822	4,126	H. B. Whitmore, M.D., Verona	William I. Reist, Verona	William MacGeorge, Jr. John J. Feldmann, Passaic.
Vineeland borough	Chamberlain	436	531	John S. Halsey, M.D.	G. E. Rogers	A. J. Crail.
Wall township	Bergen	1,046	1,068	Corneilus D. Gunn, Walpack Centre	S. M. Purcell	Peter Newmiller, Warrenville.
Walpole township	Somerset	1,046	1,068	Samuel Rinehart, Washington	W. W. Baiter, Hillsdale	
Wanaque township	Sussex	1,046	1,068	Samuel Rinehart, Washington	A. E. Gaster	
Warren township	Somerset	1,046	1,068	Samuel Rinehart, Washington	W. W. Baiter, Hillsdale	
Washington borough	Warren	310	661	A. E. Gaster, Green Bank	A. E. Gaster	
Washington township	Burlington	1,155	1,200	C. B. Phillips, M.D., Hurttville	Chas. D. Nicholson, Turnersville.	
Washington township	Gloucester	1,126	1,142	J. B. Yard, Windsor	W. A. B. B. Schooley's Mountain	
Washington township	Mercer	2,367	2,527	Samuel Rinehart, Washington	Samuel Rinehart	
Washington township	Warren	1,425	1,458	Samuel Rinehart, Washington	M. D. Beckley, Berlin	
Wayne township	Camden	2,421	2,789	Samuel Rinehart, Washington	G. V. Zellif, Fairson	Jesse W. Eng, Ish.
Weehawken township	Passaic	1,943	2,069	Samuel Rinehart, Washington	George H. Carr, Lambertville	William G. Blattner, Cape May.
Westborough township	Hudson	668	593	John W. English	Marky Clumey	
Westborough township	Hudson	566	596	Hudson R. Haines, Ranocoma	John M. C. Marsh	
West Cape May borough	Cape May	1,788	1,709	John Reeves	Jos. H. Schuster, Echo Lake	Jno. J. Bate.
West Deptford township	Gloucester	2,789	3,738	Mark Clement, Woodbury	Chas. H. Mather, Princeton June	I. F. Brooks Wm. K. Prentiss.
West Milford township	Hudson	11,665	18,336	Celestine Tindle, Echo Lake	Bernard Godfrey	D. T. Mathers G. M. Ackerman.
West Orange township	Essex	4,356	5,544	Frank C. O'Connor	Michael G. Bursall	W. H. White, H. H. Stapler.
Westwood borough	Bergen	638	644	Bernard Godfrey, Tuckahoe	Jus. V. Freeman	
Weymouth township	Atlantic	739	576	Bernard Godfrey, Tuckahoe	George Bozarth, Chatsworth	
Wilbur borough	Mercer	739	704	J. F. Brooks, Trenton	Samuel Avis, Swedesboro.	
Willwood borough	Burlington	4,665	5,699	Wm. K. Prentiss, Wildwood		
Winslow township	Camden	3,911	2,034	Michael G. Bursall, Wilton		
Woodbridge township	Middlesex	3,911	3,499	James V. Freeman		
Woodcliff township	Passaic	3,7	3,499	Arthur Star		
Woodlands township	Burlington	3,7	3,499	Wm. H. White		
Woodstock township	Warren	3,7	3,499	Wm. H. White		
Woodstock township	Warren	3,7	3,499	Wm. H. White		
Woodstock township	Warren	3,7	3,499	Wm. H. White		

CEMETERIES.

The law relating to the keeping of records of burials by persons having charge of cemeteries does not provide how the facts shall be obtained upon which the records are to be based. The requirement is contained in section 9 of the act approved February 15th, 1888, which is as follows:

9. That it shall be the duty of the keeper of every cemetery within this State owned by any cemetery company organized under any law of this State, to keep a record of all interments made in such cemetery, which record shall include the name of the person interred, last place of residence and the name of the undertaker, or person acting as undertaker; said record shall be a public record and at all times open to the inspection of any persons who, under any laws of this State, shall have duties imposed upon them relating to the procurement or tabulation of vital statistics.

The responsibility for burial without a permit is placed by the law mainly upon the undertaker, although his share of the act of interment usually consists merely in the delivery of the remains to the employes of the owners of the cemetery. Inspection of cemeteries has shown that the custom concerning the keeping of cemetery records varies in different parts of the State. In some localities the burial permits are deposited with the cemetery keeper, except in cases where the certificate of death is used as a permit for burial, while in other places the permits are retained by the undertaker.

The following inquiry was sent to each sanitary district:

OFFICE OF THE BOARD OF HEALTH  
OF THE STATE OF NEW JERSEY.

TRENTON, July 1st, 1897.

DEAR SIR—Will you please supply the information asked for in the following inquiries?

Very truly yours,  
HENRY MITCHELL,  
Secretary





List of Cemeteries in New Jersey, Showing Facts Which Have Been Obtained by Recent Inquiries—Continued.

NAME OF SANITARY DISTRICT.	COUNTY.	NAMES OF CEMETERIES.	AREA.	ARE RECORDS KEPT OF ALL BURIALS?	DO RECORDS OF CEMETERIES REQUIRE UNDERTAKERS TO FURNISH BURIALS ARE PERFORMED?
Beverly city	Burlington	St. Stephen's	1 acre	Yes	No
Beverly township	Burlington	Cooper town	.....	Not stated	Yes
Beverly "	Burlington	Monument	.....	.....	.....
Beverly "	Burlington	Cedar Ridge	4 acres	No	Not always
Blairstown	Warren	.....	1 1/2 "	.....	.....
Bloomfield township	Passaic	Bloomfield	16 "	Yes	Yes
Bloomfield "	Passaic	.....	7 "	.....	Only non-residents.
Boonton	Morris	Boonton	5 "	No	No
Boonton town	Morris	Boonton	2 1/2 "	Yes	.....
Boonton township	Burlington	Christ Church	20 "	Yes	Yes
Bordentown "	Burlington	Bordentown	.....	.....	.....
Bordentown "	Burlington	No cemeteries.	.....	.....	.....
Bridley Beach	Somerset	North Branch Church	1 1/2 acres	Yes	Some do, others not.
Burlington city	Burlington	St. Mary's	7 "	.....	.....
Burlington "	Burlington	Methodist	8 "	.....	.....
Burlington "	Burlington	Catholic	3 "	.....	.....
Burlington "	Burlington	Episcopal	2 "	No	Yes
Caldwell township	Passaic	Fairfield	1 1/2 "	.....	.....
Caldwell "	Passaic	Clinton	.....	.....	.....
Camden city	Cape May	.....	16 city lots	Yes	Yes
Camden township	Cape May	Berry Lawn	233 x 200 ft.	.....	.....
Carlsbad (borough)	Bergen	Magnum M. F.	1 acres	No	.....
Centre township	Cape May	Snow Hill M. F.	3 "	.....	.....
Centre "	Cape May	Helding M. F.	1 1/2 "	.....	.....
Centre "	Cape May	Green Lawn	4 "	Yes	.....
Cherryfield township	Burlington	Friends	1 1/2 "	.....	.....
Chester "	Burlington	Catholic	.....	.....	.....
Chester "	Burlington	Friends, Ashby	.....	.....	.....
Cinnaminson	Burlington	Friends, Wigginsville	.....	.....	.....
Cinnaminson "	Burlington	.....	.....	.....	.....
Cinnaminson "	Burlington	.....	.....	.....	.....
Clark	Union	Hazelwood (small part)	.....	No	.....
Clayton borough	Gloucester	Cedar Green	27 acres	.....	.....

CEMETERIES.

Clinton	Gloucester	Freshwater	3 "	Not stated.	Not stated.
Clinton	Gloucester	Catholic	2 1/2 "	.....	.....
Clinton	Gloucester	Episcopal	6 "	.....	.....
Clinton	Bergen	R. Nur Israel	6 "	Yes	Yes
Clinton	Hunterdon	Lebanon	1 1/2 "	.....	Some do.
Clinton	Hunterdon	Mount Peace Cemetery Association	8 "	.....	.....
Clinton	Hunterdon	Port Norris M. F.	2 "	.....	.....
Clinton	Hunterdon	Fairview	.....	.....	.....
Cranbury	Middlesex	No cemeteries	15 acres	.....	.....
Cranbury	Middlesex	Methodist	.....	No	.....
Cranbury	Middlesex	Woodmill	.....	.....	.....
Cranbury	Middlesex	Friendship M. F.	.....	.....	.....
Cranbury	Middlesex	Hersey, Rosenhayn	.....	.....	.....
Cranbury	Middlesex	Lutheran	.....	.....	.....
Cranbury	Middlesex	No cemeteries	.....	.....	.....
Cranbury	Middlesex	Fairview	1 1/2 acres	Yes	.....
Cranbury	Middlesex	Green	.....	.....	.....
Cranbury	Middlesex	Pierce	20 "	.....	.....
Cranbury	Middlesex	Strangers	1 "	.....	.....
Cranbury	Middlesex	Laurel M. F.	8 "	.....	.....
Cranbury	Middlesex	Laurel Street	.....	.....	.....
Cranbury	Middlesex	No cemeteries	46 square rods	Yes	.....
Cranbury	Middlesex	Friendship M. F.	.....	.....	.....
Cranbury	Middlesex	Chestnut Hill, Oak Ridge	10 acres	Yes	.....
Cranbury	Middlesex	Oak Lawn, Spotswood	10 "	.....	.....
Cranbury	Middlesex	No cemeteries	6 "	.....	.....
Cranbury	Middlesex	Zion M. F.	.....	.....	.....
Cranbury	Middlesex	Abury M. F.	2 "	Yes	.....
Cranbury	Middlesex	Mount Calvary	25 "	.....	.....
Cranbury	Middlesex	Brookside	2 "	.....	.....
Cranbury	Middlesex	No cemeteries	2 acres	Yes	.....
Cranbury	Middlesex	Evangelical Cemetery Association	.....	.....	.....
Cranbury	Middlesex	Stone Church	.....	.....	.....
Cranbury	Middlesex	Jonestown	.....	.....	.....
Cranbury	Middlesex	Hillside	1 1/2 "	.....	.....
Cranbury	Middlesex	Cedar Hill	10 "	.....	.....
Cranbury	Middlesex	Calvary	.....	.....	.....
Cranbury	Middlesex	St. Stephen's	.....	.....	.....
Cranbury	Middlesex	Franklin	23 acres	.....	.....
Cranbury	Middlesex	.....	12 "	.....	.....









## LIST OF CORONERS.

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Atlantic County—Chas. Cunningham, Wm. McLaughlin, Elisha S. Ingersoll.  
Bergen County—Wm. F. Ricardo, Jacob M. De Baun, Cornelius Collins.  
Burlington County—Augustus B. Groebler, Frank G. Stroud, Lemuel Fisher.  
Camden County—A. H. Lippincott, Frank O. Stern, Edgar H. Landis.  
Cape May County—John S. Douglas, Wilson A. Lake, Daniel C. Heritage.  
Cumberland County—Waldo F. Sawyer, Stetson L. Bacon, Paul J. Davis.  
Essex County—Benj. M. Skinner, Albert J. Hollis, Chas. H. Terrill.  
Gloucester County—James Hunter, Jr., Louis N. Shreve, Thomas J. Gaskill.  
Hudson County—Wm. Delaney, Chas. Hoffman, Cornelius Greenleaf.  
Hunterdon County—Patrick F. Burke, Frederick L. Johnson.  
Mercer County—Wm. Glenn, Wm. M. Disbrow, Chas. H. Walker.  
Middlesex County—Thomas F. Burke, Chas. R. Moke, Edward E. Haires.  
Monmouth County—Wm. T. Hopper, Henry Herbert, Theo. M. Anderson.  
Morris County—George W. Wilkinson, Cornelius B. Gage, Chas. De V. Romondt.  
Ocean County—Edward T. Wirth, Alfred Palmer, George Nunemaker.  
Passaic County—Chas. B. Hindes, Abraham Vermeulen, Chas. W. Booth.  
Salem County—W. H. Carpenter, Thomas J. Torton, John G. Campbell.  
Somerset County—Adonis Nelson, Abram B. Mcsher, Aaron L. Stillwell.  
Sussex County—Lewis C. Burd, Sidney B. Straley.  
Union County—Chas. W. MacConnell, Stephen B. Keefe, Robert R. Sinclair.  
Warren County—Jesse Smith, Michael Kenney, Joseph Hilbert.

## REPORT OF THE DIRECTOR OF THE BACTERIOLOGICAL LABORATORY.

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

GENTLEMEN—I have the honor to submit the following report.

The work of the laboratory was resumed under my direction about the middle of last September. When I assumed charge I found the laboratory excellently equipped for examinations of material from cases of suspected diphtheria and tuberculosis, and I have found it necessary to make but few additions.

My aim from the start has been to give prompt replies to physicians submitting material for examination. I have endeavored to make and report the diagnosis in cases of suspected diphtheria as quickly as possible, and have reason to believe from numerous letters received that I have usually been able to give satisfaction. There has been complaint in this respect in one case only, and this was a case in which it was impossible to make a definite diagnosis.

It has not been thought wise to undertake much more than the examination of material from cases of suspected diphtheria and tuberculosis, and blood from cases of suspected typhoid fever. It has been possible to do these without undue hurry. Unless these examinations are made with proper care and deliberateness errors are likely to occur. To avoid these I have used a system of checking that reduces this danger to a minimum, but consumes a good deal more time than if the reports were issued without checking. But the assurance of accuracy is worth the time spent. I have had to refuse reluctantly some of the work, other than for the three diseases above mentioned, requested by physicians and local boards of health, for the reason that I feared it would crowd the work to such an extent that it would be impossible to do justice to anyone. My assistant is thoroughly competent, and by restricting the work as I have, we have been able to do the work to our satisfaction, and, as has already been said, to the satisfaction of those physicians who have expressed themselves about it, but I do not feel sure we should have been able to do this if we had undertaken all the work that was sent us to do.



EXAMINATIONS FOR DIPHTHERIA.

The system adopted for the examination and report in cases of suspected diphtheria is as follows:

Various depots throughout the State have been established for distributing the swabs and mailing cases for obtaining material from the throats of persons suspected of having diphtheria and for shipping this to the laboratory. It has been possible to keep a limited supply only of mailing cases at the depots, because the stock of these cases has been allowed to become low in the expectation that the use of a new and more convenient case would soon be authorized by the postmaster-general. It is hoped that certain modifications described below will be permitted by the postal authorities, and for this reason it has been considered best to use those cases that are now on hand and to wait before increasing the supply at the various depots, and to establish new depots until the new cases shall be obtained. At present, and until the new cases are procured, the mailing cases are made to comply with the order of the postmaster-general, No. 88, issued February 5th, 1896. (See Report of State Board of Health, 1896, page 18.)

Besides the swab for obtaining the material from the throats the cases contain the following blank form to be filled out and returned to the laboratory with the specimen.

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

LABORATORY OF HYGIENE, PRINCETON, N. J.

This blank to be accurately filled out and placed inside of the package, and returned therewith to the laboratory.

*Specimen from a Case of Suspected Diphtheria.*

How many specimens from this case have already been sent out?.....  
 Name of sender of specimen.....  
 Address.....  
 Date.....  
 Time.....  
 Name of patient.....  
 Age.....  
 Address.....  
 Duration of disease.....  
 How contracted.....  
 Location of membrane.....  
 Clinical diagnosis.....  
 Shall report from laboratory be sent by mail or telegraph?.....

Send the package at once to the *Laboratory of Hygiene, Princeton, N. J.* If sent by mail, use only the mailing cases provided by the laboratory, and prepay full letter postage. If a reply is not received within a reasonable time please notify the Laboratory.

The chief objection found in practice to the use of these mailing cases is that the outside covering frequently falls off during sterilization. To overcome this objection the postmaster-general is being petitioned to permit the heavy layers of pasteboard now required on the outside to be put on the inside of the case.

The swabs are those now universally employed in laboratories of this kind, and consist of a pledget of cotton wool on the end of a wire. Our experience goes to show that it is preferable for physicians to send us the swabs and let the culture medium be inoculated in the laboratory rather than to send us cultures. Where cultures have been sent instead of the swabs, the former have been so overgrown with contaminations that it has been difficult or impossible to find the diphtheria bacilli. The latter grow little, if at all, at ordinary temperatures during transit, whereas the contaminating bacteria frequently grow abundantly in transit, thus masking the diphtheria bacilli.

As soon as the swabs arrive at the laboratory, tubes of Loeffler's nutrient medium are inoculated and put in the incubator, and it is sometimes possible to make the diagnosis the same day. If the cultures are made in the morning there is often sufficient growth by afternoon to make preparations from.

Reports of the results of the examinations are made on the accompanying cards, which explain themselves:

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

LABORATORY OF HYGIENE, PRINCETON, N. J.

*Report of Examination of Specimen for Diphtheria.*

No. of this case..... No. of specimens examined from this case.....  
 Received..... Examined.....  
 Sent by Dr.....  
 Address.....  
 Name of the patient.....  
 Result of the examination: Diphtheria bacilli are not present.

Report sent by.....

Director.

## BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

LABORATORY OF HYGIENE, PRINCETON, N. J.

*Report of Examination of Specimen for Diphtheria.*

No. of this case..... No. of specimens examined from this case.....  
 Received..... Examined.....  
 Sent by Dr.....  
 Address.....  
 Name of the patient.....  
 Result of the examination: Diphtheria bacilli are present.  
 .....  
 Director.

Report sent by.....

## BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

LABORATORY OF HYGIENE, PRINCETON, N. J.

*Report of Examination of Specimen for Diphtheria.*

No. of this case..... No. of specimens examined from this case.....  
 Received..... Examined.....  
 Sent by Dr.....  
 Address.....  
 Name of the patient.....  
 Result of the examination: Impossible to make a definite diagnosis for the following  
 reason, and another specimen is requested.  
 .....  
 Director.

Report sent by.....

These cards are filled out in duplicate and one is sent to the physician, the other retained and filed away in a card index case for record. A preparation is also preserved from each specimen that is examined and bears the same number as the record card.

## EXAMINATIONS FOR TUBERCULOSIS.

The system adopted for tuberculosis is similar to that for diphtheria. The mailing case is practically the same. Instead of the swab, however, a little glass jar with a screw top is employed. Reports of

the results of examinations are made on cards similar to those for diphtheria. These mailing cases also have blank forms to be filled out by the physicians. Preparations are preserved from each specimen.

## EXAMINATIONS OF BLOOD IN CASES OF SUSPECTED TYPHOID FEVER.

The arrangement for obtaining specimens of blood for examination in cases of suspected typhoid fever consists of a small piece of writing paper about four inches square folded in the manner employed by druggists in putting up powders. These papers are placed in envelopes addressed to the laboratory and accompanying them is the following blank form to be filled out and returned by the physicians:

## BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

LABORATORY OF HYGIENE, PRINCETON, N. J. B. MEADE BOLTON, M.D., DIRECTOR.

*Blood from a Patient Suspected of Having Typhoid Fever.*

How many specimens from this case, if any, have already been sent?.....  
 Name of sender of specimen.....  
 Address.....  
 Date.....  
 Name of patient.....  
 Age.....  
 Sex..... Color.....  
 Duration of the disease.....  
 Range of temperature.....  
 If the patient has had typhoid fever previously, please state how long ago.

Underline any of the following symptoms that may be present: Diarrhoea, iliac tenderness, enlarged spleen, rose spots, delirium.

~~As~~ This blank is to be filled out and returned to the laboratory with the specimen of blood.

*Directions for Taking the Specimen of Blood.*

Prick the patient's finger or lobe of the ear with a clean needle. Allow five drops or more of blood to run on to the inside of the piece of folded paper contained in the accompanying small envelope. Refold the paper and replace it in the small envelope.

Reports to physicians of the results of examination are made on cards similar to those employed for diphtheria and tuberculosis.

Besides the examinations in cases of suspected diphtheria, tuberculosis and typhoid fever there have been several examinations for suspected gonorrhœa, two of blood for suspected malaria and two for actinomycosis; also a series of experiments to test the efficacy of formalin in the disinfection of rooms. These results are not yet ready for report. The total number of examinations made since my connection with the laboratory is two hundred and fifty-three. As well as can be ascertained from the records on file there were eight hundred and eighty-seven examinations made in the laboratory before I took charge. An analysis of these examinations is subjoined.

## EXAMINATIONS OF SWABS FOR DIPHTHERIA.

## I.

*From the middle of September, 1897, to December 11th, inclusive.*

Number of cases in which the diphtheria bacilli were found.....	62 or 51.66 per cent.
“ “ “ in which the diphtheria bacilli were not found..	50 or 41.66 “
“ “ “ which could not be diagnosed.....	8 or 6.66 “
“ “ secondary examinations.....	53

Total number of examinations of cases diagnosed clinically as diphtheria.....	173
Number of males.....	89 or 51.5 per cent.
“ “ females.....	84 or 48.5 “

*Ages.*

From 0 to 5 years.....	21.70 per cent.
“ 5 to 10 years.....	40.82 “
“ 10 to 15 years.....	13.32 “
“ 15 to 20 years.....	10 “
“ 20 to 25 years.....	5 “
“ 25 and over.....	9.16 “

## II.

*Cases in which the Clinical Diagnosis was Diphtheria, from about the middle of September, 1897, to December 11th, inclusive.*

Number of cases in which the diphtheria bacilli were found.....	51 or 74.8 per cent.
“ “ “ in which the diphtheria bacilli were not found..	13 or 19.4 “
“ “ “ in which no bacteriological diagnosis could be made.....	4 or 5.8 “
Total number of cases clinically diagnosed as diphtheria.....	68

## III.

*Cases in which the Attending Physicians gave the Diagnosis as other than Diphtheria or as doubtful.*

PHYSICIANS' DIAGNOSIS.	No. of cases.			
		†*	-†	‡†
Laryngitis.....	1		1	
Quinsy.....	2		2	
Tonsillitis.....	2		2	
Membranous croup.....	1		1	
Stomatitis.....	1		1	
Follicular tonsillitis.....	1		1	
No diagnosis.....	3	3	4	1
Uncertain.....	20	5	14	1
Diphtheria, with a question.....	8	3	5	
	9	4	4	1

\*+Denotes that the bacteriological examination showed the presence of diphtheria bacilli, †— absence of diphtheria bacilli, ‡† no diagnosis possible for some reason.

## IV.

*Examination of Sputum for Tubercle Bacilli from the middle of September, 1897, to December 11th, inclusive.*

Number of examinations in which the bacilli were found.....	53 or 47.8 per cent.
“ “ examinations in which the bacilli were not found..	58 or 52.2 “
“ “ secondary examinations.....	4

Total number of examinations.....	115
Number of males.....	51 or 46 per cent.
“ “ females.....	60 or 54 “

*Ages.*

From 10 to 20 years.....	2 per cent.
“ 20 to 25 years.....	10.8 “
“ 25 to 30 years.....	20.6 “
“ 30 to 35 years.....	18.7 “
“ 35 to 40 years.....	16.7 “
“ 40 to 45 years.....	9.7 “
“ 45 to 50 years.....	3.9 “
“ 50 to 55 years.....	5.8 “
“ 55 to 60 years.....	2.0 “
“ 60 to 65 years.....	3.9 “
“ 65 to 70 years.....	3.9 “
“ 70 and over.....	2.0 “

## V.

Examination of Blood for Suspected Typhoid Fever, from October 7th, 1897, to December 11th, 1897, inclusive.

Number of cases giving the reaction.....	15 or 55 per cent.
" " " not giving the reaction.....	12 or 45 "
Total number of examinations.....	27
Number of males.....	12
" " females.....	10
Sex not given.....	5

## Ages.

From 0 to 5.....	1
" 5 to 10.....	2
" 10 to 15.....	4
" 15 to 20.....	1
" 20 to 25.....	2
" 25 to 30.....	7
" 30 to 35.....	1
" 35 and over.....	5
No age given.....	4

## TYPHOID FEVER.

Symptoms and Results of Examination in Detail.

Number.	Duration of the disease in days.	Diarrhoea.	Iliaic tenderness.	Enlarged spleen.	Rose spots.	Delirium.	Range of temperature.	Previous attacks.	Resulting blood test.	Presence of symptoms, or blood, indicated by +; absence of these, by -
1	27	.....	.....	.....	.....	.....	101-104	.....	+	No Further Information.
2	27	.....	.....	.....	.....	.....	98 $\frac{1}{2}$ -100	.....	-	No Further Information.
3	15	.....	.....	.....	.....	.....	99 $\frac{1}{2}$ -103 $\frac{1}{2}$	.....	+	No Further Information.
4	15	.....	.....	.....	.....	.....	100 $\frac{1}{2}$ -103 $\frac{1}{2}$	.....	+	No Further Information.
5	16	.....	.....	.....	.....	.....	.....	.....	+	No Further Information.
6	12	+	+	.....	.....	.....	100 $\frac{1}{2}$ -104 $\frac{1}{2}$	.....	+	No Further Information.
7	17	+	+	.....	.....	.....	High Temperature.	.....	+	.....
10	13	.....	.....	.....	.....	.....	102 $\frac{1}{2}$ -104 $\frac{1}{2}$	.....	+	.....
11	13	.....	.....	.....	.....	.....	102 $\frac{1}{2}$ -104 $\frac{1}{2}$	.....	+	No Further Information.
12	13	.....	.....	.....	.....	.....	102 $\frac{1}{2}$ -104 $\frac{1}{2}$	.....	+	No Further Information.
13	10	.....	.....	.....	.....	.....	102 $\frac{1}{2}$ -104 $\frac{1}{2}$	.....	+	No Further Information.
14	13	.....	.....	.....	.....	.....	103-104 $\frac{1}{2}$	.....	+	No Further Information.
15	10	.....	.....	.....	.....	.....	103-104 $\frac{1}{2}$	.....	+	No Further Information.
16	7	.....	.....	.....	.....	.....	101 $\frac{1}{2}$ -103 $\frac{1}{2}$	.....	+	No Further Information.
17	7	.....	.....	.....	.....	.....	101 $\frac{1}{2}$ -103 $\frac{1}{2}$	.....	+	No Further Information.
18	4	.....	.....	.....	.....	.....	101 $\frac{1}{2}$ -103 $\frac{1}{2}$	.....	+	No Further Information.
19	5	.....	.....	.....	.....	.....	101 $\frac{1}{2}$ -103 $\frac{1}{2}$	.....	+	No Further Information.
20	7	.....	.....	.....	.....	.....	About 102	.....	+	No Further Information.
21	7	.....	.....	.....	.....	.....	Slight.	.....	+	No Further Information.
22	15	.....	.....	.....	.....	.....	102	.....	+	No Further Information.
23	14	.....	.....	.....	.....	.....	101 $\frac{1}{2}$ -102 $\frac{1}{2}$	.....	+	.....
24	13	.....	.....	.....	.....	.....	102-103 $\frac{1}{2}$	.....	+	.....
25	13	.....	.....	.....	.....	.....	102-103 $\frac{1}{2}$	.....	+	.....
26	13	.....	.....	.....	.....	.....	102-103 $\frac{1}{2}$	.....	+	.....
27	21	.....	.....	.....	.....	.....	.....	.....	+	.....

## VII.

## DIPHTHERIA.

Summary of Examinations on Record Previous to my Connection with the Laboratory.

Number of examinations in which the diphtheria bacilli were found.....	313
" " " in which the diphtheria bacilli were not found.....	314
Total number of examinations.....	627

## VIII.

## TUBERCULOSIS.

Number of examinations in which the bacilli were found.....	145
" " " in which the bacilli were not found.....	108
Total number of examinations.....	253

## IX.

## MISCELLANEOUS.

Number of examinations of water.....	4
" " " of milk.....	1
" " " of blood of a cow for anthrax.....	2

Respectfully submitted,

B. MEADE BOLTON.

# THE PUBLIC HEALTH LAW OF NEW JERSEY.\*

BY WILLIAM M. LANNING, ESQ., TRENTON, N. J.

In dealing with the subject I consider (1) the health law as declared by the legislature, (2) as construed by the courts, (3) and as to its adequacy.

*I. The Public Health Law of this State as Declared by the Legislature.*—In 1877 a State board of health was created, whose powers were confined to sanitary investigations and inquiries throughout the State, except in cities, boroughs and townships having local boards of health, where it had no authority. Its work was to be prosecuted at an expense not exceeding \$1,000 a year, and the duty was imposed upon it of making annual reports to the Governor and of accompanying those reports with suggestions for the promotion or protection of the public health. Its work was, therefore, that of investigation and advice merely.

In 1878 an act was passed for better securing returns of vital statistics, and the State board of health was given, in cities having local boards of health, the same powers of inquiry as to vital statistics and other matters relating to public health, as it had in other parts of the State.

In 1880 was passed the first act providing for the establishment of local boards of health in all cities, towns and townships of the State. They were required to answer any inquiries addressed to them by the State board and make annual reports to the State board of the condition of the public health in their respective localities; were given authority to pass ordinances to compel returns of vital statistics; and were vested with the power to abate nuisances injurious to the public health, subject, however, to liability for damages if they destroyed property shown to be in no way hazardous to the public health. The act also

\* Read before New Jersey Sanitary Association, December 11th, 1896.

provided for the tabulation of the vital statistics returned to the State board and for the vaccination, at public expense, of the children of indigent parents. This was the beginning of the local board system in our State.

In the same year the State board was authorized to quarantine animals suffering from infectious diseases and to enforce such regulations as they might adopt for preventing the spread of any such disease, and also to appoint a State inspector of milk, to whom power was given to condemn milk sold contrary to law and to pour it upon the ground.

In the same year the State board of health was authorized, where any locality was threatened with any infectious disease among animals, with the consent of the local board, to prohibit the transportation of animals through such locality without inspection and a permit therefor.

In 1881 the State board of health was authorized to fix the limits or variability permissible in any article of food or drug, the standard of which was not established by any national pharmacopœia, and was also given power to make investigations in relation to the adulteration of food and drugs, and given the power of appointing public analysts and chemists.

In 1882 local boards were authorized to pass ordinances (1) to aid in enforcing the State law concerning unwholesome food and drinks, (2) to define nuisances, (3) to prevent the spread of dangerous diseases, (4) to regulate the keeping and slaughter of animals, (5) to regulate the accumulating of decaying substances, (6) to abate nuisances, (7) to compel the return of marriages, births and deaths, (8) to secure the sanitary condition of tenement-houses, jails, prisons and public buildings, and (9) to regulate the cleaning of sewers and the dumping of garbage.

In the same year (1882) the State board was authorized to determine what should be the means of ascertaining whether petroleum or kerosene, sold for illuminating purposes, was of the degree of purity required by law, and also to visit almshouses, prisons and other public institutions and make inquiries concerning their sanitary condition. In the same year the State milk inspector appointed by the State board was authorized to send bottles of suspected milk to a public analyst for analysis and, in case the analysis showed the milk to be adulterated, to bring suit against the party selling it.

In 1883 local boards were authorized to prohibit public funerals in

cases of death from infectious diseases, to require physicians to notify local boards of the existence of such diseases, and to apply to the Court of Chancery for injunction against the continuance of any nuisance hazardous to the public health.

In 1884 all local boards except township boards were authorized to pass ordinances, for purposes in addition to the nine prescribed in the act of 1882, as follows: (10) to regulate the manner of constructing and cleaning cesspools and privy vaults, (11) to regulate the manner of connecting house drainage with outside sewers and cesspools, (12) to protect the public water-supply and to order closed dangerous wells, (13) to remove to suitable places persons suffering from infectious diseases and to disinfect premises occupied by them, and (14) to regulate the burial and disinterment of human bodies.

In the same year (1884) the State board was given the authority to destroy animals afflicted with glanders.

In 1885 local boards in cities were authorized to prohibit the sale of impure ice, and all local boards except township boards were authorized to require from the financial authorities annual appropriations not exceeding five cents for each inhabitant. The appropriation to township boards was also increased and they were given the power, where the necessity for it existed, to appoint local health inspectors. The State board was also authorized to inspect persons and property in transportation through the State, and cars, boats and other vehicles, and to enforce detention thereof when necessary, and to appoint State inspectors to aid in the execution of the laws concerning the public health.

In 1886 the health law of the State was revised, and the provisions hereinabove referred to, excepting those relating to infectious diseases among animals, which were embraced in a separate act, were embodied in the revised act.

In the same year the State board of health was authorized to appoint a State dairy commissioner, who, with his assistants and clerks, was empowered to enter all places of business in which the manufacture or sale of dairy products, or any imitation thereof, was had, and to inspect the same for the purpose of aiding in enforcing the health laws of the State. And in the same year the State dairy commissioner was invested with the powers theretofore performed by the State milk inspector.

In 1887 the act was again revised for the purpose of obviating a

constitutional objection that had been made to the revised act of 1886. Its provisions were substantially the same as those of the act of 1886.

In 1888 all local boards, except township boards, were authorized to pass ordinances for purposes, in addition to the fourteen already mentioned, as follows: (15) to regulate the plumbing, ventilation and drainage of all public and private buildings, and to require plans therefor to be submitted and approved and the names of plumbers and building contractors to be registered, and (16) to secure the sanitary condition of all buildings, public and private.

In 1889 the powers of the act of 1888 were also granted to local boards in densely-populated townships having public water-supplies. In the same year local boards were authorized to pass ordinances for the following purpose, in addition to the sixteen purposes already mentioned, viz., (17) to license and regulate persons to engage in the business of cleaning cesspools and privies, to prohibit unlicensed persons acting therein, and to require the approval of all vehicles used therein.

In 1892 all local boards, including township boards, were authorized to pass ordinances for all fourteen of the purposes mentioned in the acts of 1882 and 1884, which have been above referred to.

In 1893 the police justices and magistrates were authorized to issue warrants to health officers and others to search houses and premises suspected of being in a condition detrimental to health, or of containing persons sick of infectious diseases, and to abate the evil in the manner required by the health ordinances.

In 1894 the State board was authorized to apply to the Court of Chancery for an injunction against a nuisance in any case where a local board fails to do its duty, and also in any case where a nuisance existing in any sanitary district has a source or origin in another sanitary district.

In 1895 the State board was authorized to prohibit transportation or sale of milk suspected of being contaminated by disease germs.

In the same year local boards of health were given powers with respect to proper medical attention to children for the prevention of blindness when their eyes should become inflamed, or otherwise unnaturally affected, within two weeks after birth.

In the same year physicians were required to report to the proper local board every case of cholera, small-pox, diphtheria and other contagious, infectious or communicable diseases within twelve hours

after discovering the same, which facts were required to be at least weekly transmitted to the State board.

In 1896 local boards were authorized by ordinance (18) to compel owners of property to connect their houses and other buildings with public sewers.

This brief review of the sanitary legislation of our State discloses, I think, a plan adopted in obtaining it that might well be followed in other systems of legislation. Before a patient can be properly treated his disease must be properly diagnosed. Medical men, by reason of their professional training, have adopted a similar method of procedure in their efforts to secure our sanitary legislation. Before application to our legislature for sanitary laws, they ascertained sanitary conditions, and thereby enabled themselves to form intelligent opinions as to sanitary needs. Having formed their opinions, they then sought the aid of legal men to put into legal form statutes to secure the desired objects. The securing of sanitary legislation should always be sought by the united efforts of the medical and the legal professions. The plan pursued in securing our sanitary legislation has plainly been the following :

*First.* Facts have been ascertained. The State board of health, which was first created in 1877, for three years possessed no administrative powers whatever. Its first work was to make sanitary investigations and inquiries. It investigated the causes of diseases, the facts relating to mortality, and all questions concerning the public health. When local boards were established, in 1880, they were given similar powers of investigation and inquiry. These powers have been continued to the State and local boards ever since their creation.

*Second.* The facts have been reported. Local boards are required to report to the State board, and the State board is required to report to the Governor. These reports are published, and thus do the facts reach the public, and thus do the public become educated as to their needs in sanitary legislation and as to the benefits to be derived from sanitary legislation.

*Third.* Suggestions for sanitary legislation have followed the ascertainment of facts. The best suggestions must be based upon a knowledge of the facts. They must also be reasonable and practicable. The collation of sanitary facts, and the report of them in such a way

that they reach an association like this, and our legislators and the public, aid in showing whether the suggestions are reasonable and practicable. Men who have studied the facts are the ones to suggest the nature of remedial legislation.

These three features of the plan pursued in securing our sanitary legislation indicate the work done by our medical men and others having skill in sanitary matters. It is the most important work done in the securing of sanitary legislation, and forms the very foundation of all successful work in that direction.

The next three features of the plan (the fourth, fifth and sixth) show the work done by legal men.

*Fourth.* The legal form of our sanitary legislation. It is very general and broad. Very few specific duties are prescribed for local boards. Fine definitions of power are avoided. Any attempt by the State legislature to give a detailed description of duties and powers would fail to provide for the general needs.

*Fifth.* Local boards are left to make detailed and specific definitions of duties and powers. General subjects are prescribed by the State legislature on which local boards may themselves legislate by ordinance. These subjects have been increased in numbers from time to time. The State legislature has pointed out to local boards a way by which they may secure sanitary legislation, exactly adapted to their respective sanitary needs. It is by ordinance, and it can be secured in no other way.

*Sixth.* The administration of the law. As already remarked, the State board for three years after its creation had no administrative power. To-day it has large administrative powers. It has general power of sanitary inspection, not only of persons and property in any locality within the State, but of persons and property in transportation through the State, and of all vessels, cars and other vehicles used in such transportation, and may enforce such disinfection as it may deem necessary for the public safety. It may appoint inspectors to aid it in the enforcement of its orders. It may require local boards to appoint local inspectors, and where local boards fail to perform their duty in the abatement of nuisances, it may abate them or it may itself invoke the aid of the Court of Chancery in such abatement.

The administrative power of local boards, too, was very narrow under the first local board act of 1880. Under that act local boards had power to pass ordinances only on the single subject of compelling the return of vital statistics. Gradually this power has been broadened until now, only sixteen years after the passage of the original local board act, the subjects on which local boards may pass and enforce ordinances are eighteen in number. Local boards are now the great administrative arm of the law used in enforcing obedience to proper sanitary rules of conduct.

*II. The Public Health Law of this State as Construed by the Courts.*—One of the most important and beneficial provisions of the law authorizes a local board of health to file a bill of complaint in the Court of Chancery, in the name of the State, praying for an injunction to restrain the continuance of a nuisance detrimental or hazardous to the public health. The constitutionality of this provision was early assailed, but it was held both by the Court of Chancery (in 1884) and the Court of Errors and Appeals (in 1885) to be valid. (*Hutchinson v. Board of Health of Trenton*, 12 Stew. 218, 569.)

In 1886 the Supreme Court declared that "the purpose which the legislature had in view in creating boards of health was to supply additional means to prevent disease and discomfort, such as might arise from contamination of air, water or food;" that "these means were designed to be auxiliary to existing public methods of protection," and that "it was no part of that purpose to legalize or protect any of the sources of such evil." It was accordingly held, where one pleaded a license granted by the board of health against an indictment for maintaining a nuisance in carrying on his fat-rendering establishment, that the powers given to boards of health, large as they are, "are granted solely for repression, not the creation or protection of nuisances." (*Garrett v. State*, 20 Vr. 103.)

In 1888 the validity of the provision authorizing the destruction of horses afflicted with glanders was called in question. But it was held that a destruction of property, by a public official under such circumstances, was amply justified by the police power of the State. A horse afflicted with glanders is a common nuisance, and the Supreme Court said, when the validity of the act authorizing the destruction of horses so afflicted was under consideration, that there is nothing in the law as it has been declared in this State that "gives



the least countenance to the notion that the legislature may not authorize the abatement of a common nuisance until after its character as a nuisance has been determined in a judicial proceeding." The court further declared that "such a doctrine enforced by the courts would interpose an almost absolute barrier to the praiseworthy efforts everywhere made to prevent preventable diseases and to stamp out contagion affecting public health and comfort, and would render much of the health legislation of to-day of no avail." It must not be understood, however, that if the public official authorized to kill horses afflicted with glanders should, by a mistake, kill horses not so afflicted, the owner of the destroyed property would, in such case, be remediless. He would have his right of redress against the public official. (*Newark, &c., Horse Railway Co. v. Hunt*, 21 Vr. 308.)

In the same year (1888) a significant opinion of the Supreme Court was given on the necessity of the adoption of proper ordinances by local boards. An application was made for a writ of *mandamus* to compel a county board of freeholders to impose a tax for the construction of a new county jail, or the enlargement of the old one, with due regard to its sanitary arrangement. It will be remembered that among the eighteen purposes for which local boards may pass ordinances, the eighth purpose is "to secure the sanitary condition of tenement-houses, jails, prisons and all public buildings." The court said that the primary difficulty with the application was that it did not appear that the local board of health had passed any ordinance with regard to the jail. The court said that had such ordinance been adopted, and had the board of freeholders refused to comply with it, ground might have existed for a *mandamus* to compel obedience, but that, in the absence of such conditions, the court could not legally interfere. (*Board of Health of the City of Camden v. Board of Chosen Freeholders of County of Camden*, 21 Vr. 396.)

In 1886 the State dairy commissioner brought several suits against persons who, he alleged, sold oleomargarine contrary to law. He secured convictions in all the cases, but they were reversed by the Supreme Court because the magistrate's record of the convictions was defective. This led to the adoption by the legislature in 1887, of a prescribed form for the record of convictions under the oleomargarine act. The same form was prescribed for summary convictions under the health act in 1888. (*Hoeberg v. Newton*, 20 Vr. 617.) The validity of the oleomargarine act has been established by a series of

cases decided by the Supreme Court and convictions under it have been sustained. (*Waterbury v. Newton*, 21 Vr. 535, 545; *Ammon v. Newton*, 21 Vr. 543; *Bayles v. Newton*, 21 Vr. 549.)

In 1892 the Supreme Court sustained the action of a local board which granted a permit to a sanitary company to remove night soil to certain lands within the city limits and there to carry on the business of purifying it. The local board had passed an ordinance under the authority of the general health law. One of the purposes for which that law authorizes ordinances to be passed, as already stated, is "to regulate and control \* \* \* the method or manner of emptying or cleaning, and the frequency of cleaning, cesspools and privies." The ordinance which had been adopted in the case now referred to defined the manner in which cesspools and privies might be cleaned and emptied, and the contents removed and disposed of, and provided that every person acting as a scavenger should first obtain a permit from the board. While, by the strict language of the law above quoted, boards of health have the authority to pass ordinances concerning the manner and the frequency of cleaning and emptying cesspools and privies only, the court construed the language liberally, and held that it also authorized local boards to provide places to which, and to prescribe the conditions under which, the contents of such receptacles might be removed. The system of granting permits or licenses was also upheld as a fair exercise of power under the statutory authority to regulate the manner of cleaning and emptying these receptacles. (*Courter v. Newton*, 25 Vr. 325.)

In 1894 the Supreme Court had before it a case in which the voters of a township had voted to raise no tax for the protection of the public health. The Governor, under the authority of an act of 1884, appointed commissioners to fix the amounts that should be levied on the township for township purposes. The commission resolved to levy on the taxable property in the township \$2,000 for the protection and maintenance of the public health. The court, in reviewing this action, said: "Chapter LXVIII. of the laws of 1887 requires that there shall be a board of health in every township of the State, and an examination of the numerous statutes prescribing the duties of such boards indicates that their duties cannot be properly discharged without the expenditure of money. It was therefore the duty of the voters at the town meeting in Bernards to provide for raising the funds necessary to meet this probable expenditure, and their failure to

do so furnished a legal occasion for the resolution of the commissioners that \$2,000 should be levied for the protection of the public health. With this levy, therefore, we cannot interfere." (Allen v. Township of Bernards, 28 Vr. 305.)

In the same year (1894) the Court of Chancery held it to be the duty of a local board of health either itself to abate a nuisance, or to that end to ask the aid of the court, even though the nuisance only threatened to affect injuriously the public health. (Board of Health v. Lederer, 7 Dick. 676)

The first judicial decision to which I have referred sustained the provision of the health act authorizing a local board to file a bill of complaint in Chancery for an injunction to restrain the continuance of a nuisance hazardous to the public health. A local board, however, can only file a bill for injunction where the source of the nuisance complained of lies within its own sanitary district. (Board of Health v. East Orange, 8 Dick. 498.) In a paper read by me before this association in 1891, I suggested that the State board should have the right to file a bill in Chancery wherever a nuisance hazardous to the health of the citizens of one sanitary district should have a source or origin in another sanitary district. In 1894 this right was given by an act of the legislature to the State board, and on October 3d, 1896, a decision was rendered by the Court of Chancery in just such a case, on a bill filed by the State board of health, after argument by able counsel, and the constitutionality of the act was expressly upheld. (State Board of Health v. Jersey City, 35 Atlantic Reporter 835)

From what has been said, it is evident that the courts have been in full sympathy with the objects of our sanitary legislation. In their construction of that legislation they have plainly recognized the following important facts:

*First.* That the legislation is remedial in its character. It has therefore always been liberally construed. The protection of the public health being its object, every intendment of the law toward that object is given its due and proper effect.

*Second.* That the legislation is justified as a proper exercise of the police power of the State. The courts have therefore held that the destruction of animals which by communicable disease have become a common nuisance is lawful. Such a destruction is justified just as the blowing up of houses, not yet scorched by fire, is justified for the purpose of stopping a great conflagration.

*Third.* That the legislation is intended to be preventive rather than punitive. It is because of this fact that the courts have upheld the statutes which authorize adulterated milk to be poured upon the ground and dangerous property to be destroyed. The courts have learned what sanitarians have taught them, that there are many preventable diseases, and that the sanitary condition of houses and public buildings may be greatly improved by subjecting them to proper sanitary regulations. The courts, therefore, have adopted no rule that the public must wait until it has suffered the evil results of bad sanitary conditions before it can obtain relief. They have, on the contrary, given the fullest effect to all the disease-preventive provisions of the law.

*III. Are Our Sanitary Laws Adequate to the Purpose for which they were Intended?*—In answering this question, it must be remembered that the State legislature has wisely refrained from defining nuisances, or from prescribing any specific rules for their abatement, or for the regulation of noxious trades, or for otherwise promoting or protecting the public health. The adequacy of our sanitary laws depends chiefly on supplemental local legislation. Local boards have been slow in learning this fact. They do not generally realize that the eighteen subjects on which the State legislature has authorized them to pass ordinances afford them a grand opportunity to provide by ordinance most excellent systems of sanitary government. They do not generally realize that without supplemental local legislation their powers are confined within very narrow limits.

Consider, for example, the broad authority vested in local boards by the declaration of the State legislature that local boards may pass ordinances upon the single subject of aiding in enforcing the State law concerning unwholesome food and drinks. Under such an authority they may, by ordinance, provide for the inspection of meat, fish, fruit, vegetables, flour, milk and all other articles of food and drink offered for sale in markets and stores, and impose penalties for violation of the ordinance or for obstructing the inspector in the performance of his duty.

Or consider the still broader power conferred upon local boards by ordinance to define nuisances, whereby they may provide for the abatement of foul and impure pools, gutters, water-courses, privies, urinals, cesspools, drains and other places and receptacles from which noxious odors are emitted and the public health menaced, and whereby

they may likewise prohibit the throwing or conveying into gutters, highways, alleys or other public or private places, any slops, kitchen water, sewage or other foul liquids of any character, and prohibit the keeping of animals in such a way as to be a menace to the public health, and regulate the manner of accumulating and disposing of decaying animal and vegetable substances that are cast away from the kitchen, and to prohibit and regulate noxious trades and the like. Or consider the broad authority given to local boards to pass ordinances upon the single subject of preventing the spread of dangerous diseases, under which authority they may pass ordinances requiring physicians to report infectious diseases and deaths, and may quarantine persons who may be sick of such diseases and cause houses, bedding and furniture to be disinfected.

Or consider the authority given to local boards to pass ordinances upon the single subject of compelling the return of marriages, births and deaths. This is an authority which, I am informed, local boards have often been slow to exercise, and yet it is one of the most important duties in connection with the administration of the sanitary laws of the State, since, if properly done, it furnishes the State board of health, the superintendent of vital statistics and the public with most valuable facts relating to sanitary matters.

The authority to adopt ordinances upon the subject of securing the sanitary condition of tenement-houses, jails, prisons and other public buildings, or upon the subject of regulating the cleaning of sewers and the dumping of garbage, or upon the subject of regulating the manner of connecting house drainage with sewers and cess-pools, or upon the subject of protecting the public water-supply, or upon the subject of regulating the plumbing and drainage of public and private buildings, suggests further the broad scope of the powers which local boards may acquire by the simple passing of suitable ordinances.

From what has been said, it seems clear that if there be deficiency in the sanitary legislation as to any particular locality, it must be due to a lack of suitable local legislation rather than to any want of State legislation. Too much attention cannot be given to the subject of local legislation. There are certain general provisions relating to matters common to all localities that should be embodied in all local ordinances. But in addition to these general provisions there should be inserted in each local ordinance such special provisions as suit the particular locality for which the ordinance is intended.

In my judgment, it would be wise for the State board of health, and perhaps for the New Jersey Sanitary Association, to give more attention in the future than has been done in the past to the education of local boards of health in the matter of passing suitable local ordinances. I think it would be well for the State board to require every local board in the State to certify to the State board a copy of each of its ordinances. The State board might then publish with its report two or three of the best ordinances adopted by city boards, and two or three of the best ordinances adopted by township boards, as sample ordinances for the guidance of cities and townships generally. In this way local boards would receive aid in the performance of a most important duty.

There is one particular in which it seems to me the State law is deficient, and that is in its utter failure to furnish proper protection to the public water-supplies for our cities. Our rivers and streams are being converted into open sewers for our cities. There is no express prohibition in our statutes against conveying our city sewage into our natural streams. In England the public health act of 1875 contains this section: "Nothing in this act shall authorize any local authority to make or use any sewer, drain or outfall for the purpose of conveying sewage or filthy water into any natural stream or water-course, or into any canal, pond or lake, until such sewage or filthy water is freed from all excrementitious or other foul or noxious matter such as would affect or deteriorate the purity and quality of the water in such stream or water-course, or in such canal, pond or lake." The growing density of our population will more and more increase the necessity for putting a stop to the pollution of our streams. The evil is already intolerable. The State board of health, this New Jersey Sanitary Association and every citizen of the State interested in the well-being of his fellow-man—aye, interested in his own well-being—should join in demanding such legislation as will give relief and protection from so monstrous an evil as that of filling our streams with the sewage and fecal matter of our great cities. What the nature of such legislation should be is for sanitarians and experts to determine after learning the pertinent facts. When the facts have been gathered, and the suggestions of competent men who have studied the facts have been received, the aid of lawyers should be sought to put into proper legal form such laws as will accomplish the purposes suggested and secure the relief needed.

## RIVER POLLUTION.\*

BY E. J. MARSH, M.D., CHAIRMAN RIVER IMPROVEMENT  
COMMISSION.

The subjects of river pollution and the purity of public water-supplies have been so often and so thoroughly discussed in this association that I was somewhat surprised at a request to prepare a paper for their present meeting. There is little or nothing new to be added to what has been already written, but it appears that it is only by iteration and reiteration that the importance of the subject can be impressed deeply on the minds of the people and of the legislature.

In order to escape generalities, I shall take for my theme the history and present condition of the Passaic river, as it presents an excellent example of the subject in all its phases, except those of purification and redemption, and these, it is to be hoped, will be seen in the near future.

The tributaries of the Passaic river rise in the northern portion of the State, in the counties of Bergen, Passaic and Morris, an area of more than a quarter of a circle, with a radius of about thirty miles; one important branch of the river extends north into the State of New York. The northernmost branches, the Ramapo, Wynockie, Pequannock, rising in high, mountainous lands, unite and form the Pompton, which then flows for a few miles with little current and joins the southern or main branch of the Passaic. Some of the tributaries of the southern branch also rise in the highlands, but the course of the main stream is through a long extent of flat, swampy ground, with sluggish current, the fall of the river being only seven feet in twenty-one miles. From the juncture of these two main branches the river flows slowly—with a fall of two feet in three miles—to Little falls. Here the river cuts through the Second mountain, falling over a trap reef about forty feet; thence it runs four

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miles with occasional rapids to the Passaic falls at Paterson, where it breaks through First mountain, and falls seventy feet over another trap reef. Here it takes a circuitous course, passing through and around the city of Paterson, till it reaches the Dundee dam, about eight miles below the falls. This dam holds back the water for three miles, making it nearly stagnant in dry seasons. A very short distance below the dam the river becomes tidal at the city of Passaic.

At the dam just above the Passaic falls and at Dundee, the entire water-supply in dry seasons is diverted into canals for manufacturing purposes, and for weeks at a time no water whatever, except a small amount through leakage, passes down the channel of the river, until the water from the factories is returned. Below Passaic the river is tidal, and runs past Rutherford, Arlington, Kearny, Harrison and Newark, till it empties into Newark bay.

Little Falls may be considered as a dividing line, on each side of which the river presents different characteristics. On the lower division of the river are the cities of Newark, Passaic and Paterson, the large towns of Kearny and Harrison, and with the intervening country rapidly building up with the population overflowing from these cities and from New York. The river from Paterson to its mouth is polluted with the sewage and manufacturing refuse.

In the upper division the river flows through a mountainous and agricultural district, in which there are no large cities along its course. The growing towns of Butler, Boonton, Dover, Rockaway and Summit are on the tributaries, and other parts of the territory are also rapidly increasing in population, but the water still reaches Little Falls with little or no mark of contamination.

Newark was one of the earliest settlements of New Jersey. Paterson dates from 1792. Both have grown into large manufacturing cities. In 1860 Newark had a population of 72,000, and Paterson of 20,000, but at that time Newark had few sewers, and Paterson had none. In 1868-69 an abundant water-supply from the river was introduced into each of these cities, and at the same time an extensive system of sewers was commenced in Paterson. The water of the river was clear and pure, so that it was taken directly from the reservoirs for the supply of Newark and Jersey City, as it was believed that the small amount of sewage discharged by Paterson sewers was thoroughly oxidized and destroyed in its passage down the river.

The increase of population of these cities steadily continued, and new cities sprang up. Opposite Newark came Kearny and Harrison, and a few miles below Paterson, the city of Passaic developed from the old town of Acquackanonck. In 1895, Newark had a population of 215,000; Paterson, 98,000; Passaic, 18,000; Harrison and Kearny, 20,000. With this increase of population came necessarily a vast increase in the quantity of excreta, washings and manufacturing refuse, and as there was an abundant supply of water to carry it away, new sewers were opened freely into the river at the most convenient places.

In addition to this, the towns of Orange, East Orange, Bloomfield and Montclair, although lying back from the river, have also been permitted to bring their sewage to the river and discharge it there. The natural result has followed, and the formerly-pure Passaic river has become foul and offensive. As long as the quantity of sewage discharged was small, the large body of water in the river was able to dilute and transform without offense the refuse matter poured into it; but this limit of capacity was long ago reached, and constantly-increasing quantities are still daily discharged into it.

The entire flow of the river at Paterson is frequently, during dry seasons, not more than 125,000,000 to 150,000,000 gallons daily. This might, under favorable circumstances, dispose of five or six million gallons of sewage, but the sewage discharge of Paterson is 17,000,000 gallons, and the conditions are not favorable for purification. The current of the river is held back by the Dundee dam, so that for some miles the river is transformed into a lake, with little or no current, and in which much of the suspended matter is precipitated to the bottom or deposited on the banks, where it undergoes putrefactive decomposition and exhales odors. Much of the suspended, and all the dissolved, matter is carried down in the stream, where, at Passaic, it re-carries about one million gallons more of sewage, in addition to dyestuffs and manufacturing refuse. A small addition to the water of the river, however, comes in from Saddle river.

From Newark and the adjoining towns more than thirty millions of gallons of sewage is poured into the river through many sewer mouths. The quantity of water is now larger, on account of the inflowing tide, which, however, on the other hand, carries up the sewage and leaves it stranded on the banks.

An inspection of the river from its mouth to the Passaic Falls

shows everywhere water discolored and full of suspended matters; a succession of sewer mouths with outflowing sewage; factories and dye-houses discharging water of many hues; shores blackened with deposits of filthy mud. The residents along the river all agree in testifying that boating and bathing have ceased to be pleasures; that in warm weather such nauseous odors are exhaled that on hot summer nights they are obliged to keep the windows of their houses closed, and that in consequence of all this the houses are vacated and property values have decreased.

This picture represents the river at its driest and most unfavorable condition, and yet a condition which exists at some period of every year. After heavy rainstorms the river becomes swollen, and the current carries out to the sea the entire accumulation of putrefying water, and to some extent scours out the banks and bottom of the river.

A few years ago Newark abandoned the river as a source of water-supply, and its mortality from typhoid fever has diminished 70 per cent.; Jersey City still uses it, under a penalty of a continued high death-rate, but it is now taking measures to procure a pure supply; Paterson is able to use the river water, because it is taken above the city, and before any sewage has been received.

This description of the lower Passaic river, and its transformation from a clear, pure river to an open sewer, is an example of what has passed or is passing in almost every river of moderate size in the United States and in Europe. Such has been the history of the Thames, the Seine, the Spree, the Clyde, and such is now the condition of the Chicago and Providence rivers. London, Paris, Berlin, Glasgow, Chicago, Providence each discharged their sewage into the rivers until the condition became unendurable. In no instance does the evil seem to have been anticipated, or any serious attempt made to prevent its occurrence. The people in each city have seen their river become more and more foul and nauseous, but, as all suggested remedies were arduous and expensive, they shrank from engaging in the task till the conditions became intolerable. In London the odors from the Thames invaded the Parliament House, situated on the bank of the river, and this personal experience probably stimulated the legislators' zeal. It might be equally advantageous to have some of our city halls built on the banks of the Passaic.

This condition of affairs is not due entirely to culpable neglect, but

is very largely owing to the rapid and enormous growth of cities within the past fifty years. The increase of population has been at too rapid a rate for orderly and perfect development. The first necessities are those of food, clothing and shelter; after these come gradually all those conditions which make life comfortable and enjoyable—the paving of streets, the introduction of water, measures for cleanliness, including sewers, schools, churches, libraries, parks. These and many more provisions must be made for a social community. They cannot all be provided at once, as they require some accumulation of earnings and capital, but are taken up in what appears to be an imperative order. The order for the proper disposal of sewage and the purification of the river has now come to us of the Passaic valley, as it has come and will come to others. Fortunately, we are able to profit by the experience of those who are more advanced.

Taking up now the river above Little falls, an entirely different condition presents itself, and the chief question is that of preserving the quality of the water and protecting it from contamination. An analysis of the water at this point shows it to be of excellent quality for drinking and other domestic purposes. It is of very great importance that it should be kept permanently free from pollution, not only for the benefit of the citizens of Newark, Paterson and Passaic, who now use it, but for the other towns which are rapidly growing up, and which must rely on this river for their water-supply.

Much of this river runs through sparsely-settled, mountainous and agricultural lands, where the only possibility of contamination would come from the few inhabitants living close to the banks, or the discharge from factories at the various sites of water-power. There is more serious probability, and, in fact, actual threatening, of pollution from the towns of Butler, Boonton, Dover, Chatham and Morristown. These places are steadily growing in population, and, although they have as yet no system of sewers, yet they will soon be required, and would naturally discharge into the tributaries of the river. Summit has recently introduced a system of sewers, and the sewage, after imperfect filtration, drains into the river. The whole course of the river above Paterson requires careful watching, or else the water will soon become seriously polluted.

The Passaic river thus presents the question of river pollution in its different phases and in varying degrees, so that at some part of its source it may form a parallel with any other river in New Jersey. In

its upper tributaries it furnishes pure, sparkling water, with only that small amount of impurity common and necessary to streams flowing through forest and field. Along the middle of its course the growing towns drain the refuse matter from their streets and factories, and threaten to discharge their sewage into the river at no distant date. The last part of the river is polluted with the sewage and waste of large cities, till it has become at times almost similar to an open cesspool.

And now as to the remedies applicable to a river already seriously polluted, and the measures requisite for the prevention of impending pollution and the preservation of a pure water-supply.

The first step would be to stop the discharge of all crude sewage into the river. Such discharge must be absolutely prohibited. This measure could not go into effect until some other method of sewage disposal was provided, but some proper method should be at once planned and executed. The determination of the method is chiefly a question of engineering art, as to what may be most efficient and economical for the circumstances of each river. Whenever it is practicable, the plan of carrying the sewage into ocean currents, where it can be rapidly carried away and diluted, has proved most satisfactory. If this is not practicable, it will be necessary to effect a partial or complete purification, and return the water in an improved condition to the river. The method of purification must be determined by the conditions of each locality. But there is no method of disposal where the sewage will not, under some conditions, become a source of offense. The sewage must be collected into large tanks or reservoirs, or allowed to flow freely over areas of ground, and from these accumulations disagreeable effluvia will be given off; but the risk of nuisance can be reduced to a minimum. It may be expected to happen occasionally, even under careful and intelligent management, but too often, unfortunately, there is carelessness and indifference or inadequate provision. The maintenance of sewage works entails a considerable annual expense, but no more than the cleaning of streets and disposal of garbage, and this cleanliness is essential to the health and comfort of the citizens. The idea that sewage has any commercial value as a manure has been abandoned, and it must be regarded purely as dirty water, to be gotten rid of. If, in getting rid of it, the soil can be benefited, so much the better; but the disposal of the sewage, and not the fertilization of the soil, must be the aim.

These considerations refer to the sewage proper of a city; but there is additionally a large quantity of manufacturing refuse, which is of a different quality. Many millions of gallons are pumped up directly from the river to the factories, used for washing, dyeing and other purposes, and discharged again direct into the river. The impurity is often slight, though distinct. It might be an unnecessary expense to give this water the treatment required for other sewage, and unwise to divert it permanently from the river. It would seem to be neither unjust nor improper to require from the manufacturers some treatment at their own works. It would cause some expense to the first users, but those lower down the river would receive more water and of better quality. The necessity for, and the quality of, the purification should be determined with judgment and discrimination, for it would be impolitic to place an embarrassment or restraint on our industries. It could not be expected that the river would attain the degree of purity requisite for drinking water. However much those cities, which some years ago drew their supply of pure water from the lower Passaic, may demand or desire a return to that pristine condition, the idea is impossible of attainment. A river like the Passaic cannot flow through a large and closely-built city and remain clean and pure, even though not a single sewer should discharge into it. Still, there would be street and surface washings after rains, the casual pollution of persons living on its banks, crossing bridges or boating on it, refuse matter cast into it at night as an easy method of disposal. These would seriously affect its character, and no legislative enactments and no reasonable police protection would keep out the offensive matter.

There certainly should be laws providing that no sewer should discharge into the river, and cities should maintain efficient inspection and police control, and these measures would prevent any manifest nuisance. Wherever it could be done, also, the cities should acquire ownership of the river banks. A clear river flowing through a city brings with it abundance of fresh air, and the river and its banks ought to be carefully protected as part of the park system of the city.

We take up for consideration next the case of a river where pollution is only occasional, or imminent, from a rapidly-increasing population, such as might be represented by the section of the Passaic above the Passaic falls. The water is now pure, suitable for all domestic purposes, and so used, though occasionally suspected of taint.

It is extremely desirable that it should remain pure and retain its quality as a water-supply, but it will not do so unless precautionary measures are at once taken. A few individual houses now run sewers, and a few factories discharge their refuse into it. Villages and towns are growing on or near the banks of the river or of its branches. These towns are, or soon will be, large enough to introduce an abundant water-supply, and a sewer system will inevitably follow, and the sewage, crude or purified, will be conveyed to the river.

The requirements for this condition of affairs are stringent legislative enactments to keep out the pollution and the appointment of guardians, with authority to enforce the law. If the laws hitherto enacted are not sufficient, they should be properly amended. But laws will not enforce themselves, and therefore officers should be appointed whose special duty it should be to investigate or rectify the conditions or prosecute offenders.

The preservation of a proper quality to the water-supply is of vital interest to all the citizens of the State, and the duty of protection belongs to the State, and should not be left to private individuals or local communities. No sewer or drain connected with a house, or likely to contain human excreta or any organic matter of animal origin, should be permitted to discharge into the river; the discharge of the refuse of factories should be regulated; the plans for sewerage of towns should be submitted to the guardians, who should have power to compel a reasonable purification. Without such power the river would soon become, in parts, almost as offensive as it now is in its lower reaches. These measures would protect the river water for a long time, but eventually, with the increasing density of the population, it would receive too much impurity to be consumed for drinking purposes without special filtration, which could be provided by the individual cities using the water.

Lastly, we have the higher branches and tributaries of a river, where the pure water flows through mountainous, woody or agricultural districts, and where there is no prospect of any great increase in the density of the population. The dangers are few and the requirements simple. They have been already stated and are included in the requirements for the lower section of the river, namely, laws for the protection of the river from the pollution by small factories and by individuals, and guardians to enforce the law.

Thus there are two provisions demanded: First, the remedy for a

condition of existing pollution, and, second, the prevention of future pollution of pure streams. The former is more immediately urgent, but it is local and temporary, while the latter is far-reaching and perpetual. When the condition of pollution is removed the river will require protection to prevent a relapse. To effect these results, there will be needed efficient laws for the protection of the streams and the appointment of guardians to watch them and to enforce the laws.

The interest in the character of the streams is general and belongs to no section of the State; therefore, the duties and responsibilities of such guardians might best be intrusted to officers of the State in the form of some suitable board or commission. Such commission should have the ability and authority to advise, inspect and prosecute offenders. Either a new commission might be appointed for this particular duty, or it might be assigned to some existing board, perhaps re-organized in consideration of the special qualifications which would be required of its members. For particular rivers, like the Passaic, where the population is dense and the interests large and varied, it would probably be best to appoint special local boards. The responsibility of such a board would be necessarily very great, and its powers should be exercised with very great discretion. Sound advice, public discussion, persuasion, however, and warning when necessary, would generally accomplish the desired results.



## MEDICAL PRACTICE EXAMINATIONS.

The practice of medicine and surgery in New Jersey is regulated by several acts of the legislature,\* and since the passage of the act approved May 12th, 1890, all persons who have begun practice in this State have been obliged to submit to an examination into their fitness. The requirements which are now in operation are as follows:

1. Evidence that applicant is more than twenty-one years of age.  
2. Certificates of moral character from not less than two physicians in good standing, one of whom must be a resident of New Jersey.

3. Candidates must be graduates from an accredited literary or scientific college, or have completed satisfactorily not less than a three-years' course in an accredited high school or academy, or have received a preparatory education covering the following branches, viz., orthography, arithmetic, English grammar and composition, geography, history of the United States, algebra and physics, or what this board may consider their equivalent. Certified copies of academic credentials must be forwarded with the printed form of application for examination. Applicants unable to furnish such credentials may take a special examination before the State superintendent of public instruction of New Jersey, whose certificate is accepted by this board.

4. Candidates must have "received a diploma conferring the degree of doctor of medicine from some legally-incorporated medical college (which in the opinion of said board was in good standing at time of issuing said diploma) in the United States, or a diploma or license conferring the full right to practice all the branches of medicine and surgery in some foreign country, and have also studied medicine four years including three courses of lectures in different years in some legally-incorporated American or foreign medical college or colleges prior to the granting of said diploma or foreign license; provided, however, that two courses of medical lectures, both of which shall be either begun or completed within the same calendar year, shall not be considered to satisfy the above requirements.

*First Exemption:* Evidence of one year's service "as a member of the resident medical staff of any legally-incorporated, charitable or municipal hospital or asylum," or of five or more years of reputable practice of medicine and surgery, may be accepted as equivalent to one year's study of medicine and surgery.

5. All examinations shall be written in the English language, and the questions shall be, except in materia medica and therapeutics, such as can be answered in common by all schools of practice. If the applicant intends to practice homoeopathy or

\* Revised Statutes, pages 97, 172, 420, 675, 764; Revised Statutes Supplement, pages, 64, 457, 796; P. L. 1888, page 136; P. L. 1869, pages 271, 328; P. L. 1892, pages 24, 226, 237, 316; P. L. 1894, page 454.

eclecticism, the members of said board of those schools respectively shall examine said applicant in the materia medica and therapeutics of the school in which such applicant intends to practice; the examinations shall be in the following subjects, namely, (Sec. 1) materia medica and therapeutics, (Sec. 2) obstetrics and gynecology, (Sec. 3) practice of medicine, including diseases of the skin, nose and throat, (Sec. 4) surgery, including surgical anatomy and diseases of the eye, ear and genito-urinary organs, (Sec. 5) anatomy, (Sec. 6) physiology, (Sec. 7) chemistry, (Sec. 8) histology, pathology and bacteriology, (Sec. 9) hygiene and medical jurisprudence.

*Second Exemption:* "Applicants examined and licensed by, or who are or have been members of, State examining and licensing boards of other States, upon the payment of fifty dollars to the treasurer of said board, and on filing with the secretary of said board a copy of his or her license or certificate, certified by the affidavit of the president and secretary of such board, showing also that the standard of requirements of said board at the time said license or certificate was issued was substantially the same as that required by said board, and of his or her affidavit as to the personality thereof, may be granted a license by said board without further examination thereby." This exemption applies only to licentiates of the State boards of medical examiners of New York and Pennsylvania.

6. All persons commencing the practice of medicine or surgery, in any of its branches, in New Jersey, must apply to this board for a license so to do.

7. "Applicants for examinations shall present to the secretary of this board, at least ten days before the commencement of the examination at which he or she is to be examined, a written application on a form or forms provided by said board," together with a certified check or money order for twenty-five dollars, the regular examination fee. Application for the proper forms for the June examination should be made early in May, and for the September examination early in August. Do not send either academic or medical diplomas, unless requested to do so.

Examinations are held on the third Tuesday and Wednesday in June and September, in Trenton. The rules for conducting the examinations are as follows:

*First.* Help of every kind must be removed from the reach and sight of the candidate. Any candidate detected in trying to give or obtain aid shall be instantly dismissed from the room and his or her paper for the entire work canceled.

*Second.* Questions must be given out and answers collected punctually at the time specified for that section. Under no circumstances will papers be accepted unless the examination be actually held at the appointed time. The time for each examination paper of ten questions shall not exceed two hours.

*Third.* If any candidate withdraw himself or herself, without permission, from the sight of the examiner, his or her examination shall be closed. This rule permits a candidate, temporarily ill, to withdraw from the room and return only by the consent of the examiner.

*Fourth.* No candidate shall, under any circumstances, enter the examination more than thirty minutes late, unless excused by the examiner; and no candidate shall leave the room within thirty minutes after the distribution of question papers.

*Fifth.* All examinations shall be in writing. Candidates must furnish their own penholders and pens. Paper, blotters and ink will be supplied by the secretary.

*Sixth.* The examinations shall continue two days; the sessions of the first day being from 9-11, 11-1, 2-4, 4-6 and 8-10 respectively; the sessions of the second day being from 9-11, 11-1, 2-4 and 4-6 respectively. The final meeting of the board for the adjudication of the results of the examinations shall be held within two weeks thereafter.

*Seventh.* The examiner in each section shall not be engaged in any other business except supervising the examination while it is going on, and there shall be one or more associate examiners present with him during the entire session.

*Eighth.* A total average of 75 per cent, i. e., 675 points, shall be necessary to license a candidate (he or she having otherwise complied with the law), providing that in no one section shall the percentage be less than 50, in which case, however, the candidate may be granted a second examination immediately upon that section. A candidate having less than 50 points in more than one section shall be rejected—regardless of the total average.

*Ninth.* Each candidate shall sign the following pledge before commencing the examinations, viz.: "I hereby pledge my word of honor, without mental reservation or evasion, in any manner, that during my examinations before this board which I am now about to commence, I will neither give to a fellow-candidate nor receive from him or from any other source whatever, any information relating to the subject under consideration. Furthermore, I will write the number (given hereon opposite my name) upon all my examination papers as my official number."

[The Board may require an affidavit, upon the completion of the examinations, that this pledge has been faithfully kept.]

At the September examination, 1897, the following questions were submitted to the applicants for license:

## OBSTETRICS AND GYNECOLOGY.

E. L. B. GODFREY, M.D., EXAMINER.

1. (a) During which month in utero-gestation is the human form established? (b) State the shortest term at which a fetus may be born and live.
2. What changes in the position of the uterus are produced by pregnancy?
3. Describe the management of a face presentation.
4. Describe the management of a shoulder presentation.
5. Name (a) some of the causes of, and state (b) the treatment for, prolapse of the umbilical cord.
6. Describe Cr de's method of delivering the placenta.
7. Name the best methods to be employed during labor, in averting injury to the perineum.
8. Describe Ophthalmia Neonatorum—(a) its cause, (b) symptoms, (c) prognosis, and (d) prophylactic treatment.
9. Define (a) Menstruation, (b) Amenorrhœa, (c) Dysmenorrhœa, (d) Menorrhagia, (e) Metrorrhagia, and (f) the Menopause.
10. Name (a) some of the causes, and (b) the physical signs, of pelvic cellulitis.

## CHEMISTRY.

DAVIS P. BORDEN, M.D., EXAMINER.

1. Explain the Atomic theory.
2. Give the distinguishing characteristics of leucomaines and ptomaines.
3. State the most common and convenient antidotes for poisoning by mineral acids—Give course to be taken when the nature of the poison is unknown.
4. What is the chemical composition of bone?
5. What is the difference in composition between the ferrous and ferric compounds? Give formulæ of ferrous and ferric sulphates, ferrous and ferric oxides.
6. In what respects do H and O resemble each other? In what do they differ?
7. Name the principal pigments in normal urine.
8. What are the alkaloids? What simple inorganic compound do they resemble? What is the source of quinine, cocaine, morphine, nicotine, and narcotine?
9. How is potassium iodide made and for what is it used? Explain the reactions that take place when K. I. is treated with H<sub>2</sub> S. O.<sub>4</sub>
10. Describe Marsh's test for arsenical poisoning.

## ANATOMY.

ARMIN UEBELACKER, M.D., EXAMINER.

1. Give in language or by drawing the normal curvatures of the spinal column.
2. Describe the elbow joint.
3. Give origin, insertion, nerve-supply and function of any one of the following muscles: Biceps (flexor cubity), Sartorius, Semitendinosus.
4. Trace the venous blood of the small intestine to the heart.
5. Describe the œsophagus, and state its relations.
6. Give a general description of the peritoneum. Name the principal organs covered by it.
7. What muscles rotate the thigh outward?
8. Valves of the heart—their names and functions.
9. Give the differential anatomy of the male and female bladder. State the relative capacity of each.
10. What viscera are contained in the epigastric region?

## HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

GEORGE F. WILBUR, M.D., EXAMINER.

1. Give the relative proportion of white to red corpuscles in normal blood, and mention three pathological conditions in which this proportion is modified.
2. Describe three kinds of ulceration which may affect the small intestine.
3. What conditions must be fulfilled to demonstrate bacteriological causation of disease?
4. Outline briefly the lesions of gonorrhœa and syphilis.

## MEDICAL PRACTICE EXAMINATIONS.

5. How would you test well water for typhoid germs?
6. What are the characteristic signs of malignancy in tumors? Give examples.
7. What are the causes, symptoms and pathology of acute abscess?
8. Describe the varieties of acute conjunctivitis.
9. What is a probable theory as to the pathology of fever?
10. What is the differential diagnosis between the various eruptive fevers?

## HYGIENE AND MEDICAL JURISPRUDENCE.

CHARLES A. GROVES, M.D., EXAMINER.

1. What diseases are caused by impure water?
2. What are the tests for the more common impurities of water?
3. What are the dangers incident upon bicycling and what classes of patients should eschew this exercise?
4. (a) How much food should a healthy adult consume daily? (b) How much fluid?
5. (a) In selecting a residence for convalescents, what conditions are most favorable to recovery? (b) What foods are best?
6. In chronic starvation give (a) symptoms, (b) time of death, (c) post mortem appearance?
7. When is induced abortion lawful and what are the conditions in which it is called for?
8. Post mortem appearance in recent death from (a) apoplexy, (b) drowning, (c) poisoning by arsenic?
9. In a case of suspected infanticide, what are the evidences of live birth?
10. Define "adipocere" and state under what conditions it is found.

## HOMŒOPATHIC MATERIA MEDICA AND THERAPEUTICS.

ARMIN UEBELACKER, M.D., EXAMINER.

1. State source, physiological effect and clinical use of Rhus tox., Rhus glabra and Rhus venenata.
2. Mention the sphere of action of Hydrastis can.
3. Describe the headache of Glonoin.
4. State the throat symptoms of Apis mell.
5. Differentiate between Aconite, Bryonia, Rhus tox., Acid. salic., Cactus grand, in rheumatism.
6. Give differential symptoms indicating Rhus, Cantharis, Graphytes, Hepar sulphur, Ichthyol in eczema.
7. What condition of the pulse would call for Veratrum vir., Gelsemium, Arsenicum?
8. Name three remedies for Hydrothorax, Hydropericardium, Ascites.
9. Convulsions—when would you employ Belladonna, Cicuta, Gelsemium, Cuprum, Kali brom.?
10. Give three remedies for hay fever.

## ECLECTIC MATERIA MEDICA AND THERAPEUTICS.

DAVIS P. BORDEN, M.D., EXAMINER.

1. Tell what you know of *Jaborandi*.
2. Name the alkaloids derived from *Cinchona* and state the dose of each.
3. Define demulcent, tonic and sedative. Give examples of each.
4. What is the treatment of dysentery by the administration of *Ipecacuanha*?
5. State the medicinal uses of *Pilocarpus* and its alkaloids.
6. Differentiate between arterial and cerebral sedatives and give examples of each.
7. Give the common name, therapeutic uses, source and dose of *Sanguinaria*.
8. Tell what you know of aperients and their use.
9. State the therapeutic value of *Geranium Maculatum*, *Rubus Villosus*, *Xanthoxylum Fraxineum* and *Hydrastis Canadensis*.
10. What can you tell of the uses of vegetable acids, lemon juice and cream of tartar in the treatment of small-pox?

## SURGERY.

A. K. BALDWIN, M.D., EXAMINER.

1. Give some of the causes producing ulcers of the cornea.
2. Fracture of ribs—Symptoms, Complications, Treatment (Simple Fracture).
3. Describe the causation of and treatment for Housemaid's Knee (Chr. Bursitis).
4. Give the abnormal position of the parts found in fracture near the distal end of fibula. What muscles produce the deformity?
5. What are the varieties of club-foot? Treat any one of these varieties.
6. What are the causes and symptoms of acute gangrene?
7. What symptoms are observed in fracture of base of the skull?
8. Give the causes and treatment of abscess of the Antrum of Highmore.
9. Describe the process of repair in fractures.
10. Differentiate between a malignant and non-malignant neoplasm.

## PHYSIOLOGY.

EDWIN DE BAUN, M.D., EXAMINER.

1. Is there any albumen in the sclerotic coat of the eye?
2. Name the different kinds of cells found in the human body and give an example of each.
3. Mention some of the conditions which prevent or retard the coagulation of the blood.
4. What is the capacity of the auricles and ventricles, expressed in ounces?
5. What is the nervous mechanism of respiration?
6. Give the numbers of the teeth of first and second dentition and mention the names of the teeth of second dentition which do not occur in first dentition, stating the time of their eruption.
7. Describe a vascular gland and give seven examples of the same.

8. What is the function of the spinal cord?
9. Define cutaneous and muscular reflexes and give two examples of each.
10. What is the function of (1) cerebellum, (2) iris, (3) cochlea, (4) membrana tympani and (5) eustachean tube.

## PRACTICE OF MEDICINE.

WILLIAM PERRY WATSON, M.D., EXAMINER.

1. Describe (1) symptom, (2) sign, (3) crisis, (4) lysis, and (5) auscultatory percussion, and give an example of each.
2. Describe the eruption of (1) *rubeola*, (2) *variola*, and (3) *scarlatina*.
3. Describe (1) mitral and (2) aortic obstruction.
4. Describe the rales.
5. Describe the physical signs of a large cavity (1) with elastic walls, and (2) communicating with a bronchial tube.
6. Differentiate laryngismus stridulous and pertussis.
7. Differentiate ulcer and cancer of the stomach.
8. Differentiate amyloid disease and cirrhosis of the liver.
9. Differentiate acute nephritis and acute cystitis.
10. Differentiate acute myelitis and multiple neuritis.

## MATERIA MEDICA AND THERAPEUTICS.

WILLIAM L. NEWELL, M.D., EXAMINER.

1. Differentiate the symptoms of poisoning between *Atropia* and *Morphia*.
2. Describe the difference in physiological action between *Opium* and *Chloral Hydrate*.
3. What drug sometimes produces strangury?
4. What drug, when used hypodermically, will produce emesis?
5. What are the symptoms produced by a toxic dose of *Carbolic Acid*?
6. Name two Galactagogues, two Sialogogues, two Cholagogues and two Emmenagogues.
7. What are Anthelmintics?
8. What are the symptoms of poison by Tobacco?
9. Name two drugs which are used to produce Diaphoresis and two which are used to produce Diuresis.
10. What is the difference in symptoms between Iodism, Mercurialism and Cinchonism?

# CONTAGIOUS DISEASES OF ANIMALS.

BY A. CLARK HUNT, M.D.

In compliance with the law placing contagious diseases of animals under the supervision of the State board of health, the following report of cases reported during the year is submitted :

## TUBERCULOSIS.

Since the formation of the special tuberculosis commission of the State board of agriculture, it has been the custom to refer all cases of this disease to that department. Ten cases have been reported to us, and in all but one instance the parties reporting have been directed to apply to the commission or the reports have been taken directly to Mr. Franklin Dye, secretary of the commission.

One case was reported as pleuro-pneumonia, but physical examination gave negative results.

## ACTINOMYCOSIS (LUMP JAW).

Our aid was sought in dealing with several cases of this disease, which were discovered in the stockyards in Jersey City. The city health officer was uncertain as to what powers were conferred upon him in such cases. As the animals were in transit, and not to be slaughtered for use in Jersey City, no ordinance of the local board of health was found that would apply to the case. After examining the law carefully, and getting the opinion of two veterinarians that the disease was not contagious, the matter was left in the hands of the United States government inspector stationed in Jersey City, with the request that he should notify the health officer of any city to which the animals should be shipped.

## HOG CHOLERA.

Three reports have been received as to this disease.

On account of the uncertain knowledge as to methods of dealing with hog cholera, nothing has been done to assist those suffering from losses.

The number of deaths of hogs during the past year has not been as great as in 1896, but the loss is still a serious one, and the United States government is giving the matter careful consideration. Until some definite form of treatment is discovered, the only method of limiting the spread is by isolation of the affected animals and disinfection of premises where the disease has occurred.

Several complaints have been received to the effect that some individuals have killed swine affected with cholera and offered them for sale. Such action is a violation of the laws relating to the adulteration of foods and drugs, and should receive prompt punishment.

## SPINAL MENINGITIS.

A report was received from Millville stating that one individual had three horses suffering from this disease. Two of this number recovered and the third animal died.

## HYDROPHOBIA (RABIES).

A horse, owned in Springfield, was bitten by a rabid dog, and Dr. W. Runge, of Newark, made an examination. The animal was kept apart from others, and, although the case was reported in August, the animal was not destroyed until November, as the symptoms did not develop for that length of time.

Several dogs were destroyed in Elizabeth suffering from rabies, and laboratory examination confirmed the diagnosis of the disease.

Two hogs, owned near Skyesville, were reported as having hog cholera. Dr. Harker, V.M.D., of Trenton, examined these animals and, as they had been bitten by a rabid dog, was of the opinion that the disease was rabies, and not hog cholera.

## GLANDERS.

During the year, forty-one cases of this disease have been reported. Seven upon examination were excluded as not having the disease. Thirty-four of the horses have been destroyed and premises disinfected.

Ten cases were reported from Jersey City.

As a number of the cases occurred in Newark, we insert the report of W. Runge, D.V.S., as to cases under his supervision:

November 8th, 1896, Mr. Chas. Schilling, No. 31 Komorn street, Newark, N. J. reported a horse suspected of having glanders. Upon examination I found that this horse, as well as Mr. August Bankistel's horse kept in the same stable, showed symptoms of the disease. In response to a telegram to you, a mallein test was directed to be made, which was done November 9th, 1896. The post-mortem made November 11th proved chronic pulmonary glanders in Mr. Schilling's big horse and an acute infection of Mr. Bankistel's horse.

On November 20th, 1896, I received a telegram directing me to visit the Jersey City stockyards to examine some cattle affected with actinomycosis. After a conference in the board of health office, with the Jersey City health officer and the veterinarians of the bureau of animal industry, the animals were turned over to the United States government officers.

November 29th, 1896, I found a case of glanders in the stable of Geo. McGrath, No. 17 Hunterdon street, Newark, N. J. The animal, a brown horse sixteen years old, was killed. At the post-mortem made November 30th, 1896, the animal proved to have pulmonary glanders and farcy. The stable was disinfected. The animal had been purchased from E. J. Tompkins, No. 345 Warren street, Newark, N. J., whose stable is located at No. 19 Hunterdon street. His stable was also disinfected. Mr. Tompkins' two other horses did not show any symptoms of the disease.

On December 29th, 1896, Peter Ballantine, Freeman street, Newark, N. J., reported a horse with glanders. The animal was killed, with the firm's consent. The post-mortem showed an acute case of glanders. The stable was disinfected and a general examination of the eighty horses in the large stable made January 1st, 1897, resulted in quarantining five horses. The mallein test made on these five horses at the firm's expense, showed negative results.

On May 4th, 1897, Dr. J. T. Glennon, No. 146 Summer avenue, reported a suspicious case of glanders in the stable of Mr. George Lesley, No. 211 Berkeley avenue, Newark, N. J.

The mallein test, made May 5th, showed a local and general reaction. The post-mortem, made in the presence of Dr. Glennon, proved the existence of pulmonary glanders.

Mr. Lesley disinfected his stable according to instructions.

His other horse is in a healthy condition.

On June 20th, 1897, I went to Plainfield, in consultation with Dr. Lockwood, of Woodbridge, to examine some cases of glanders in that vicinity. Two animals were destroyed.

On August 2d, 1897, I went to Springfield, at your request, to investigate a complaint sent by Stephen Woodruff, township clerk of Springfield township, Essex county, N. J., about a horse belonging to Theodore Reeves, which had been bitten by a dog supposed to be affected with rabies.

On August 6th, 1897, Dr. J. W. Hawk notified the Newark board of health that there was a horse suffering with glanders, in the stable of James Peters, Sherman avenue and Earl street, Newark, N. J. Upon investigation I found two horses affected with the disease, one of them in a dying condition. I served quarantine notice, which has been removed since. The owner consented to have both of the horses killed, and the post-mortem proved chronic pulmonary glanders in both cases. The third horse was removed to a shed near the premises, and the mallein test gave negative results. Mr. Peters has no water-supply on his premises, and used the public watering fountain up to the last day. I had the three nearest his place turned off disinfected and repainted before being used again.

August 7th, 1897, A. Gauch, Chestnut street and Elm road, Newark, N. J., reported, a gray mare affected with glanders. The animal was killed, and the post-mortem, made August 8th, 1897, proved chronic glanders and farcy. The quarantine was served but has been removed since. The stable was disinfected under the supervision of the local board of health. The other animals, two mules and one bay horse, did not react on mallein test made August 11th, 1897, by your order.

August 9th, 1897, Dr. O. Leis, V.S., reported a case of glanders at Mr. Fitzpatrick's, No. 150 Thirteenth avenue, Newark, N. J. The owner agreed to have the animal killed. The post-mortem made the same day in the presence of Dr. O. Leis, showed acute glanders. The stable was disinfected at once. The remaining five horses are in a healthy condition.

August 12th, 1897, Dr. O. Leis, No. 38 Frederick street, notified me that he had a case of glanders in his own stable, the animal belonging to an Italian named Delissa, No. 60 Jackson street, and was brought to him the night before as a patient for treatment. The post-mortem showed acute glanders. The other three horses of Delissa are apparently in a healthy condition. Delissa's, as well as Dr. O. Leis' stable, was disinfected. Mr. Delissa had the diseased animal kept in a New York stable previous to bringing it to Dr. O. Leis' stable. I sent the particulars to the New York board of health.

On August 14th, 1897, a report came to me that Robt. Kaelber, No. 59 Green street, had a glandered horse. Upon examination I found a gray mare, submaxillary glands swelled on left side of left hind leg, twice the size of the other one, and dark-reddish injection of the mucous membrane of the nostrils. I advised the owner to keep the animal separated. A second examination made five days later showed that most of these symptoms had disappeared and the animal was improving.

In the evening of August 19th, 1897, the Society for prevention of Cruelty to Animals arrested Chas. Schanbacher, No. 90 Wilsey street, for driving a horse covered with sores and in a dilapidated condition. Clayton & Hoff, livermen, refused to take the animal in their stable, so a constable tied it to a post in the old graveyard on Broad street. On the morning of August 20th, I made an examination and found that the horse had glanders. The post-mortem verified my diagnosis. Mr. Schanbacher, the owner, has left town and I have been unable to find out where the animal came from; therefore no disinfection has been done.

August 21st, 1897, Mr. B. Kolbert, a vender, was stopped with his horse and wagon

and turned away from the market, by the market clerk claiming that the horse had glanders. The animal was suffering from bronchial troubles.

August 26th, 1897, Dr. J. Little, 396 Broad street, reported a case of glanders at a Mr. C. Lantz's stable, Bloomfield avenue. After reporting the circumstances, a mallein test was ordered, which was made August 20th, showing negative results.

On August 27th, 1897, I received a telegram directing me to go to Bloomfield at once, to meet Dr. Harrison, V.S. I found a horse belonging to Mr. E. J. Clark, a contractor, suffering badly from purpura hæmorrhagica, with symptoms of glanders. The owner was willing to have the animal killed. The post-mortem, made in the presence of Dr. Harrison, proved the case to be one of pulmonary glanders, and the premises were disinfected. The other horse in the stable proved to be healthy.

August 29th, 1897, Dr. Kaiser, V.S., reported a case of glanders at Loehenberg's stable, No. 71 Wilsey street. Upon examination, I found that there were reasons for suspicion, and, therefore, I advised him to make a mallein test. On August 30th, 1897, the doctor reported negative results.

On August 31st, 1897, the market clerk stopped at the public market a glandered horse, owned by Mr. C. Gross, Sixth avenue and Thirteenth street. Upon examination, I found nothing but chronic bronchial catarrh.

On September 2d, 1897, Mr. C. Hawk, North Arlington, N. J., reported to me that he had glanders at his place, and that Dr. W. J. Fredericks, V.S., Franklin avenue, Delawanna, had killed one of his horses on that account. By your orders, I went to see Mr. Hawk's farm September 4th, 1897, but was unable to find any trace of glanders. The animal killed had been kept from June 4th to August 27th, 1897, at the place of Mr. Hafendorf, No. 25 Paterson avenue, South Rutherford, N. J. As Dr. Fredericks claims positively that the horse he killed had glanders, I induced Mr. Hawk and Mr. Hafendorf to have the premises disinfected.

It is our custom in all cases of glanders, where there is any doubt as to diagnosis, to have the mallein test applied, but where the case is clear to a competent veterinarian the animal is destroyed without further delay.

In all cases animals that have been exposed are examined and kept under surveillance for several days. Premises are always thoroughly disinfected, and in many instances mangers, floors and side partitions of infected stalls are torn out and replaced.

The year, taken throughout, has been one in which the contagious diseases of animals have caused less loss than is usual. This is due to a better knowledge on the part of owners of the necessity of at once notifying the proper authorities as to the existence of the disease and a willingness to co-operate in every way in limiting its spread.

## NEW JERSEY SANITARY ASSOCIATION.

The association held its twenty-second annual meeting in Lakewood, on December 11th and 12th, 1896. The meeting was largely attended, and the papers and discussions proved to be extremely interesting and valuable. Following is the announcement and programme:

### TWENTY-SECOND ANNUAL MEETING

THE NEW JERSEY SANITARY ASSOCIATION,

TO BE HELD AT THE LAUREL HOUSE, LAKEWOOD, N. J.,

*Friday and Saturday, December 11th and 12th, 1896.*

OFFICERS, 1896.

President—Shippen Wallace, Ph.D., Burlington.

First Vice President—James Owen, C.E. Montclair.

Second Vice President—John C. Smock, Ph.D., State Geologist, Trenton.

Third Vice President—Superintendent Vernon L. Davey, East Orange.

Recording Secretary—James A. Exton, M.D., Arlington.

Corresponding Secretary—Professor J. Madison Watson, Elizabeth.

Treasurer—George W. Howell, C.E., Morristown.

### MEMBERSHIP AND OBJECTS OF THE ASSOCIATION.

The New Jersey Sanitary Association is composed of professors and teachers in our colleges and schools, municipal officers, health officers, lawyers, physicians, clergymen, civil engineers, sanitary engineers, architects, plumbers and other citizens of our State interested in sanitation as related to our homes, our schools and our municipalities.

Any citizen may become a member of the State association on application to the secretary or any member of the executive council on the day of meeting. The membership fee is one dollar per annum, payable in advance.

The objects of the annual meeting are the presentation of facts, the comparison of views and the discussion of the methods relating to the prevention of sickness and of untimely deaths. The association also, through the annual meeting, seeks to impress upon the public the importance of securing wise and preventing harmful sanitary legislation, and also to aid the State and local boards of health in their efforts to secure better administration of our health laws for the good of our citizens and the increase in healthfulness and prosperity of our State.



By an arrangement between this association and the State Board of Health, a part of the annual meeting is devoted to such special subjects as relate to the work of local boards of health. Every local board should have present at this meeting its assessor, physician, inspector or some other active member. The information secured for the benefit of each locality far more than compensates for the slight expense. It is the request of the State board that every local board be represented.

## FIRST SESSION.

*Friday, December 11th, at 2.30 P. M.*

1. Report of the Committee of Arrangements, Isaac Hull Platt, M.D., Lakewood.
2. Statement of the Objects of the Association, Shippen Wallace, Ph.D., President.
3. Report of Committee on Inspection of Factories, Joseph Wm. Stickler, M.D., Chairman.
4. Report of Committee on Improvement of Sanitary Administration in Townships, Jas. A. Exton, M.D., Chairman.
5. The Public Health Laws of New Jersey, Judge W. M. Lanning, Trenton. Discussion—Samuel A. Patterson, Esq., Thomas P. McKenna, Esq.
6. Inspection of Dairies, Geo. W. McGuire, State Dairy Commissioner, Trenton. Discussion—Franklin Dye, Esq., Secretary State Board of Agriculture.
7. Treasurer's Report.

## SECOND SESSION.

*Friday, December 11th, at 8 P. M.*

8. Prayer by Rev. Chas. H. McClellan, D.D., Lakewood.
9. Progress in Public Hygiene, Professor C. F. Brackett, M.D., LL.D., Princeton.
10. Influence of Schools upon the Spread of Diphtheria, Samuel H. Durgin, M.D., Health Officer, Boston, Mass. Discussion—Professor J. M. Balston, James Owen, C. E.
11. The Influence of Clean Streets upon the Health of our Cities, Geo. E. Waring, Jr., C.E., Commissioner of Streets, New York City. Discussion—Henry C. Greene, Esq.
12. Water-supply of the City of Newark, illustrated with Lantern Views, Herbert B. Baldwin, Chemist of City Health Board, Newark.

## THIRD SESSION.

*Session will Commence at 9 o'clock.*

13. Bacteriological Investigations and the Advantages offered by the State Laboratory, H. D. McCormick, M.D., Princeton.
14. Infectious Diseases among Animals, William Herbert Lowe, D.V.S., Paterson.
15. Improvement of the Newark Meadows, J. C. Smock, Ph.D., State Geologist.
16. Milk: How it should be Collected, Transported and Stored, Prof. Edward B. Voorhees, Ph.D., New Brunswick. Discussion—Richard Pearce Francis, M.D.
17. River Pollution, E. J. Marsh, M.D., Chairman River Improvement Commission.
18. Duties of Health Officers, John L. Leal, M.D., Paterson. Miscellaneous Business, Election of Officers, Unfinished Business, Adjournment.

## COMMITTEES.

## LOCAL ARRANGEMENTS.

Isaac Hull Platt, M.D., Chairman; W. J. Harrison, Esq., Capt. A. M. Bradshaw, G. W. Stockley, Esq., Prof. J. W. Morey.

## LEGISLATION.

Hon. George P. Olcott, Henry Mitchell, M.D., L. B. Ward, C.E., Judge Edward S. Atwater, James Owen, C.E., Hon. William I. Lewis.

## FACTORIES.

Joseph W. Stickler, M.D., O. W. Braymer, M.D., Prof. H. B. Baldwin, W. McD. Struble, M.D., D. W. Benjamin.

## SANITARY ADMINISTRATION IN TOWNSHIPS

James A. Exton, M.D., C. F. Brackett, M.D., LL.D., D. E. English, M.D.

## PUBLICATION.

H. Brewster Willis, Esq., Geo. W. Howell, C.E., James Owen, C.E.

Authors of papers are requested to limit them to twenty minutes. The speakers who lead the discussions will be allowed ten minutes, all others five minutes.

The admission to all the sessions of the annual meeting will be free, and ladies are cordially invited.

The Laurel House, in Lakewood, one of the best in the State, generously offers to delegates and the accompanying members of their families, one-half their usual rates, or \$2 per day, the reduced rate holding good over the Sabbath following. If possible, write for your rooms on or before December 9th.

Editors of newspapers in the State, who are disposed to promote the sanitary welfare of the communities they represent, are requested to call attention to the meeting and to the subjects under discussion. It is desirable that they should be present in person or by proxy.

All members are requested to register and pay the annual fee (one dollar) to the Treasurer or Secretary.

## EXECUTIVE COUNCIL (WITH ASSOCIATION OFFICERS).

Daniel Strock, M.D., Chairman, Camden.  
 Charles B. Brush, C.E., Hoboken.  
 W. G. Hoopes, Architect, Atlantic City.  
 Judge William M. Lanning, Trenton.  
 William Pierson, M.D., Orange.  
 Prof. C. M. Davis, Bayonne.  
 H. R. Baldwin, M.D., LL.D., New Brunswick.  
 M. N. Baker, C.E., Montclair.  
 John L. Leal, M.D., Paterson.

Joseph H. Powell, Esq., Bridgeton.  
 Mortimer Lampeon, M.D., Jersey City.  
 G. J. Von Schott, M.D., Passaic.  
 George W. Rockfellow, Esq., Plainfield.  
 Herbert B. Baldwin, Chemist, Newark.  
 Prof. H. B. Cornwall, Ph.D., Princeton.  
 Judge Edward S. Atwater, Elizabeth.  
 David Harvey, Counselor, Asbury Park.  
 William Elmer, M.D., Trenton.  
 Joseph W. Stickler, M.D., Orange.  
 Henry S. Scull, Esq., Atlantic City.  
 Talbot W. Chambers, M.D., Jersey City.  
 H. B. Francis, Esq., Camden.  
 H. B. Willis, Counselor, New Brunswick.  
 H. C. Greene, Esq., Arlington.  
 Isaac Hull Platt, M.D., Lakewood.  
 Richard H. Reeve, Esq., Camden.  
 S. R. Morse, Esq., Atlantic City.

## HONORARY MEMBERS OF COUNCIL.

Ex-Presidents C. F. Brackett, M.D., LL.D., Princeton; Prof. Albert R. Leeds, Ph.D., Hoboken; L. B. Ward, C.E., Jersey City; McRee Swift, C.E., New Brunswick; W. K. Newton, M.D., Paterson; James C. Bayles, C.E., Orange; F. Gauntt, M.D., Burlington; James M. Green, Ph.D., Principal State Schools, Trenton; Henry Mitchell, M.D., Secretary State Board of Health, Asbury Park; D. Benjamin, M.D., Camden; George P. Oicott, C.E., East Orange; E. L. B. Godfrey, M.D., Camden; Carrol Ph. Bassett, C.E., Ph.D., Newark; Addison B. Poland, Ph.D., New York City; David C. English, M.D., New Brunswick.

## CIRCULARS AND LAWS.

The following circulars will be sent to local boards of health upon request:

- CIRCULAR 7.—Protection to Bathers.  
 " 42.—As to Petroleum, Kerosene, &c.  
 " 45.—Cholera  
 " 59.—Laws and Regulations as to the Adulteration of Foods and Drugs.  
 " 60.—Laws Relating to Public Health.  
 " 61.—Care of Household Wastes.  
 " 65.—Construction, Plumbing, Ventilation and Drainage of Buildings.  
 " 66.—Marriage, Birth and Death Returns.  
 " 67.—Care and Burial of the Dead.  
 " 69.—Meat, Poultry, Game or Fish as Foods—How to Judge Quality.  
 " 70.—Bulletin No. 1.  
 " 72.—Vital Statistics.  
 " 79.—Laws Concerning Marriage.  
 " 81.—Bulletin No. 2.  
 " 83.—Tuberculosis.  
 " 86.—Bacteriological Diagnosis.  
 " 87.—Dangerous Communicable Diseases.  
 " 88.—Laws Relating to the Public Health.  
 " 89.—Bulletins Nos. 3 and 4.—(Reprint.)  
 " 90.—Ice.  
 " 91.—Maritime Quarantine.

## NEW CIRCULARS.

Two new circulars have been issued during the year, viz., Circular 90, relating to the cutting and sale of ice, and Circular 91, relating to maritime quarantine. Circulars 84 and 85 have been re-arranged and reprinted, and the new issue is known as Circular 89.

## CIRCULAR 89.

## CONTENTS.

1. New Boards of Health.
2. City Clerks as Registrars of Vital Statistics.
3. Reports and Records of Communicable Diseases.
4. An Act for the Protection of the Public Health.
5. Mortality from the Chief Preventable Diseases.

6. Incubation Periods of Communicable Diseases.
7. Vacher's Table.
8. Whitelegge's Table.'
9. Disinfection of Rooms.
10. Schedule for Inquiry Concerning Epidemic Outbreaks.
11. House-to-House Inspection Records.
12. School-Houses.
13. Licensing Milk Dealers.
14. To Prevent the Spread of Disease by Milk.
15. Regulating the Sale of Milk.
16. The Prevention of Blindness.
17. Legal Difficulties in Sanitary Work.
18. The Storage and Collection of Garbage.
19. Sanitary Districts in New Jersey.

**New Boards of Health.**

One of the results of the school law of 1894 has been to cause many new municipalities to spring into existence, not less than twenty-five new boroughs having been established in Bergen county alone. Each of these newly-incorporated boroughs becomes at once a separate sanitary district, and the organization of a local board of health is one of the duties devolving upon the mayor and council.

This procedure is authorized and required by Section 9 of Chapter LXVIII. of laws of 1887.

The following form for an ordinance is suggested for adoption by the governing body of the municipality, and it is the first step to be taken in the creation of a local board of health :

AN ORDINANCE relating to the board of health of the (here name the place).

1. BE IT ENACTED by the (name of governing body) of the (name of place), That there shall be in and for this (borough or other municipality) a board of health in accordance with "An act to establish in this state boards of health and a bureau of vital statistics, and to define their respective powers and duties," approved March thirty-first, one thousand eight hundred and eighty-seven, and the several supplements thereto.

2. And be it enacted, That the said board of health shall consist of (five or seven) members, and that (here name each member who is to serve) are hereby appointed to constitute the said board of health of this (borough or other municipality); that .....and.....shall hold said office for one year; that.....shall hold said office for two years; that.....shall hold said office for three years; that.....shall hold said office for four years; all members of said board hereafter appointed shall hold said office for the term of four years, except in the case of vacancies; vacancies shall be filled for the unexpired term.

3. And be it enacted, That said board of health shall adopt rules and regulations for its own government and shall elect a president from among its own members.

4. And be it enacted, That said board of health shall appoint a registrar of vital statistics, clerk and sanitary inspector, and they may also appoint such other officers or assistants as said board of health may deem necessary; all appointees of said board of health shall be governed by the rules of said board, and they may be removed for cause by said board; the police officers of this (borough or other municipality) shall be special sanitary inspectors, and they shall promptly report to the board of health every violation of the health ordinances of this (borough or other municipality) which may come within their observation or knowledge.

5. And be it enacted, That the said board of health shall not contract any debts of any kind beyond the amount of the appropriations first made for its use by the (here name governing body).

6. And be it enacted, That this ordinance shall go into effect on the (here name day of week and month and the year).

Passed....., 189...

Approved ..... , 189... , Clerk.

Attest— ..... Mayor.

..... , Clerk.

After the members of the board have been duly notified of their appointment, they should appear before the mayor or some other officer authorized to administer oaths, and qualify in the usual manner. The following is a form in general use :

State of New Jersey, County of....., ss.—....., being duly sworn, on his oath deposes and says that he will faithfully and impartially discharge the duties imposed upon him as a member of the board of health of.....

Sworn and subscribed to before me this..... day of....., 189...

....., Notary Public.

The board of health may now proceed to elect a president from among its own members, and also a clerk (or secretary), medical officer, sanitary inspector and registrar of vital statistics.

One of the first steps for the local board to take is to make rules for the direction of the work of the inspector. The best service which can be performed by this officer is to systematically observe and record all conditions affecting health which exist on every premises in the sanitary district which is under the local board's jurisdiction. One street after another should be taken up in turn, and every building should be examined sufficiently to learn all that relates to its sanitary history and condition. These facts should be recorded on blanks conveniently arranged for the purpose. On page 19 of this circular will be found suggestions for making these records.

Ordinances should be prepared and adopted by the board, for, although action can be taken for the abatement of nuisances, &c., under the law, without regard to ordinances, yet very many matters of great importance to the health of every community can be reached only through the enforcement of suitable ordinances. By sending to the clerks of the old-established boards in the State, copies of the ordinances which have been found to be useful can be obtained.

City Clerks as Registrars of Vital Statistics.

Section 4, of Chapter XXXIX., laws of 1888, provides that "every certificate of marriage or birth required to be made by the first and second sections of this act shall, in any city, borough, town and other local municipal government, be transmitted to the registrar of vital statistics, if there be such officer, and if not, then to the clerk of the city," &c. Section 12, sub-section VII., of Chapter LXVIII., laws of 1887, authorizes local boards of health to make ordinances "to compel the return of all births, deaths and marriages by physicians, midwives, nurses, clergymen, magistrates and other persons professionally officiating at such death, birth or marriage."

Section 31 of the act last referred to (viz, Chapter LXVIII., laws of 1887) provides that local boards of health may appoint officers to carry into effect the ordinances which they may make (including a registrar of vital statistics).

Chapter CCLX., laws of 1895, provides that no dead body of any person who shall have died of any communicable disease shall be transported or removed by any common carrier until a permit therefor shall be first obtained from the local board of health.

Chapter LXVIII., laws of 1887, section 12, sub-section XIV., empowers local boards of health to make ordinances "to regulate the burial and disinterment of human bodies."

The foregoing references show that the laws place upon local boards of health the duty of regulating the burial, disinterment and transportation of the bodies of the dead, and it is clear that city clerks have only a chance relation to these matters. But when boards of health neglect to appoint a recorder or registrar of vital statistics, then the law says the city clerk shall perform this service.

Reports and Records of Communicable Diseases.

Only a few minutes each day is needed in which to write the morbidity records of local boards of health, but no effort should be spared to minimize this labor and to simplify the method employed.

Once having adopted a suitable system for keeping the records and becoming accustomed to the routine, the work is no longer irksome, and, as the recording officer becomes interested in the facts with which he is dealing, the duty becomes pleasurable.

Without an orderly system, however, all record-keeping is drudgery, and if mistakes and errors are allowed to creep in, the whole subject assumes a most distasteful character.

The following forms for reports and records of communicable diseases are in use by one local board, and they are published here to bring out criticisms and suggestions, and thus perhaps in a future issue of this series of circulars other and more convenient blank forms may be presented :

Blank to be Filled by the Attending Physician.

BOARD OF HEALTH OF .....  
 ....., 189...

The following is an extract from section 1 of chapter 266, laws of 1895:

1. That every physician shall, within twelve hours after his first professional attendance upon any person who is suffering from cholera, yellow fever, typhus fever, leprosy, plague, trichinosis, small-pox, varioloid, enteric (or typhoid) fever, diphtheria, membranous croup, scarlet fever, or any other contagious, infectious or communicable disease which hereafter may be publicly declared by the state board of health to be preventable and specially dangerous to the public health, report such sickness to the clerk of the local board of health having jurisdiction over the territory within which such sickness may be or if such local board of health shall have designated some other officer thereof to receive such reports, then to such officer, which report shall be in writing signed by such physician, and shall set forth the name, age and precise location of the person suffering from such disease. \* \* \*

1. Full name of patient.....
2. Age ..... 3. Sex..... 4. Color.....
5. Place of residence (give street and number).....
6. Name of disease.....
7. Date of attack .....
8. Remarks .....

....., M. D.

These blanks are provided and paid for by the local board of health and are furnished to all physicians practicing in the vicinity. They are bound into books of fifty each, so that the stub may be kept by the physician for convenient reference. The State board of health does not supply these blanks.

STUB OF REPORT OF  
 COMMUNICABLE  
 DISEASES.

Name.....  
 Age.....  
 Sex.....  
 Color.....  
 Disease.....  
 Date of attack.....  
 Date of report.....  
 Remarks.....

.....  
 .....



cate certified to have been reported, unless such notification shall be found to have been erroneous; and any physician, house-owner or householder who shall refuse or neglect to perform the duty hereinabove required of him shall be liable to a penalty of fifty dollars.

2. *And be it enacted*, That the facts contained in every report filed with the clerk or other officer of any local board of health, pursuant to the provisions of the first section of this act, shall be entered by the officer to whom the same shall be delivered in a book kept exclusively for that purpose, which book shall be subject to the inspection of the local board of health and its proper officers, and to the state board of health and its officers only; the officer of the local board of health to whom such report shall be delivered, and whose duty it is to make record of the same, as in this section above set forth, shall also, at least once in each week, and daily when required by the state board of health, transmit the facts stated therein by mail to the board of health of the state of New Jersey, at Trenton, and shall further keep the said state board of health constantly informed concerning the measures which are employed by the local board of health to prevent the spread of the diseases in such reports mentioned, which facts and information shall be conveyed to the said state board of health in writing, and upon such blank forms as may be furnished by the said state board of health; any officer whose duty it is to make any report to said state board of health as in this section above provided, and who neglects or fails to perform such duty, shall be liable to a penalty of fifty dollars for each and every such neglect or failure of duty.

3. *And be it enacted*, That it shall be unlawful for any common carrier to accept for transportation, or to transport or carry within this state any person affected with any of the contagious, infectious or communicable diseases named or referred to in the first section of this act, or any infected article or articles of clothing, bedding or other property whatsoever, or the body of any person who shall have died of any of said contagious, infectious or communicable diseases, except the same be enclosed in an hermetically-sealed casket, and except a license for such transport be first obtained in writing from the local board of health of the municipality or township in which the said infected person, infected articles or dead body may be located; and any common carrier knowingly violating any of the provisions of this section shall be liable to a penalty of one hundred dollars.

4. *And be it enacted*, That if the board of health of the state of New Jersey shall ascertain any vaccine virus, antitoxin or other animal product sold or offered for sale, or held for sale or use within this state for prophylactic or remedial purposes, to be dangerous to human health, or so impure or inert as to be inefficacious in rendering immune or less susceptible to disease any person in whom such product may be used, it shall be lawful for the said board of health of the state of New Jersey to prohibit the further sale or use within this state of any vaccine virus, antitoxin or other animal product, as aforesaid, manufactured or produced by the party who shall have manufactured or produced such dangerous, inert, impure or inefficacious product; any person who shall, after such prohibition, and with knowledge thereof, sell, or offer for sale or use, or offer for use within this state any such prohibited product, shall be liable to a penalty of one hundred dollars.

5. *And be it enacted*, That any penalty incurred under any of the provisions of the first, second, third or fourth sections of this act may be recovered in an action upon

contract, in any court of record within this state, for the use of the state of New Jersey.

6. *And be it enacted*, That this act shall take effect immediately.

Approved March 22d, 1895.

Section 1 of this act provides that certain communicable diseases shall be reported to the clerk or other designated officer of the local board of health.

In localities where this requirement is already in operation, it is customary, for the convenience of physicians, to furnish blanks \* for making returns.

After these forms have been filled out by physicians they are to be forwarded by messenger or mail to the clerk of the local board of health.

Section 2 provides that the clerk or secretary, or other designated officer of the local board of health, shall transmit by mail to the office of the State board of health, Trenton, upon blanks which will be furnished by the State board, a statement of the number of cases of preventable diseases which have been reported to the local board.

Section 3 is intended to prevent the spread of disease from the dead bodies of persons who have died from contagious or infectious diseases.

Section 4 provides that the sale and use of vaccine virus and all other animal products which may be found to be inert, impure or harmful, shall be prohibited.

#### Mortality from the Ten Chief Preventable Diseases in New Jersey.

	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.
Consumption.....	3,449	3,669	3,456	3,575	3,429	3,433	3,542	3,718
Diphtherial Diseases of Children.....	2,862	3,527	3,191	4,043	3,981	3,593	3,776	3,807
Diphtheria and Croup.....	1,574	1,575	1,737	1,776	1,677	1,294	1,464	1,753
Enteric Fever.....	724	782	695	628	506	485	568	577
Scarlet Fever.....	533	209	258	1,008	445	272	254	183
Whooping Cough.....	275	371	299	163	237	328	272	275
Erysipelas.....	114	81	85	94	74	97	74	69
Measles.....	118	174	250	197	73	257	95	390
Small-pox.....	3	0	0	38	43	11	23	2
Malarial Fever.....	203	195	180	198	148	162	144	119
Total.....	9,858	10,583	10,181	10,720	10,613	10,132	10,192	10,938

\* These blanks are not supplied by the State board of health. See the form printed on page 6 of this circular for the consideration of local boards of health.

If, in every sanitary district in the State, the local health authorities had faithfully applied the well-established methods (isolation, disinfection and vaccination) for preventing the spread of the diseases named in the foregoing table, at least 50 per cent., or more than five thousand human lives, could have been saved.

The hearty co-operation of the relatives, friends and attendants, in cases of preventable disease, to restrict it as far as possible, would still further diminish the death-rate from these pestilences.

#### Incubation Periods and Duration of Infectiousness of Communicable Diseases.\*

##### DIPHTHERIA.

*Incubation period.*†—Least, unknown; average, two days; greatest, seven days.

*Duration of quarantine for observation.*—Seven days from last exposure to infection.

*Infective period.*—From the commencement of symptoms during the whole period of the illness and convalescence, and until repeated bacteriological examinations show that the specific bacillus has disappeared. The bacillus persists in the mouth and throat for a considerable time after the false membrane has vanished. It is not safe, therefore, to permit patients who have recovered, even although their tonsils appear healthy, to mingle with other persons until at least fourteen days shall have elapsed since the disappearance of the membrane.

##### Sources of infection—

1. From a previous case of diphtheria.
2. From a case of apparently simple tonsillitis or sore throat.
3. From a case of apparently simple nasal ulceration.
4. From domestic animals (cats, pigeons, fowls) suffering from a throat affection.
5. From infected cow's milk.
6. From infected bedding, clothes, carpets, curtains, books, toys, drinking cups, spoons, forks, lead pencils, &c.
7. From a person who has been in contact with a diphtheria patient, but who has not himself contracted the disease.

\* Compiled mainly from "Infectious Diseases," by Louis C. Parks, M.D., London, 1894.

† The incubation period is the period between the exposure to infection and the first appearance of symptoms of illness.

##### SCARLET FEVER.

*Incubation period.*—Least, less than twenty-four hours; average, one to three days; greatest, seven days.

*Duration of quarantine for observation.*—Seven days from last exposure to infection.

*Infective period.*—From the earliest appearance of symptoms (usually sore throat) until all desquamation has ceased.

##### Sources of infection—

1. From a previous case of scarlet fever.
2. From a case of sore throat without discoverable rash, but really a mild form of the disease.
3. From infected milk.
4. From infected books, toys, dishes, garments, &c.

##### MEASLES.

*Incubation period.*—Least, four days; average, nine to ten days; greatest, fourteen days.

*Quarantine.*—Fifteen days from last exposure to the infection.

*Infective period.*—From the earliest appearance of symptoms until convalescence is well established. The catarrhal stage preceding the eruption is very infectious.

##### Sources of infection—

1. From a previous case of measles.
2. From infected bedding, clothes, carpets, curtains, books, toys, &c.

##### MUMPS.

*Incubation period.*—Least, fourteen days; average, twenty-one days; greatest, twenty-five days.

*Quarantine.*—Twenty-five days from last exposure to infection.

*Infective period.*—From the onset of the prodromal stage (which may last three or four days) and for two or three weeks subsequent to the appearance of the parotitis. The chance of the infection being propagated diminishes progressively from the onset of the parotitis.

*Sources of infection—*

1. From a previous case of mumps.
2. From infected articles.

## GERMAN MEASLES.

*Incubation period.*—Least, five days; average, eighteen days; greatest, twenty-one days.

*Quarantine.*—Twenty-one days from last exposure to infection.

*Infective period.*—From the onset of the prodromal or pre-eruptive stage until the cessation of desquamation.

*Sources of infection—*

1. From a previous case of German measles.
2. From infected articles.

## INFLUENZA.

*Incubation period.*—Least, less than twenty-four hours; average, three to four days; greatest, five days.

*Quarantine.*—Five days from last exposure to infection.

*Infective period.*—From the earliest onset of the symptoms until convalescence is well established.

*Sources of infection—*

1. From a previous case of influenza.
2. From infected articles.

## WHOOPIING COUGH.

*Incubation period.*—Least, seven days; average, not determined; greatest, twenty-one days.

*Quarantine.*—Twenty-one days from last exposure to the infection.

*Infective period.*—During the whole of the illness from the onset of the earliest catarrhal symptoms.

*Sources of infection—*

1. From a previous case of whooping cough.
2. From infected articles.

## SMALL-POX.

*Incubation period.*—Least, nine days;\* average, twelve days; greatest, fifteen days.

*Quarantine.*—Fifteen days from date of last exposure to infection.

*Infective period.*—From the onset of initial symptoms until all scabs have been removed. The period of greatest infectivity is during the acute stage (vesicular and pustular). During the initial illness, and until the appearance of the rash, the liability to impart infection is not great; therefore, isolation of a case very shortly after the appearance of the eruption, when associated with measures of vaccination, re-vaccination and disinfection, is very commonly effective in preventing further spread of the disease.

*Sources of infection—*

1. From a previous case of the disease.
2. From infected articles.

## CHICKEN-POX.

*Incubation period.*—Least, thirteen days; average, fourteen days; greatest, nineteen days.

*Quarantine.*—Nineteen days from date of last exposure to infection.

*Infective period.*—From the appearance of the eruption until this has entirely disappeared.

*Sources of infection—*

1. From a previous case of the disease.
2. From infected articles.

## ENTERIC FEVER.

*Incubation period.*—Least, eight days; average, twelve to fourteen days; greatest, twenty-three days.

*Quarantine.*—Twenty-three days from last exposure to infection.

*Infective period.*—The excreta are infectious throughout the whole course of the disease and until convalescence has been established for at least a fortnight.

*Sources of infection.*—Water, food or air contaminated by the specific virus contained in the excretions of an enteric fever patient.

\* In hemorrhagic small-pox there is some evidence that the incubation period is shortened to seven days.



Polluted well-waters may remain infective or retain the infection latent for long and unknown periods after the original mode of infection has ceased to operate.

The food most often implicated in the production of enteric fever is cow's milk which has acquired its infectiveness by the addition to it of water polluted by excreta, or by contact with cans and utensils which have been infected by polluted water, or by contact with unclean hands. Outbreaks of enteric fever have been traced to ice cream, herb beer and other drinks manufactured on premises where enteric fever has existed.

Oysters, mussels and other shell-fish grown in waters receiving sewage have also appeared to cause enteric fever.

The attendants upon enteric fever patients may become infected by taking meals with unwashed hands.

The air of privies, cesspools, drains and sewers which have become the receptacles for the discharges from typhoid patients, is capable of imparting infection to persons who are exposed to concentrated emanations from these sources.

The air of the sick-room occupied by an enteric fever patient may possibly be the means of transmitting the illness to persons long present in the room, but not where the cleanliness and ventilation of the room are daily attended to. Enteric fever very rarely spreads in the wards of clean and well-regulated hospitals.

Instances are known where washerwomen have contracted the disease from handling infected clothing or bedding of enteric fever patients. The infection may persist for several weeks in infected clothing and bedding shielded from contact with light and air.

#### TYPHUS FEVER.

*Incubation period.*—Average, seven days.

*Quarantine.*—Fourteen days from date of last exposure to infection.

*Infective period.*—From the commencement of illness until convalescence.

*Source of infection.*—From a previous case of the disease. The virulence of the contagion is rapidly destroyed by fresh air and free ventilation combined with cleanliness, so that the spread of the infection is generally observed only in the overcrowded and insanitary quarters of the poorest class of the population in industrial towns.

Vacher's Table.

The following table is founded on numerous recorded statistics, and may be regarded as one of the most reliable statements thus far presented on this subject:

DISEASES.	Time from inception to beginning of eruption.	Time from first precursory symptom to beginning of eruption.	Time from beginning of eruption to cessation of pyrexia.	Time from beginning of eruption till patient ceases to be infective.
Small-pox.....	16 days (range, 7 to 21 days.)	2 days. (range, a few hours to 7 days.)	14 days.....	56 days.
Modified Small-pox.....	17 days (range, 7 to 21 days.)	2 days. (range, a few hours to 7 days.)	14 days.....	35 days.
Chicken-pox.....	19 days (range, 4 to 17 days.)	2 days. (range, a few hours to 3 days.)	6 days.....	17 days.
Measles.....	14 days (range, 7 to 21 days.)	4 days. (range, 1 day to 9 days.)	6 days.....	27 days.
German Measles.....	14 days (range, 10 to 20 days.)	1 day. (range, nil to 8 days.)	7 days.....	14 days.
Scarlatina.....	4 days (range, a few hours to 14 days.)	1 day.....	7 days.....	49 days.
Diphtheria.....	5 days (range, 1 day to 14 days.)	2 days. (range, a few hours to 4 days.)	14 days.....	28 days.
Epidemic Erysipelas.....	5 days (range, 2 to 14 days.)	1 day.....	14 days.....	35 days.
Typhus Fever.....	19 days (range, a few hours to 28 days.)	7 days. (range, 3 to 7 days.)	7 days.....	21 days.
Typhoid Fever.....	21 days (range, 1 day to 28 days.)	7 days. (range, 7 to 12 days.)	21 days.....	28 days.
Mumps.....	18 days (range, 8 to 26 days.)	4 days.....	7 days.....	21 days.

Whitelegge's Table.

	Quarantine to be required after exposure to infection.	EARLIEST DATE OF RETURN TO SCHOOL AFTER AN ATTACK.
Small-pox .....	18 days...	When all scabs have fallen off.
Chicken-pox .....	18 days...	When all scabs have fallen off.
Scarlet Fever .....	14 days..	{ Six weeks, and then only if no desquamation or sore throat.
Diphtheria .....	12 days..	{ Three weeks, if convalescence is complete, and no bacilli remain.
Measles .....	16 days..	{ Three weeks, if all desquamation and cough have ceased.
Whooping Cough .....	21 days..	{ Six weeks from the commencement of the whooping, if the characteristic spasmodic cough and whooping have ceased. Earlier, if all cough be gone.
Röteln, or Rubella...	16 days..	{ Two to three weeks, according to the nature of the case.
Mumps.....	24 days..	{ Four weeks, if all swelling has subsided.

This table assumes that a person who has been exposed may himself convey the infection from the time of exposure.

#### Disinfection of Rooms.

Rooms which have been occupied by persons affected by small-pox, diphtheria, scarlet fever, typhus fever, or any other dangerous infectious disease, may be treated as follows:

1. In localities where a sterilizing chamber has been provided, the entire contents of the infected apartments, except as hereinafter stated, should be removed to the disinfecting station and be subjected for thirty minutes to contact with live steam under a pressure of thirty pounds.

2. In cases where no disinfecting plant is available, carry to the rooms one or more metal wash-boilers filled with water. Immerse in the water all handkerchiefs, sheets, pillow-cases, garments and other articles which boiling water will not injure. Boil these goods for two hours.

3. All infected books and other articles which would be ruined by being subjected to high temperature or to immersion in a solution of the bichloride of mercury (1 to 1,000) for not less than two hours, should be destroyed by fire, if they have little value, or, if valuable, they may be opened up and spread out for treatment as provided for in paragraph 5.

4. In cases where the rooms cannot be tightly closed, apply to the walls, woodwork, floors, carpets, furniture, mattresses, pillows, bric-a-brac and all other portions of the interior of the room, and to all other articles which may remain therein, a solution of the bichloride of mercury, 1 to 1,000.

This solution may be conveniently applied by spraying it upon the walls, &c., by the use of a garden-pump. The wooden pail or tub containing the solution should be placed upon the floor, near the middle of the room, and the solution should be forced through a hose so that it can be discharged from the spray-nozzle directly upon the infected surfaces.

The solution should be freely applied to carpets, rugs and other floor coverings, and for this purpose it can best be distributed by using a sprinkling-pot.

5. When the infected apartments can be tightly closed, they may be treated by the liberation of formaldehyde gas. This may be accomplished by the rapid conversion of wood alcohol (one quart to 2,000 cubic feet of space), or by disengaging the gas from the commercial forty per cent. solution (formalin).

Many devices for the production of the gas are now offered in the market and new ones are still appearing.

Clothing, bedding, &c., should be treated separately in a small, close room or closet, and the room should be kept closed for at least six hours. Books should be so placed that the leaves will be apart as much as possible, and they should be exposed to a large volume of the gas in a small, air-tight space. A large box or a small room should be employed for this purpose.

#### Schedule for Inquiry Concerning Epidemic Outbreaks.

1. Name of sanitary district.
2. Area, location and topography.
3. Population, number and character of dwellings.

4. Chief industries.
5. Drainage and sewerage.
6. Collection and removal of rubbish, garbage and ashes.
7. Infectious diseases during past year.
8. Isolation hospital.
9. Disinfecting chamber.
10. Disinfecting and cleansing of premises after infectious disease.
11. Milk-supply.
12. Water-supply.
13. Number, names, ages, addresses and disease of persons sick.
14. Source of infection.
15. Conditions affecting health upon premises where infectious disease exists.
16. Measures in operation to prevent spread of the disease.
17. Number of deaths during present epidemic.

#### House-to-House Inspection Records.

House-to-house inspections furnish the basis for almost every sanitary improvement which is required in any community, but unless a clear and trustworthy record is made of the conditions observed, the inspections are valueless. The purpose of sanitary inspection is to inform the board of health concerning all conditions on premises which may affect the health of the occupants, and to furnish the facts pertaining to those conditions in such form that they may be used in securing improvement—perhaps in court as evidence.

A detailed, written record of inspection, prepared by a correct and wide-awake inspector, places a board of health in a masterly relation to the premises in hand, and is often more convincing than any verbal statement can be, for inasmuch as the facts are recorded on the spot, there is reason to believe that they are accurately stated, while the use of diagrams assists greatly in conveying the desired impression.

The following blank is in use in one city. These blanks are bound into books, one book for each street and one blank for each lot or separate premises. Each blank has four pages and the books measure seven inches by eight and one-half inches. The printing and binding (twenty-seven books) of these blanks cost \$30 per 1,000. This sum is paid out of the appropriation received by the local board of health from the municipal authorities:

FORM XXIX, 1893.

### RECORD OF SANITARY INSPECTION.

No. .... Street, Avenue.  
 Owner ..... Address.....  
 Agent .....

#### SITE OF HOUSE.

1. Size of lot.....feet x.....feet. Area of lot ..... square feet.  
 Area covered by buildings.....square feet.
2. Has lot been filled in? .....
3. Elevation of house sill above curb.....feet.
4. Ground-water level below curb .....feet.
5. Height of buildings on adjoining lots.....
6. Yard.....
7. Privy-vault: size.....x.....; distance from privy-vault to dwelling.....  
 feet; distance from privy-vault to well.....feet; construction of privy-vault.....
8. Catch-basin: size ..... x..... x.....; size of grating.....x.....  
 how covered.....; is ventilation adequate?.....
9. Cesspool: size, construction, location and ventilation.....
10. Water-supply.....; analysis of well-water.....
11. Stable: ...; number of stalls .....; how floored .....  
 disposal of fluid excrement.....  
 storage of solid excrement.....  
 manure receptacle.....; size .....  
 cover .....
12. Chickens kept on premises? .....
13. Garbage: how stored? .....

#### HOUSE.

14. House erected.....
15. House used for boarders? .....; for other business? .....
16. House faces .....; sun exposure.....
17. Number of sleeping-rooms .....
18. Rooms without windows.....
19. Heating.....; has furnace an air-tight fresh-air box? .....
20. Lighting.....
21. Number of stories high.....
22. Material of construction.....  
 sheathed and covered with building paper? .....
23. Fire-escape.....
24. Roof.....
25. Back dwelling on lot.....
26. Foundation: thickness.....; damp? .....; cause.....
27. Cellar: how floored .....; under all of house? .....; outside entrance?  
 .....; number and size of windows.....; is cellar dry or  
 damp? .....; is ground-water level below cellar bottom? .....  
 is cellar well ventilated? .....

PLUMBING

- 28. Water-closets: number.....; located.....  
style.....; condition.....  
windows in water-closet apartment.....; is apartment used for  
sleeping-room? .....
- 29. House drain: material.....  
size.....; fall .....
- 30. Trap on main drain.....
- 31. Inlet for fresh air.....
- 32. Are all fixtures trapped? .....; traps vented? .....
- 33. Premises connected with street sewer? .....

VITAL STATISTICS.

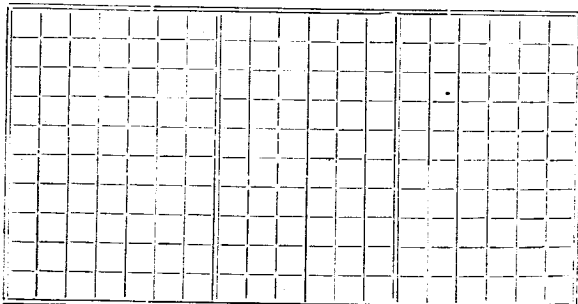
- 34. Population of house.....
- 35. Number of families .....
- 36. Diseases reported during past year.....
- 37. Diseases reported during past ten years .....
- 38. Deaths during past year.....
- 39. Deaths during past ten years.....

PLAN OF PREMISES.

*Inspector.*

SCALE.—One inch, 25 feet; one-fifth inch, 5 feet. Each square represent 5 square feet.

LETTERS INDICATE AS FOLLOWS: W, well; C, cistern; P, privy-vault; D, drain (dotted line shows course of drain); L, leaching cesspool; B, brick cesspool; C B, catch-basin.



49 The State Board of Health does not furnish these blanks.

School-Houses.

Recent observation has shown that diphtheria is less prevalent during vacation periods than during the school terms, and the facts brought out tally with the opinions and conclusions heretofore entertained concerning the mode of communicating this terrible disease. It is spread through short distances only, and by contact between infectious particles and the mucous membranes. When children are massed together in large numbers in school buildings, the danger is great that some one of them may be carrying the bacilli of diphtheria in throat and nose, and that the infectious material may be smeared upon door-knobs, hand-rails, slates, books, lead pencils, desks and floors.

Assuming that no child will contract the disease unless the bacilli are actually planted directly upon the lips or tongue, it is not difficult to believe that such transfer from door-knob, slate, desk, &c., does in each case occur. The fingers and the mouth are in very intimate relation in the case of nearly every school child, and herein lies a suggestion for hygienic instruction. No child of school age is too young to receive with advantage the gospel of cleanliness.

There is little dissent from the opinion that enteric fever never occurs until fecal material from an infected individual shall first have been swallowed by the new victim of the disease, and the world-wide prevalence of this affection shows to what an extent the most revolting of substances finds its way into our mouths.

Can we expect less frequent and extensive contamination in the case of diphtheritic discharges? The best and safest protection against the spread of this disease seems to lie in the following measures:

1. Bacteriological examinations in the case of convalescents, and in the cases of persons known to have been exposed to the infection, to learn when the bacilli have ceased to be present.
2. Isolation of all affected persons during the infective period.
3. The immediate destruction or efficient disinfection of all discharges from the nose and throat of infected persons and the thorough disinfection of infected articles and premises.

Until the first and second of these measures shall have been more effectually applied than yet is possible, school boards can do some-

thing toward staying the spread of this disease by applying the third of the above-enumerated methods, as far as it is practicable, in the care of school buildings.

Not only diphtheria, but also scarlet fever and the great white plague itself (consumption) would be restricted to some extent by carrying out the following simple rules:

#### SUGGESTIONS FOR CLEANSING SCHOOL BUILDINGS.

1. Each day, during the prevalence of infectious disease, after the school is dismissed, the janitor is to scrub with warm water, soap and a stiff scrubbing brush, all parts of doors, casings and other woodwork which can be touched by the hands of the children, including seats and desks.
2. The floor should be in good repair and without open cracks or crevices. It should be sprinkled with clean water daily before being swept.
3. Lead pencils (there should be no slates) should every day be immersed in a five per cent. solution (1 to 20) of carbolic acid and wiped dry.
4. The difficulty attending the cleansing of books should cause great care to be taken by teachers to prevent books from being passed from hand to hand, or touched by anyone except the child to whom they belong or to whom they may be assigned. Books which have been used by a pupil who is suffering from any one of the communicable diseases, should be destroyed by fire, or they may be treated by exposure to formaldehyde gas (see page 18 of this circular).
5. During each vacation the walls and woodwork, including doors, desks and floors, should be wetted with a solution of bichloride of mercury (1 to 1,000), and the windows should be kept open to admit great floods of sunlight and pure air. Finally scrub with clean water.
6. Water coolers are unclean and unnecessary. They should not be allowed in school buildings. When practicable, drinking fountains, consisting of a jet of water rising from the center of a piece of marble, requiring no cups, should be supplied.
7. Individual seats and desks should be provided in every school.
8. Light and airy cloak-rooms should always be provided, and books should be so separated that the garments of different pupils will not come into contact.

#### Licensing Milk Dealers.

An act approved March 10th, 1882, provides that the common council, or other governing body of any city, borough or seaside resort, may require that all persons who are engaged in the business of selling milk shall pay an annual license fee for the privilege of conducting said business, and a penalty not exceeding fifty dollars may be fixed for selling milk without having first obtained a license.

The law further provides that at least two-thirds of the sum collected from said license fees shall be expended in paying the salary of a competent milk inspector. The duties of the milk inspectors appointed under this act shall be to keep a record of all daily doings or proceedings as inspector, giving a full account of each inspection or examination of milk made by him, including the name of the person, firm or corporation owning or claiming to own the milk inspected, the name of the agent in charge, the place and manner in which the said milk was offered for sale, together with the result of each test and analysis, and such other duties as the municipal corporation by which he was appointed may require. He should know the quantity of milk sold by each dealer, and where the milk is produced. His records should show how the milk is stored in each depot, whether the cans and utensils are sufficiently washed and scalded to thoroughly cleanse them, and whether the water-supply of the depot is wholesome or polluted.

Few municipalities have availed themselves of the benefits which may be derived from the enforcement of this law, and this fact may be accounted for because its execution is placed in the hands of the governing body of municipalities instead of being intrusted to local boards of health. But doubtless the health board of any of the specified municipalities can secure the operation of the law in their own district by bringing the matter to the attention of the mayor and council, board of commissioners or other proper authority.

#### To Prevent the Spread of Disease by Milk.

Local boards of health have authority, under chapter LXVIII, laws of 1887, to make ordinances to prevent the sale of milk which is contaminated by exposure to the infection of disease, and until recently this authority has been resting altogether in the hands of local boards.

During the year 1894 an outbreak of typhoid fever occurred in Essex county which could have been arrested after the appearance of the first case if the local health board had been prepared to act, but no suitable action was taken and as a consequence one hundred and fifteen cases of the disease developed in the locality, one hundred and seven of these persons having partaken of milk which was produced on the farm where the disease first appeared. Fifteen deaths attended this epidemic.

The legislature has passed the following act, which gives co-ordinate authority to the State board of health :

## CHAPTER CCCLXXIV.

A FURTHER SUPPLEMENT to an act entitled "An act to establish in this state boards of health and a bureau of vital statistics, and to define their respective powers and duties" approved March thirty-first, one thousand eight hundred and eighty-seven.

1. BE IT ENACTED by the Senate and General Assembly of the State of New Jersey, That when the state board of health, or any officer thereof, duly authorized in writing by such board to act for or on behalf of said board, shall have reason to believe that any milk has been contaminated by the emanations, exhalations or discharges of any person sick with communicable disease, i. shall be lawful for the said state board of health, or the officer so authorized to act in the premises, to prohibit the transportation or sale of any milk suspected to be contaminated as aforesaid, and also to prohibit the transportation or sale of any milk which may be produced, stored, kept or found upon any premises infected by such disease; such prohibition shall continue until the state board of health, or the officer authorized to act in the premises as aforesaid, shall in writing remove such prohibition.

2. And be it enacted, That any person or persons who shall transport or sell any milk the sale and transportation of which has been prohibited, pursuant to the provisions of the first section of this act, shall be liable to a penalty of fifty dollars, to be recovered by the state board of health in an action upon contract for the uses of the state of New Jersey in any court of record within said state.

3. And be it enacted, That this act shall take effect immediately.

Approved March 28th, 1895.

This act does not lessen the responsibility of local boards of health nor in any respect relieve them of the duty of making and executing ordinances to prevent the spread of disease by milk. It only provides a method whereby the citizens of the State may be protected in cases where local boards fail to take advantage of the privileges accorded them by the laws.

## Regulating the Sale of Milk.

The following act adds to the authority previously given to local boards of health to prevent the sale of impure milk, and the public may reasonably expect that no effort will be spared by health officers to enforce the law :

A FURTHER SUPPLEMENT to an act entitled "An act to establish in this state boards of health and a bureau of vital statistics and to define their respective powers and duties," approved March thirty-first, one thousand eight hundred and eighty-seven.

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

1. Any local board of health organized or created under the provisions of the act to which this a supplement, in addition to the powers already possessed, shall have power to adopt and alter ordinances prohibiting the sales of or having in possession for sale, any milk containing any unhealthy ingredient, constituent or substance, or which has been transported or stored in an unclean manner or place, or which is produced from cows which are diseased or which are kept or stabled under unhealthful conditions.

2. Said local boards of health are further empowered to adopt and alter ordinances requiring any person or persons engaged in the sale of milk to furnish to the said boards of health, when so requested, a statement as to the locality from which said milk was procured, and also a full and complete list of the persons from whom said milk was purchased, and the names and addresses of all customers or persons to whom he or they may sell or deliver milk in any borough or municipality in which said board of health may be organized.

3. Said boards of health are further empowered to prescribe a penalty for the violation of the ordinances aforesaid of not less than ten dollars nor more than one hundred dollars, which shall be collected in the same manner provided for by the act to which this is a supplement.

4. This act shall take effect immediately.

Approved April 23d, 1897.

## The Prevention of Blindness.

At the annual meeting of the Medical Society of New Jersey in 1893, a committee, consisting of Drs. W. B. Johnson, C. J. Kipp and P. A. Harris, was appointed to obtain legislation for the prevention of blindness. They secured the enactment of the following statute :

## CHAPTER CXVIII, LAWS OF 1895.

AN ACT for the prevention of blindness in the State of New Jersey.

1. BE IT ENACTED by the Senate and General Assembly of the State of New Jersey, That should one or both eyes of an infant become inflamed, swollen or reddened, or show any unnatural discharge at any time within two weeks after its birth, and no

legally-qualified practitioner of medicine be in attendance upon the infant at the time, it shall be the duty of the midwife, nurse, attendant or relative having charge of such infant to report the fact in writing within six hours, to the local board of health of the city, township or other municipality in which the parents of the infant reside.

2. *And be it enacted*, That the said local board of health shall direct the parents or persons having charge of such infant suffering from such inflammation, swelling, redness or unnatural discharge of the eyes to immediately place it in charge of a legally-qualified practitioner of medicine, or in charge of the physician of the city, township or other municipality if unable to pay for medical services.

3. *And be it enacted*, That every local board of health in the state of New Jersey shall furnish a copy of this act to every legally-qualified practitioner of medicine, and to each person who is known to act as a midwife or nurse, in the city, township or other municipality for which such board of health is appointed; and the secretary of state shall cause a sufficient number of copies of this act to be printed, and to supply the same to such officers for distribution.

4. *And be it enacted*, That any failure to comply with the provisions of this act shall be punishable by a fine not to exceed two hundred dollars, or imprisonment not to exceed six months, or both, upon conviction, under prosecution proceedings to be brought by any local board of health.

5. *And be it enacted*, That this act shall take effect and be in force on the first day of May, one thousand eight hundred and ninety-five.

At the meeting of the same society held in June, 1896, the committee which had been appointed to recommend a method for the prevention of purulent conjunctivitis in the new-born, consisting of Charles J. Kipp, M.D. (chairman), W. B. Johnson, M.D., and W. R. Powell, M.D., reported as follows:

"Personal observation, interviews with physicians in charge of large lying-in hospitals, and study of the literature of the subject, have forced upon us the conviction that the development of the blennorrhœic conjunctivitis of the new-born can be prevented by disinfection of the eyes, and that the method recommended for this purpose by Prof. Credé, of Leipsig, Germany, accomplishes all that is claimed for it by its distinguished author. This method, of which a full description is appended to this report, has been employed in many of the largest lying-in hospitals in this country and abroad for the last fourteen years, and, so far as we have been able to learn, has, in almost every instance in which it was employed strictly in accordance with the directions given by Dr. Credé, prevented the development of the ophthalmia neonatorum. In our opinion this method is as well adapted to private practice as to hospitals, and as it can be carried out without danger to the eyes of the infant by untrained hands, we would recommend it also for the use of midwives. The fact that ophthalmia neonatorum is still quite prevalent amongst children born in private dwellings (not less than thirty such cases were treated alone in the outdoor department of the Newark Charitable Eye and Ear Infirmary during the past year), would seem to show that Credé's method is not largely employed by medical men and midwives in private practice, and we would therefore urge the members of this society to co-operate with us in making the value of this method more widely known. We feel confident that if Credé's method were employed in all the new-born, or at least

in all whose mothers have not been repeatedly and thoroughly examined by modern methods before the onset of the labor and found to be absolutely free from infectious disease of the genital tract, ophthalmia neonatorum would soon be unknown and many eyes saved from destruction. \* \* \*

"Respectfully submitted,

"CHARLES J. KIPP, Chairman,

"WALTER B. JOHNSON,

"WM. R. POWELL"

#### CREDE'S METHOD OF DISINFECTING THE EYES OF THE NEW-BORN.\*

After severing the umbilical cord, the infant's skin is to be freed in the usual manner of its sebaceous coat and the blood, mucus, &c., adherent to it; the infant is then placed in the bath, and while there the skin of the eyelids is thoroughly cleansed of vernix with a cloth or, better still, with absorbent cotton, wet with clean water taken from a separate vessel, but not with the water in the bathtub. The child is then transferred to a table, and while there, before it is dressed, each eye is slightly opened by means of two fingers and a single drop of a two per cent. solution of silver nitrate, hanging from the end of a glass rod, is brought close to the surface of the cornea and made to fall on its central part. Nothing further is done to the eyes. A second application of the silver nitrate must never be made during the following twenty-four or thirty-six hours, even if slight redness and swelling of the eyelids with mucus secretion should follow the first application.

No special importance is attached to the order in which the different steps of this method are carried out. It is certainly not necessary to drop the silver solution in the eyes before the cord is severed. In private practice, and in cases in which sufficient trained assistance is wanting, it is to be recommended, in order not to lose control of the lying-in woman during the third period of the labor, to cleanse the eyes externally immediately after severing the cord, and then to drop the silver solution into the eyes, all of which can be done in a very short time; then the afterbirth is to be removed, and when this has been done the child is put into the bath.

The silver nitrate solution is best kept in a dark-colored bottle with a ground glass stopper. The neck of the bottle should measure about half an inch in diameter. The glass rod used is six inches long and very smooth and round at each end. The silver solution will keep for many months, but it is best to renew it about once in six weeks.

#### Legal Difficulties in Sanitary Work.

The enforcement of health ordinances has been attended with much difficulty in some localities in New Jersey, and many suits instituted by local boards to secure the abatement of nuisances have been lost. These failures have not occurred because of any fault in the law, but have generally been due to some error in framing the local ordinance, or to some oversight in the manner of bringing suit. Each local board seems to be buying its own experience in this direction, and

\* Die Veshigung der Augenstimmung der Neugeborenen Berlin, 1854.

although the mistakes which continue to trip up the legal proceedings of health boards have probably all previously been discovered in some other locality at more or less cost to the public treasury, yet there has apparently been little communication between the three hundred and eighty-six sanitary districts of the State concerning the pitfalls which lie in the way of obtaining judgments for violating ordinances.

In this series of circulars will be published facts relating to this subject when they are reported to the State board of health, and when they seem to have a general bearing.

The subjoined letter may be of service to some other board than the one which found itself in the helpless position described.

The necessity for a suit in this case was owing to the introduction of a latrine thirty feet long into the cellar of a new public school building :

To the Board of Health of the..... :

GENTLEMEN—Your communication directing me to bring suit against the board of education of the township of ..... for a violation of section 2 of the ordinance governing plumbing and drainage was duly received, and after a careful examination into the matter I am constrained to advise you that, in my opinion, such action cannot be maintained. By reference to the law under which the ordinance in question was prepared and adopted (P. L. 1888, p. 80), it will be found that your board has ample authority to pass an ordinance which will govern, control and regulate the plumbing, ventilation and drainage of all buildings; but, by reference to the section of the ordinance in question, you will observe that the ordinance is not broad enough to cover the action that you now desire to institute.

First. The section does not designate who shall sign the plan or drawing and description thereof, which is required to be filed in your office, where the owner is other than an individual. It seems to me that it would be impossible for the board of education to comply with this part of the section, hence it could not be enforced against it.

Second. The ordinance is so drawn that it does not permit you to designate or control the particular system of heating and ventilation sought to be used in a building. This will be apparent by the most cursory glance at the section, so that further detail is unnecessary.

There is no doubt, however, of your right to control these subjects under the law, and I would advise that you so amend the present ordinance that it shall cover these and other defects that might be found.

Respectfully, submitted,

.....  
Attorney.

### The Storage and Collection of Garbage.

The following ordinance has been in successful operation during the past year in a municipality having about five thousand inhabitants, and its execution has not been attended by much difficulty. Some patience was required to break up the habit of pouring upon the ground the fluids from the garbage receptacles before the garbage was placed in the carts; and some bother was caused by sly incursions by farmers who came irregularly to get a few loads of garbage, leaving all fluids, and carrying away only the solid portions for food for cattle and hogs:

AN ORDINANCE to regulate the storage and collection of garbage and offal.

Be it ordained by the Board of Health of the City of .....

Section 1. That all garbage and offal which shall accumulate anywhere in the city of ....., or which is stored, kept or retained therein, shall be kept in galvanized iron receptacles.

Sec. 2. Said receptacles shall be water-tight, and they shall be kept in good repair and be tightly covered with closely-fitting galvanized iron covers. The capacity of said receptacles shall not exceed twenty gallons, nor shall it be less than five gallons. Said receptacles shall have metallic handles.

Sec. 3. The contents of said receptacles shall be emptied only by depositing it in vehicles licensed by the board of health for the transportation of garbage. The owner of each of said garbage receptacles shall cause the same to be kept clean, and no rain water nor any other fluid shall be allowed to enter said garbage receptacles.

Sec. 4. No person shall collect, transport or carry, or cause to be transported or carried, through the streets of ....., any garbage or offal, nor any decomposing solid or fluid substance whatsoever, except in conformity with the requirements of a written permit or license therefor first received from the board of health.

Sec. 5. Every receptacle from which garbage is removed by any licensed collector shall be wholly and entirely emptied of its contents, and none of said contents shall be permitted to fall upon the ground. All covers of garbage receptacles shall be replaced upon said receptacles by said collectors after the garbage has been removed.

Sec. 6. In the case of fish markets, no fish refuse or other offal shall be emptied from the receptacle in which it is stored, but both offal and receptacle shall be removed from the premises and transported together outside of the city, and the said receptacle shall not be brought back into the city until it has been made clean and odorless.

Sec. 7. All wagons used for transporting garbage and offal shall be supplied with a box or body which is water-tight. Said wagon-boxes shall be tightly covered by canvas covers, and the covers shall be kept closed at all times except when garbage is being placed in the box. The garbage wagons shall be kept clean. The owner, contractor or other party in charge of said wagons shall cause them to be thoroughly washed inside and outside every day, and he shall not permit them to become offensive. No garbage wagon shall be allowed to stand or remain anywhere in this city



longer than is absolutely necessary for the rapid collection of garbage. No garbage wagon shall be brought into the city of....., nor used there, unless it shall be numbered with painted figures six inches high and one inch wide, placed on both sides of its box or body. Garbage wagons shall be used singly, and they shall not be worked nearer to each other than six hundred feet in the same street.

Sec. 8. All ordinances, or parts of ordinances, in conflict herewith are hereby repealed in so far as they conflict with this ordinance.

Sec. 9. Any person, or persons, who shall violate any of the provisions of this ordinance shall, upon conviction, forfeit and pay a penalty of twenty-five dollars, Adopted.

....., Clerk. ....., President.

Cemetery records are generally very loosely kept, notwithstanding the provisions of section 9 of chapter XXXIX. of laws of 1888, which reads as follows :

9. *And be it enacted*, That it shall be the duty of the keeper of every cemetery within this state, owned by any cemetery company organized under any law of this state, to keep a record of all interments made in such cemetery, which record shall include the name of the person interred, last place of residence and the name of the undertaker, or person acting as undertaker; said record shall be a public record and at all times open to the inspection of any persons who, under any of the laws of this state, shall have duties imposed upon them relating to the procurement or tabulation of vital statistics.

“Sanitary district” is a convenient expression which is used to indicate the territory within the jurisdiction of a local board of health. Thus, the city of Newark is a sanitary district; the township of Clinton is a sanitary district; the village of South Orange is a sanitary district; the borough of Caldwell is a sanitary district. Each municipality and each township outside of the boundaries of municipalities separately constitute sanitary districts.

If the name of the clerk, secretary or other officer of any local board of health is not correctly written on the wrapper of this circular, or if the official communications from the State board of health are incorrectly addressed, notice should be sent to the office of the State board of health, Trenton.

A pathological museum containing specimens showing the characteristic lesions of the dangerous communicable diseases would be of great assistance to physicians in making diagnosis. Such a collection would be invaluable in the study of post-mortem conditions in doubtful or disputed cases of typhoid fever and yellow fever.

The act approved March 22d, 1895 (see page 8 of this circular 89),

provides that every physician shall report to the local board of health, in writing, the name, age and precise location of every person suffering from any dangerous communicable disease. The law does not compel local boards to furnish blanks to physicians for this purpose, but physicians would be much accommodated if blanks were supplied to them, and the law permits local boards to furnish them and all other blanks in their discretion. On page 6 of this circular a form is suggested for the consideration of local boards. If blanks of this description are printed, they should be ordered and be paid for by the local board. The State board of health is not authorized by law to furnish blanks for this purpose.

The blank for use by local boards in sending reports to the State board of health in relation to cases of communicable disease is in form as follows :

5, 25, '95, 113.

REPORT OF PREVENTABLE DISEASES FOR WEEK ENDING SATURDAY.....189

[Name of Place].....

TO THE BOARD OF HEALTH OF THE STATE OF NEW JERSEY :

Following is a report in accordance with the provisions of Chapter 260, Laws of 1895, showing the number of cases of communicable diseases which occurred in this Sanitary District during the period above named :

DISEASES.	New Cases.	Existing Cases Previously Reported.	Deaths from Preventable Diseases.	PRECAUTIONS TAKEN.
Diphtheria.....				
Membranous } Croup }				
Scarlet Fever.....				
Typhoid Fever.....				
Small-pox.....				
.....				
.....				
.....				
.....				

Total Deaths from all causes..... Signature of Clerk or other designated officer.....  
P. O. Address.....

Note—When no communicable diseases occur, no report will be expected from local boards to the State Board of Health.

On the back of this card the following is printed :

These cards are for the use of local boards of health in making the weekly reports to the State Board.

Blanks for the use of physicians are not supplied by the State. All such blanks, and also any books needed for recording the reports of communicable diseases should be furnished by local boards.

*Recording Death-Rates.*—When the population and the total number of deaths for a year are given, the annual death-rate per thousand is readily obtained by use of the following formula: Population: 1000 :: Number of deaths : Annual rate.

*Illustration.*—The number of deaths which occurred in Jersey City during the year ending June 30th, 1894, was 4,320. The population for that year was estimated to be 170,595. The following proportion may then be stated:

170595 : 1000 :: 4320 : Annual death-rate.
1000 × 4320 = 4320000.
170595) 4320000 (25.32
341190
908100
852975
551250
511785
394650
341190

The annual death-rate is thus shown to be 25.32.

If the number of deaths is given for one week only, the fourth term in the proportion should be multiplied by 52 to obtain the annual death-rate.

To sprinkle carbolic acid about the house, or to burn a sulphur candle, or to suspend sheets and towels wet with some proprietary liquid, may be excused in the case of untrained attendants, but it is about time that health officers should cease to countenance and advise the employment of such methods in the disinfection of houses.

“All necessary precautions have been taken” is a very common expression. It is used by physicians, nurses, health officials, school officers and by house-owners after an outbreak of one of the dangerous communicable diseases. When uttered by some persons it signifies (when small-pox has prevailed, for instance) that the patient is securely isolated; that all exposed persons have been vaccinated; that all infected baggage, clothing and household goods have been treated in a steam disinfecting chamber, or subjected to prolonged boiling, or destroyed by fire; that all infected apartments, carpets, furniture and vehicles have been thoroughly wetted with a solution of the bichloride of mercury (1 to 1,000), and afterward well washed with pure water.

When the same words are spoken by some other persons, they may be intended to cover up the true conditions and to lead to a belief that

no danger need be feared that the disease will spread, while in reality the *precautions* taken may be, perhaps, as follows: A few live coals are placed upon a shovel, and upon these is placed a teaspoonful of powdered sulphur. This is hastily carried through the house by the coughing and half-suffocated operator. A dollar or two is then expended in buying some advertised “disinfectant,” and with this liquid the floor is sprinkled. Perhaps a dozen saucers containing carbolic acid or chloride of lime may be placed about the house, and a lot of old rags may be buried in the back yard, for some vagabond to disinter and appropriate to his own personal use or to sell to a junk dealer. A washerwoman will then be paid an extra sum to go into the house and clean up.

Instead of saying that “all precautions have been taken,” let us fall into a habit of stating definitely just what has been done.

Vaccinate tramps before admitting them as lodgers in lockups and jails.

## CIRCULAR 90.

ICE.

OFFICE OF THE BOARD OF HEALTH  
OF THE STATE OF NEW JERSEY. }  
TRENTON, June 1st, 1897. }

*To Local Boards of Health:*

At the last meeting of the New Jersey State Board of Health it was resolved that THE USE FOR DOMESTIC PURPOSES OF ICE TAKEN FROM PONDS, RESERVOIRS, RIVERS OR OTHER BODIES OF WATER UPON WHICH PERSONS HAVE BEEN ALLOWED TO SKATE, IS A MENACE TO THE PUBLIC HEALTH.

Local boards of health are hereby advised to enforce the provisions of the following act:

AN ACT respecting the cutting and sale of ice in the cities of this state, and giving to boards of health in such cities power to regulate and control the same.

1. That no ice shall be cut for the purpose of being sold or used in any city of this state from any pond, creek or river within the limits of any such city, unless a permit therefor shall be first obtained from the board of health of such city, and no person or persons shall sell or deliver any ice in any city in this state without first obtaining a permit therefor from the board of health of such city, and it shall be lawful for any such board of health to refuse a permit and to revoke any granted by them as aforesaid when in their judgment the use of any ice cut or sold, or to be cut or sold, under the same is or would be detrimental to the public health.

2. That the board of health of any city may prohibit the sale and use of any ice within the limits of such city when in their judgment the same is unfit for use, and the use of the same would be detrimental to the public health, and the said board may prohibit and through its officers stop, detain and prevent the bringing of any such ice for the purpose of sale or use into the limits of any such city, and also in the same manner stop, detain and prevent the sale or use of any such ice found within the limits of such city.

3. That any person or persons who shall violate any of the provisions of this act or who shall attempt to cut, sell or bring into any city any such ice after being notified by said board of health or its officers not to do so, shall be guilty of a misdemeanor, and on conviction shall be sentenced to imprisonment in the county penitentiary for a term not to exceed six months, or to pay a fine of five hundred dollars, or both, in the discretion of the court; and it shall be lawful for the officers of said board of health or the police officers of any such city to arrest on sight any person or persons who shall be found violating any of the provisions of this act.

Approved March 18th, 1885.

A SUPPLEMENT to an act entitled "An act respecting the cutting and sale of ice in the cities of this state, and giving to boards of health in such cities power to regulate and control the same," approved March 18th, 1885.

1. That the provisions of the act to which this act is a supplement be and the same hereby are extended to all boroughs, townships, towns and other local municipal governments in the state

2. That this act shall be deemed a public act and shall take effect immediately.

Approved March 8th, 1888.

Prolonged freezing does not destroy certain pathogenic bacteria, and the unavoidable contamination of ice, by expectoration and otherwise, when it is used for skating, constitutes a source of danger which the law above quoted enables local boards to prevent.

This act applies to every locality in the State, and the supplement authorizes every local board of health to enforce its provisions.

HENRY MITCHELL, M.D.,

Secretary.

### CIRCULAR 91.

#### STATUTES OF NEW JERSEY RELATING TO MARITIME QUARANTINE.

An act to provide for the security of the citizens of this state against the introduction of contagious diseases.

Passed November 19, 1799.

Sec. 1. That it shall and may be lawful for the governor of the state for the time being, upon application to him made by the executive or other competent authority in the states of Pennsylvania or New York, of any vessel infected with a malignant disease, and per-

forming quarantine under the laws of the said states of Pennsylvania or New York, being then in the rivers Delaware or Hudson, or the waters adjacent to the city of New York, to issue his proclamation, forewarning all citizens of this state from entering on board of, or having any communication with such infected vessel; and if any person or persons shall, after the publication of said proclamation, and in contravention thereof, enter on board of any such vessel, so as aforesaid described in the said proclamation, or be any way concerned in bringing to the shores of this state any goods, merchandise, bedding or clothing, he, she or they, for every such offense, shall, on conviction thereof, in due course of law, be fined in any sum not exceeding three hundred dollars, at the discretion of the court before whom such conviction shall be had.

An act to prevent the introduction of malignant and other infectious diseases into this state.

Approved April 4, 1871.

Sec. 1. That all vessels intending to go by the way of Raritan bay, or by the way of said bay and Raritan river, or Arthur Kull sound, to any port now in existence in this state, or to be hereafter in existence in this state, between the first day of March and the first day of December, in this or any other year hereafter, or at any time of the year that the board of health hereinafter mentioned shall designate by order, under their hands, from time to time, from any port, island or other place in America lying south of Georgia, or from any West India, Bahama or Bermuda island, or from any port or place where yellow or pestilential fever prevails, or on board of which vessel any person shall have been sick or died while at a foreign port, or on the homeward passage, or on board of which the health officer hereinafter mentioned shall have reason to believe that one or more persons are sick with small-pox or other contagious disease, or on board of which there are contained articles or things as part or all of the cargo, or any materials which may communicate small-pox or other contagious disease (to ascertain which, said vessel shall be subject to visitation and examination by the health officer at the place or places hereinafter mentioned), shall come to anchor at some place being to the southward of a straight line drawn from the south ferry wharf in Perth Amboy to the house on Staten Island, formerly of Caleb Ward, as well as southward and eastward of a straight line drawn from the said

south ferry wharf to the most easterly wharf of South Amboy, and shall be subject to the visitation and examination of the health officer to be appointed as hereinafter mentioned, at such place of anchorage, or at such other place in the waters of Raritan bay lying westward of a line drawn from the light-house at Princes bay to the mouth of Matavan creek, or in the waters of the remainder of Raritan bay to the main sea, lying south of the middle of said bay, or in the waters of the sound between Staten Island and New Jersey, south of Wood-bridge creek, or in the waters of Raritan river, as the said health officer shall think proper, and shall be subject to such regulations as may be deemed expedient by him; and that any master or commander of a vessel offending in the premises shall be considered as guilty of a misdemeanor, and on conviction of the same shall be fined by any court having cognizance thereof in a sum not exceeding one hundred dollars, or be imprisoned for a term not exceeding two months.

Sec. 2. That all other vessels which come into that part of the waters of Raritan bay bounded on the westward by the said line drawn from the light-house at Princes bay to the mouth of Matavan creek; on the eastward by the main sea, and on the north by the middle of Raritan bay, between the first day of March and the first day of December, in this or any other year, or at any other time of the year that the said board of health shall designate by order, under their hands, from time to time, from any port, island or other place in America lying south of Georgia, or from any West India, Bahama or Bermuda island, or from any port or place where yellow or pestilential fever prevails, or on board of which vessel any person shall have been sick or died while at a foreign port, or on the homeward passage, or on board of which the health officer shall have reason to believe that one or more persons are sick with the small-pox or other contagious disease, or on board of which there are contained articles or things as part or all of the cargo, or any materials which may communicate small-pox, or other contagious disease, to ascertain which, said vessel shall be subject to visitation and examination by the health officer at the place or places in this section before mentioned, shall, on request of the master, owner or consignee thereof, be visited and examined by the said health officer, and thereupon shall come to anchor at such place in the waters of the state of New Jersey as may be ordered by the health officer, and shall be subject to such

regulations as may be deemed expedient by him; and that any master or commander of a vessel offending in the premises shall be considered as guilty of a misdemeanor, and on conviction of the same shall be fined by any court having cognizance thereof, in a sum not exceeding one hundred dollars, or be imprisoned for a term not exceeding two months.

Sec. 3. That whenever a vessel so subject under the first or second section of this act, to the visitation and examination of the health officer, shall arrive at the anchoring places above mentioned, the master, owner or consignee of such vessel shall, if the health officer shall judge it necessary, forthwith cause such vessel to be unloaded, cleansed, ventilated and purified, and that until then no permit shall be granted for her to proceed nearer to the city of Perth Amboy, or other place in the state of New Jersey than the said places of anchorage; and every vessel so subject under the first or second section of this act, to the visitation and examination of the health officer, arriving between the first day of March and the first day of December, or at such other time as shall be designated as aforesaid by the board of health, may be detained at quarantine for any time not exceeding twenty days after her cargo shall have been discharged, and the said vessel thoroughly cleansed, ventilated and purified to the satisfaction of the health officer and the board of health; and that every master, owner or consignee neglecting or refusing to comply with the provisions herein contained, shall be guilty of a misdemeanor, and upon conviction of the same shall be fined in a sum not exceeding one hundred dollars, or imprisonment for a term not exceeding two months.

Sec. 4. That the mayor and aldermen of the city of Perth Amboy, for the time being, shall, *ex-officio*, be members of a board of health, a majority of whom shall constitute a quorum, and they or a majority of them, or a majority of the quorum thereof, shall exercise all the powers herein given to the board of health, and shall have power to do and perform all such duties not devolving on the health officer by this act, as may be necessary to carry this act into effect, and the expense of any act or thing necessary to be done for the protection of the public health shall, in such case, be paid by any master, owner or consignee of the vessel the condition of which requires the doing of such act or thing, and shall have the power to appoint, by writing, under their hands and the corporate seal of the city of Perth Amboy,

some fit person as health officer, or visiting physician, whose duty it shall be to visit at the place or places aforesaid, all vessels which are required to come to anchor as aforesaid, or are subject under the first or second sections of this act to his visitation and examination as aforesaid, and in case one or more of the crew or passengers are sick, to report the same and the situation thereof to the board of health, and grant permits to land passengers, baggage, crews and cargoes, or to discharge cargoes into lighters and release vessels from quarantine, and to grant bills of health, and to direct, at the expense of the master, owner or consignee of all such vessels subject under the first or second sections of this act to visitation and examination as aforesaid, the manner in which the same shall be cleansed, ventilated and purified, and when done, to certify the same to the board of health; and the said health officer shall be entitled to ask, demand and receive of and from the master, owner or consignee of all vessels aforesaid, the sum of ten dollars for the first visit to such vessels, and the further sum of five dollars for his report to said board of health, and the further sum of two dollars and fifty cents for his permit for the crews, passengers and baggage or cargo to leave the vessel and be put on land or into lighters, and the further sum of two dollars and fifty cents for every visit thereafter made at the request of such master, owner or consignee, or of the board of health, to inspect such vessel after she shall have been cleansed, ventilated and purified as aforesaid, or to attend any person sick on board, and the further sum of two dollars and fifty cents for every bill of health, when demanded by the master, owner or consignee, and the like sum to be paid by the person demanding it for a bill of health in any other case.

Sec. 5. That the said board of health or a majority thereof, or a majority of a quorum thereof, shall upon the report of the health officer that it is proper to do so, grant a permit to any vessel to leave the said anchorage after she shall have been cleansed, ventilated and purified, if the same be necessary to be done and has been done; and they, as well as the health officer, shall have power to forbid the intercourse with any vessel aforesaid having on board persons sick of a pestilential disease, or yellow fever, or being in a condition in which there is danger to the public health by such intercourse, and to prevent any of the crew or passengers of such vessel (except the captain or master of the vessel for the purpose of entry) from leaving the vessel; and every person offending in the premises shall be adjudged

guilty of a misdemeanor, and shall on conviction of the same in any court of competent jurisdiction, be fined in a sum not exceeding two hundred dollars, or be imprisoned for a term not exceeding three months.

Sec. 6. That it shall be lawful for the board of health to ask, demand and receive from the master, owner, or consignee of any such vessel in respect of which the duties shall be performed by them the following fees, viz.: for any meeting of the board to hear the report of the health officer in case of sickness on board as aforesaid, the sum of five dollars; for every permit for passengers and crews to leave the vessel granted by them after such report, the sum of three dollars; for the release of the vessel after the final report of the health officer in case of sickness as aforesaid, the sum of two dollars and fifty cents, and fees to be divided between the members of the board acting in the premises.

Sec. 7. That the health officer is hereby authorized to appoint one or more deputies to act with him as well as in his stead, who shall continue in office at his pleasure, and be paid by the said health officer out of his fees hereinbefore provided for.

Sec. 8. That the act entitled "An act to prevent the introduction of malignant and other infectious diseases into the city of Perth Amboy," passed the third of February, one thousand eight hundred and twelve, be and the same is hereby repealed, and that this act shall take effect immediately.

A supplement to "An act to prevent the introduction of malignant and other infectious diseases into this state," approved April fourth, one thousand eight hundred and seventy-one.

Approved February 18, 1832.

Sec. 1. That all vessels intending to go by the way of Raritan bay and the Raritan river, or Arthur Kull sound, to any port now in existence in this state, between the first day of April and the first day of December in this or any other year hereafter, or at any time of the year that the board of health shall designate by order under their hands from time to time, from any port, island or other place in America lying south of Cape Henlopen, in order to prevent the introduction of contagious, malignant and infectious diseases of all kinds into the city of Perth Amboy and other ports of the state of New Jersey, shall be subject to examination by the health officer of the port of Perth Amboy.

An act to establish in this state boards of health and a bureau of vital statistics, and to define their respective powers and duties.

Approved March 31, 1887.

\* \* \* \* \*

12. *And be it enacted*, That the said local boards of health shall have power to pass, alter or amend ordinances, and make rules and regulations in regard to the public health within their several jurisdictions, for the following purposes, but such ordinance shall have three readings before its final passage, and at least one week shall intervene between the second and third readings of said ordinance, and a notice stating the title of said ordinance and the date when it passed its second reading, shall be published at least one week prior to its final passage in at least one newspaper published in the township, city, town, borough or other local municipal government, if any newspaper is published therein, and if there be no newspaper published therein, then in some newspaper of the county circulating in such township, city, town, borough or other local municipal government:

\* \* \* \* \*

III. To prevent the spreading of dangerous epidemics or contagious diseases, and to declare that the same has become epidemic, and to maintain and enforce proper and sufficient quarantine whenever deemed necessary;

XIII. To remove persons infected to a suitable place, in case of contagious or infectious disease, where in the judgment of the board such removal is necessary and can be accomplished without undue risk to the person or persons diseased, and to disinfect the premises when deemed necessary.

#### CHAPTER 107.

An act to prevent the introduction of dangerous infectious, epidemic and pestilential diseases into the state of New Jersey, and to improve the present system of maritime quarantine.

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

1. No vessel having on board any person or persons affected by yellow fever, cholera, typhus or ship fever, bubonic plague, small-pox, scarlet fever, diphtheria, measles, relapsing fever, or any other

dangerous disease of a contagious, infectious or pestilential nature, and no vessel infected by any of these diseases, and no infected baggage, dunnage, rags or hides, shall be brought to any wharf in the state of New Jersey, and no person, persons or property shall be landed in this state from any such vessel without a permit shall have first been issued by the health officer of the port, if there be such officer, and if there be no such officer, then by the local board of health having jurisdiction in the locality.

2. The master of every vessel from a foreign or domestic port which shall pass the quarantine station located at City Island or elsewhere in Long Island Sound, or the quarantine station at Fort Wadsworth, or elsewhere in New York bay, and which vessel is allowed by written permit, issued by the proper officer at either of the said quarantine stations, to proceed to any port or place in the state of New Jersey, shall, within twenty-four hours after the said permit is received by him, exhibit said permit and deposit the same at the office of the local board of health of the said port or place of destination, and he shall be entitled, subject to the rules and regulations hereinafter provided for, to receive from the said local board of health, or health officer of the port, if there be such officer, a permit to land passengers, baggage and cargo.

3. The health officer of the port, if there be such officer, and if there is no such officer, then the local board of health of every sanitary district in this state, is hereby authorized and empowered to order, whenever in the judgment of said officer or board the public health requires such action, that any vessel which is within the jurisdiction of said officer or board may be removed to the quarantine grounds or to some other place of safety, and may require all of the persons, baggage, merchandise and articles which have been landed from such vessel to be seized, returned on board thereof or removed to quarantine grounds or to other place of safety; if the master, owner or consignee of such vessel cannot be found, or shall neglect or refuse to obey any such order of removal, such health officer or board of health may employ such assistance as may be necessary to effect such removal, and all expenses incurred in such removal shall be paid for by the master, owner or consignee of such vessel; such vessel shall not return within the limits of the jurisdiction of said board or officer, nor come to anchor, nor land at any wharf within

said limits, without the written permission of the said board of health or officer of the port; any person employed to remove any such vessel, persons, merchandise or articles pursuant to this section shall have a lien on such vessel, its tackle, apparel and furniture, for his services and expenses in effecting such removal.

4. The masters of vessels arriving at any port or harbor in the state of New Jersey shall pay to the health officer of the port, if there be such officer, and if there be no such officer, then to the local board of health, the following fees: for inspection of any vessel from a foreign port, five dollars; for inspection of every vessel from a domestic port south of Cape Henlopen, between May first and November first in each year, steamers, three dollars, other vessels one dollar; for medical inspection of every one hundred, or fraction of one hundred, steerage passengers upon transatlantic steamers, two dollars; for each permit issued for the discharge of cargo or baggage brought as freight, twenty-five cents; for sanitary inspection of every vessel after the discharge of cargo or ballast, ten dollars; for disinfection of every vessel from an infected port, or of such vessels as shall require disinfection by reason of exposure to infection or contagion, fifty dollars; for vaccination of persons on vessels on board of which small-pox has developed during the voyage, each twenty-five cents; the health officer of the port, if there be such officer, and if there be no such officer, then the local board of health having jurisdiction in each port and harbor shall report in writing to the board of health of the state of New Jersey on the first day of October of each year; said report shall state the number of vessels inspected during the preceding year; the number of passengers examined; the number of permits issued; the amount of fees received from each vessel and the total amount of fees received, and said report shall also include answers to all inquiries which may have been addressed by said state board to the said health officer or local board of health.

5. The board of health of the state of New Jersey is hereby empowered to make and alter rules and regulations to prevent the introduction into this state of infected persons and property, and to prevent the spread of any dangerous infectious disease which may have been so introduced; the expenses incurred and the services rendered by any local or state health officer, or by any of their employes, in the discharge of any duty imposed by said rules and

regulations in relation to vessels, merchandise, baggage or persons, shall be paid by the master or owner of the vessel in which such persons, baggage or merchandise shall have arrived, and all such expenses, services and charges shall be a lien on the vessels, merchandise or other property in relation to which they shall have been made, incurred or rendered, and if such master, owner or consignee shall omit to pay the same within three days after the presentation of such account, the local or state board of health may proceed to enforce such lien in the manner provided by law; any person or persons who shall violate any of the provisions contained in any rule or regulation made by the said state board of health under the authority contained in this section, shall be punished by a fine of two hundred and fifty dollars, or by imprisonment for a period not exceeding six months, or by both fine and imprisonment.

6. Any person or persons who shall obstruct any duly authorized health officer in the enforcement of any of the provisions of this act, or who shall violate any of the provisions of sections one, two, three and four of this act, shall be guilty of a misdemeanor, and shall be punished by a fine not exceeding three thousand dollars, or by imprisonment in the state prison for a period not exceeding one year, or by both fine and imprisonment.

Approved April 9th, 1897.

REGULATIONS TO PREVENT THE INTRODUCTION OF INFECTIOUS DISEASES INTO THE STATE OF NEW JERSEY, AND TO PREVENT THE SPREAD OF SUCH DISEASES.

1. Every vessel which may arrive in any port or harbor in the state of New Jersey shall be subject to visitation and inspection by the health officer of the port, if there be such officer, and if there be no such officer, then by an officer designated by the local board of health having jurisdiction in said port or harbor, and no person shall land from nor go on board of any vessel arriving from any foreign port, or from any infected place, or from any port south of Cape Henlopen from May 1st to November 1st, nor shall any baggage, cargo or other article be landed from any such vessel until the permit required by section 2 of these regulations shall have been issued.

2. A permit to land passengers, crew, baggage and cargo shall be issued (subject to the provisions of section 5 of these regulations) to the master of every vessel arriving in any of the ports or harbors of this state by the health officer of the port, if there be such officer, and if there be no such officer then by the clerk or other officer designated by the local board of health; *provided*, that such vessel shall have been subjected to sanitary inspection by the proper officer at one of the quarantine stations of the port of New York; *and provided*, that a written permit, issued by said quarantine officer of the port of New York, shall have been deposited in the office of the officer of the port, if there be such officer, and if there be no such officer then in the office of the clerk of the local board of health having jurisdiction in the port or harbor in which said vessel shall have arrived; *and provided*, that said vessel, her passengers, crew, baggage and cargo, shall have been found (see section 3 of these regulations) by said officer of the port or by said local board of health to be free from the infection of yellow fever, cholera, typhus fever, diphtheria, measles or other disease of a contagious, infectious or pestilential nature. Said permit shall be in form as follows:

NEW JERSEY QUARANTINE SERVICE

GENERAL PERMIT TO LAND PASSENGERS, CREW, BAGGAGE AND CARGO.

No.....  
 ..... [Name of place.] ..... [Date.]  
 Permission is hereby given to.....  
 ..... [Name of consignee or master of vessel]  
 to land the passengers, crew, baggage and cargo, *except rags, hides, straw and bedding*,  
 from the ..... arrived .....  
 ..... [Name of vessel.] ..... [Date]  
 from ..... at .....  
 ..... [Port of departure.] ..... [Name of pier.]  
 Signed.....  
 Official title.....

*And be it further provided*, that no permit to land passengers, crew, baggage or cargo shall be issued to the master of any vessel from any foreign port until it shall be shown that the requirements of the act of Congress approved February 15th, 1893, shall have been conformed to in the case of said vessel.

3. No fee shall be charged nor collected for the inspection of any vessel, passengers, crew, baggage or cargo in cases when the said vessel has within twenty-four hours been inspected and allowed to proceed by the proper officer of the quarantine station of the port of New York, and when said vessel has already been charged with the fee for sanitary inspection which is prescribed by the laws of the State of New York.

4. No straw or bedding shall be landed from any vessel from any foreign port or from any infected place until said straw and bedding shall have been disinfected under the supervision of the health officer of the port, if there be such officer, and if there be no such officer then by the officer designated by the local board of health; said disinfection shall consist in exposure, in a closed chamber, to steam at a temperature not less than 240° Fahrenheit for a period not less than thirty minutes.

5. No rags, hides, straw or bedding shall be landed under the authority contained in the permit provided for in section 2 of these regulations, but all of said articles which may arrive in any infected vessel, or in any vessel from a foreign port, or from any infected place, or from any port south of Cape Henlopen, between May 1st and November 1st, shall be landed, stored and transported only in accordance with the terms of a special permit, which special permit shall be in form as follows:

NEW JERSEY QUARANTINE SERVICE.

SPECIAL PERMIT TO LAND RAGS, HIDES, STRAW AND BEDDING.

No.....  
 ..... [Name of place.] ..... [Date.]  
 Permission is hereby given to.....  
 ..... [Name of consignee or master of vessel]  
 of ..... from .....  
 ..... [Name of vessel.] ..... [Port of departure.]  
 to land ..... and to .....  
 ..... [Rags, hides, straw or bedding.] ..... [Store or transport.]  
 the same .....  
 ..... [State location or destination.]  
*Provided*, that said removal of said..... shall be  
 performed ..... in the presence of and subject to the  
 ..... [Date.]  
 approval of an officer of this department.  
 Signed.....  
 Official title.....



6. A record shall be kept by the health officer of the port, if there be such officer, and if there be no such officer then by the clerk or secretary of the local board of health, showing (1) the name of every vessel which has been inspected and also the following facts concerning every such vessel: (2) the name of every vessel for which a permit to land passengers, crew, baggage or cargo has been issued; (3) the port of departure; (4) the name of the master; (5) the number of the crew; (6) the number of the passengers; (7) the number of cases of sickness during the voyage; (8) the character of the sickness; (9) the number and causes of deaths during the voyage; (10) the number of persons sick and the nature of the diseases with which they are affected upon arrival and during detention.

7. In all cases where it shall be found that any person or persons arriving in any of the ports or harbors of this State shall have been exposed to the infection of small-pox, said person or persons shall be vaccinated by the health officer of the port, if there be such officer, and if there be no such officer then by an officer appointed by the local board of health.

8. If any infected vessel or any vessel having on board any person suffering from yellow fever, cholera, typhus fever, bubonic plague, small-pox, scarlet fever, diphtheria, measles, relapsing fever or any other dangerous disease of an infectious nature, shall arrive in any port or harbor in this state, notice by telegraph of the arrival of said vessel shall be immediately sent to the board of health of the State of New Jersey, Trenton, by the health officer of the port, if there be such officer, and if there be no such officer then by the clerk or secretary of the local board of health; and if any such vessel shall arrive in any port or harbor on the eastern border of this State the said vessel shall, together with the passengers, crew, baggage and cargo, be required by the health officer of the port, if there be such officer, and if there be no such officer then by the local board of health or by some authorized officer of said board, to at once proceed to the quarantine station of the port of New York, and the commander of said vessel shall at once cause said vessel to be taken to the said station for such detention and disinfection as may in each case be necessary.

9. No person shall cast overboard from any infected vessel or from any vessel undergoing quarantine detention any straw, bedding, clothing, nor any infected article or substance. If any such straw, bedding, clothing, or article or substance shall be discovered afloat in any

of the waters of this State, or shall be found on the shore of any harbor, bay or any portion of the coast of this State, said materials shall at once be seized and destroyed by the health officer of the port, if there be such officer, and if there be no such officer then by an officer designated by the local board of health.

Any person or persons who violate any of the provisions of the foregoing regulations are liable (see act approved April 9th, 1897) to be punished by a fine of \$250, or by imprisonment for a period not exceeding six months, or by both fine and imprisonment.

By order of the board of health of the State of New Jersey, Trenton, June 29th, 1897.

HENRY MITCHELL,  
Secretary.

#### LAWS.

Following is a list of the titles of the most important acts relating to public health passed in 1897:

Chapter 93—A supplement to the act entitled "An act to prevent the adulteration of food or drugs," approved March 25th, 1881.

Chapter 115—An act to authorize any town, village or municipality governed by a board of commissioners or improvement commission to lay out, open, widen, alter and vacate streets, roads or avenues, and to locate and construct sewers and to acquire lands and buildings, or parts thereof, by purchase or condemnation, for such purposes.

Chapter 152—A further supplement to an act entitled "An act to establish in this state boards of health and a bureau of vital statistics, and to define their respective powers and duties," approved March 31st, 1887. (This is an act enabling local boards of health to make ordinances to prevent the sale of impure or unwholesome milk.)

Chapter 107—An act to prevent the introduction of dangerous infectious, epidemic and pestilential diseases into the state of New Jersey, and to improve the present system of maritime quarantine.

Chapter 168—An act to amend an act entitled "An act to provide for drainage and sewerage in cities of this state," approved April 7th, 1890.

Chapter 170—A supplement to the act entitled "An act to provide for drainage and sewerage in cities in this state," approved April 7th, 1890.

Chapter 56—A supplement to an act entitled "An act to provide for drainage and sewerage in densely-populated villages in which there is a public water-supply," approved March 10th, 1891.

Chapter 193—An act concerning marriage licenses.

Chapter 128—An act to authorize municipal corporations owning or controlling water works to make contracts to furnish water for public or private uses with any adjoining municipality or with any private corporation therein.

Chapter 36—An act to prevent the willful pollution of the waters of the Passaic river, and of the tributaries thereof, above the great falls of the Passaic river at Paterson.

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REPORT

OF THE

Bureau of Vital Statistics

OF THE

STATE OF NEW JERSEY

FOR THE

Statistical Year from July 1st, 1896, to July 1st, 1897.

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## NUMBER OF MARRIAGES, BIRTHS AND DEATHS,

By Counties, Cities and Townships, and Totals for the State,  
for the Year Ending June 30th, 1897.

### ATLANTIC COUNTY.

	M.	B.	D.
Absecon.....	9	12	12
Atlantic City.....	290	423	418
Buena Vista.....	9	34	15
Egg Harbor City.....	14	49	36
Egg Harbor Township.....	32	57	69
Galloway.....	6	53	42
Hamilton.....	10	38	20
Hammonton.....	28	116	73
Mullica.....	2	19	19
Weymouth.....	6	2	3
	406	893	712

### BERGEN COUNTY.

	M.	B.	D.
Bergen.....	8	64	27
Englewood.....	88	98	86
Franklin.....	20	59	38
Hackensack.....	84	123	113
Harrington.....	28	54	43
Hobokus.....	15	62	44
Hobokus.....	27	158	80
Lodi.....	10	48	36
Midland.....	7	45	39
Orvil.....	7	79	55
Oreopack.....	22	79	55
Palisade.....	83	136	104
Ridgefield.....	12	67	37
Ridgewood.....	10	86	31
Saddle River.....	2	2	6
Teaneck.....	47	133	119
Union.....	22	77	57
Washington.....	22	77	57
	872	1,238	936

## BURLINGTON COUNTY.

	M.	B.	D.
Bass River.....	5	19	11
Beverly.....	35	50	66
Bordentown.....	39	67	77
Burlington.....	106	92	147
Chester.....	46	80	75
Chesterfield.....	9	5	20
Cinnaminson.....	7	40	25
Delran.....	6	17	11
Eastampton.....	2	5	6
Evesham.....	4	18	16
Florence.....	7	51	21
Lumberton.....	2	11	4
Mansfield.....	11	29	18
Medford.....	9	29	7
Mount Laurel.....	3	23	23
New Hanover.....	16	11	23
Northampton.....	59	49	102
Palmyra.....	11	32	29
Pemberton.....	7	28	36
Riverside.....	24	39	31
Shamong.....	3	8	4
Southampton.....	11	21	21
Springfield.....	6	8	10
Washington.....	1	14	9
Westampton.....	1	4	6
Willingboro.....	4	2	3
Woodland.....		9	6
	434	761	807

## CAMDEN COUNTY.

	M.	B.	D.
Camden City.....	*4,494	1,177	1,357
Centre.....	6	21	43
Delaware.....	2	14	12
Gloucester City.....	59	85	156
Gloucester.....	32	76	111
Haddon.....	37	103	84
Pensauken.....	11	37	20
Stockton.....	106	155	166
Waterford.....	28	78	41
Winslow.....	4	33	35
	4,779	1,784	2,025

\* Marriages of non-residents, 3,638.

## CAPE MAY COUNTY.

	M.	B.	D.
Cape May City.....	29	28	37
Dennis.....	13	61	29
Lower.....	12	40	25
Middle.....	24	44	46
Upper.....	19	48	33
	97	221	170

## CUMBERLAND COUNTY.

	M.	B.	D.
Bridgeton.....	103	232	211
Commercial.....	3	31	12
Deerfield.....	19	38	27
Downe.....	17	15	11
Fairfield.....	7	16	34
Greenwich.....	5	36	13
Hopewell.....	9	19	43
Landis.....	58	138	138
Lawrence.....	16	28	15
Maurice River.....	9	28	27
Milville.....	95	214	103
Stow Creek.....	3	19	5
	344	864	644

## ESSEX COUNTY.

	M.	B.	D.
Belleville.....	16	59	104
Bloomfield.....	70	194	129
Caldwell.....	16	54	57
Clinton.....	22	81	78
East Orange.....	90	230	202
Franklin.....	13	45	36
Livingston.....	4	10	16
Millburn.....	7	43	4
Montclair.....	96	274	133
Newark.....	2,032	4,754	4,496
Orange.....	143	543	402
South Orange.....	37	123	79
Verona.....	10	14	17
West Orange.....	17	91	53
	2,603	6,520	5,816

## GLOUCESTER COUNTY.

	M.	B.	D.
Clayton.....	17	36	30
Deptford.....	10	41	36
East Greenwich.....	3	25	6
Elk.....	4	14	6
Franklin.....	13	37	23
Glassboro.....	22	55	33
Greenwich.....	6	46	26
Harrison.....	15	15	17
Logan.....	6	26	26
Mantua.....	13	35	23
Monroe.....	19	14	30
South Harrison.....	6	17	11
Washington.....	6	26	17
West Deptford.....	6	20	17
Woodbury.....	34	78	61
Woolwich.....	15	42	26
	250	527	398

## HUDSON COUNTY.

	M.	B.	D.
Bayonne.....	185	631	440
Guttenberg.....	9	97	59
Harrison.....	54	129	190
Hoboken.....	888	1,772	1,278
Jersey City.....	1,592	3,586	3,735
Kearny.....	45	152	234
North Bergen.....	23	174	307
Town of Union.....	173	307	212
Union.....	28	119	88
Weehawken.....	7	62	75
West Hoboken.....	149	545	312
	3,096	7,524	6,980

## HUNTERDON COUNTY.

	M.	B.	D.
Alexandria.....		13	24
Bethlehem.....	7	22	24
Clinton.....	19	48	82
Delaware.....	23	27	24
East Amwell.....	10	14	15
Franklin.....	8	20	17
Frenchtown.....	21	17	19
High Bridge.....	12	48	23
Holland.....	14	13	24
Kingwood.....	5	23	25
Lambertville.....	33	74	89
Lebanon.....	19	42	35
Raritan.....	19	80	64
Readington.....	23	50	51
Tewksbury.....	13	26	23
Union.....	9	8	15
West Amwell.....	5	12	13
	245	527	517

## MERCER COUNTY.

	M.	B.	D.
East Windsor.....	13	21	40
Ewing.....	7	15	119
Hamilton.....	17	30	157
Hopewell.....	40	47	69
Lawrence.....	6	16	20
Princeton.....	33	98	91
Trenton.....	*647	796	1,060
Washington.....	5	8	14
West Windsor.....	6	14	11
	779	965	1,581

\*Marriages of non residents, 100.

## MIDDLESEX COUNTY.

	M.	B.	D.
Cranbury.....	12	31	25
East Brunswick.....	39	86	67
Madison.....	3	4	14
Monroe.....	13	23	14
New Brunswick.....	141	233	395
North Brunswick.....	8	18	14
Perth Amboy.....	131	410	247
Piscataway.....	17	67	54
Raritan.....	25	59	51
Sayreville.....	9	98	37
South Amboy.....	41	108	105
South Brunswick.....	8	33	25
Woodbridge.....	34	175	125
	481	1,340	1,176

## MONMOUTH COUNTY.

	M.	B.	D.
Atlantic.....	6	12	17
Eatontown.....	19	33	29
Freehold.....	34	91	75
Holmdel.....	6	17	16
Howell.....	31	81	49
Long Branch.....	32	86	104
Manalapan.....	15	30	25
Marlboro.....	8	17	32
Matawan.....	37	57	43
Middletown.....	41	120	87
Millstone.....	9	14	23
Neptune.....	147	169	256
Ocean.....	10	15	19
Raritan.....	30	96	73
Shrewsbury.....	33	139	158
Upper Freehold.....	28	47	39
Wall.....	46	118	72
	627	1,037	1,117

## MORRIS COUNTY.

	M.	B.	D.
Boonton.....	26	41	56
Chatham.....	33	133	66
Chester.....	14	27	20
Dover.....	42	48	96
Hanover.....	24	67	157
Jefferson.....	10	4	17
Mendham.....	6	27	21
Montville.....	7	9	11
Morristown.....	94	205	180
Mount Olive.....	13	39	34
Passaic.....	7	8	25
Pequannock.....	11	35	20
Randolph.....	17	49	73
Rockaway.....	33	90	103
Roxbury.....	20	72	54
Washington.....	15	33	29
	332	837	963

## OCEAN COUNTY.

	M.	B.	D.
Berkeley.....	2	12	12
Brick.....	17	19	20
Dover.....	22	42	47
Eagleswood.....	4	16	10
Jackson.....	4	20	16
Lacey.....	6	6	12
Lakewood.....	20	54	45
Little Egg Harbor.....	3	45	31
Manchester.....	4	4	8
Ocean.....	7	10	7
Plumsted.....	8	11	17
Stafford.....	7	18	14
Union.....	6	22	15
	110	279	254

## PASSAIC COUNTY.

	M.	B.	D.
Acquackanonk.....	8	53	43
Little Falls.....	12	65	43
Manchester.....	20	111	80
Passaic.....	310	632	482
Paterson.....	851	2,039	1,963
Pompton.....	17	34	28
Wayne.....	14	27	26
West Milford.....	19	13	24
	1,251	2,974	2,681

## SALEM COUNTY.

	M.	B.	D.
Alloway.....	8	13	13
Elsinboro.....	2	2	2
Lower Alloways Creek.....	18	26	13
Lower Penn's Neck.....	3	15	26
Mannington.....	5	15	34
Oldmans.....	6	23	18
Pilesgrove.....	31	48	68
Pittsgrove.....	12	53	36
Quinton.....	9	17	21
Salem.....	50	82	111
Upper Penn's Neck.....	15	41	31
Upper Pittsgrove.....	14	13	31
	171	348	494

## SOMERSET COUNTY.

	M.	B.	D.
Bedminster.....	19	35	38
Bernards.....	16	30	51
Branchburg.....	3	12	16
Bridgewater.....	33	237	134
Franklin.....	11	76	59
Hillsborough.....	27	26	42
Montgomery.....	6	11	19
North Plainfield.....	26	76	67
Warren.....	3	18	10
	194	521	486

## SUSSEX COUNTY.

	M.	B.	D.
Andover.....	8	16	11
Byram.....	6	14	14
Frankford.....	8	24	22
Green.....	3	9	4
Hampton.....	6	7	5
Hardyston.....	24	3	37
Lafayette.....	3	8	11
Montague.....	1	5	15
Newton.....	25	30	39
Sandyston.....	18	5	12
Sparta.....	12	10	18
Stillwater.....	7	8	4
Vernon.....	11	10	25
Walpack.....	2	5	2
Wantage.....	29	22	42
	163	176	261

## UNION COUNTY.

	M.	B.	D.
Clark.....		8	2
Cranford.....	19	13	32
Elizabeth.....	385	938	794
Fanwood.....	11	25	19
Linden.....	7	16	24
New Providence.....	2	18	20
Plainfield.....	109	273	292
Rahway.....	80	97	133
Springfield.....	10	12	10
Summit.....	30	70	54
Union.....	7	37	37
Westfield.....	27	91	55
	687	1,598	1,412

WARREN COUNTY.

	M.	B.	D.
Allamuchy.....	2	4	4
Belvidere.....	82	35	23
Blairstown.....	9	27	23
Franklin.....	8	9	22
Freelinghuysen.....	6	8	8
Greenwich.....	19	17	11
Hackettstown.....	6	36	32
Hardwick.....	1	4	4
Harmony.....	8	20	12
Hope.....		4	5
Independence.....	8	9	8
Knowlton.....	79	15	16
Lopatcong.....	1	37	16
Mansfield.....	19	7	32
Oxford.....	23	66	62
Pahgansbury.....		8	2
Phillipsburg.....	*406	157	155
Pohatcong.....	12	33	28
Washington.....	61	85	70
<b>Totals</b> .....	<b>700</b>	<b>576</b>	<b>583</b>

\* Marriages of non-residents, 302.

SUMMARY.

	M.	B.	D.
Atlantic.....	406	808	712
Bergen.....	372	1,298	935
Burlington.....	434	761	807
Camden.....	4,779	1,784	2,025
Cape May.....	97	221	170
Cumberland.....	344	864	644
Essex.....	2,603	9,520	5,816
Gloucester.....	250	527	398
Hudson.....	3,096	7,524	6,980
Hunterdon.....	245	527	517
Mercer.....	779	985	1,581
Middlesex.....	481	1,340	1,176
Monmouth.....	627	1,087	1,117
Morris.....	382	867	968
Ocean.....	110	279	254
Passaic.....	1,251	2,974	2,681
Salem.....	171	348	404
Somerset.....	194	521	486
Sussex.....	163	176	261
Union.....	687	1,598	1,412
Warren.....	700	576	533
<b>Totals</b> .....	<b>18,171</b>	<b>41,595</b>	<b>29,822</b>

Return of Deaths from all Causes and Certain Specified Diseases, in the Statistical Divisions of the State of New Jersey, for the Year Ending June 30th, 1897.

COUNTIES. Statistical Divisions.	DEATHS AT ALL AGES.										DEATHS FROM THE MORE COMMON CAUSES.																									
	Under one month.	Under one year.	One to five.	Five to twenty.	Twenty to sixty.	Over sixty.	Undeclared.	Total, including un-declared.	Estimated population.	Death-rate per 1,000.	Death-rate per 1,000 without cities of over 5,000.	Deaths under 5 in each 100, or comparison of these.	Number of deaths from chief preventable diseases.	Comparative number of deaths in each 100 from chief preventable diseases.	Remittent fever, etc.	Enteric or typhoid fever.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and group.	Krypselas.	Diarrhœal diseases of children.	Consumption, M.	Consumption, F.	Acute lung diseases.	Brain and nervous diseases of children.	Diseases of heart and circulation.	Renal and cystic diseases.	Adult brain and spinal diseases.	Diseases of internal organs.	Cancer.	Acute rheumatism.	Puerperal.	Violent deaths.	
Atlantic.....	46	114	60	52	247	190	8	713	87,114	19.18	17.68	30.90	179	25.14	1	8	...	3	2	...	9	20	82	27	29	70	41	66	52	19	52	7	7			
Bergen.....	82	128	92	61	294	230	8	985	72,461	12.90	12.49	31.76	263	26.18	9	10	...	4	1	...	8	7	21	54	41	102	48	86	51	98	64	7	7			
Burlington.....	50	119	63	47	215	81	2	807	60,061	13.44	7.93	26.75	220	27.26	1	11	...	4	1	...	8	2	85	27	58	116	46	80	51	85	48	4	4			
Camden.....	126	388	290	192	622	442	6	2,025	105,070	19.27	15.80	37.68	700	37.84	6	56	...	18	7	...	11	120	120	101	105	260	159	176	107	181	94	88	4	4		
Cape May.....	9	21	14	13	49	61	8	170	13,489	12.60	12.62	25.88	77	27.64	2	2	...	...	...	...	2	2	18	11	10	23	9	22	7	28	10	8	...	...	...	
Cumberland.....	40	90	60	55	168	229	2	614	61,656	11.91	12.29	29.50	186	28.68	2	13	...	...	...	...	2	2	64	35	89	79	87	79	28	79	38	22	...	...	...	
Essex.....	495	938	746	898	2,082	1,224	9	5,816	84,000	17.41	11.60	37.05	1,937	33.81	19	58	...	64	40	...	70	223	705	442	297	787	366	459	405	494	295	168	12	...	...	...
Gloucester.....	80	177	87	88	231	140	2	898	31,925	17.81	15.08	30.65	112	26.14	22	66	...	50	25	...	80	381	801	464	848	1,020	929	496	395	447	866	169	16	...	...	...
Hudson.....	466	1,288	987	504	2,633	1,091	8	6,930	392,650	19.84	19.38	38.79	2,252	32.50	2	22	...	...	...	...	2	2	2	11	10	23	9	22	7	28	10	8	...	...	...	
Hunterdon.....	26	61	35	48	124	227	1	517	85,834	14.69	14.82	28.02	180	26.15	8	28	...	...	...	...	2	2	2	7	7	17	2	61	61	65	86	17	2	...	...	...
Mercer.....	115	228	140	106	543	496	18	1,681	77,762	18.01	22.44	30.56	459	30.82	8	38	...	...	...	...	2	2	7	46	24	16	88	15	45	19	43	37	10	...	...	...
Middlesex.....	52	201	172	94	845	276	6	1,176	73,978	16.08	13.22	36.69	367	27.66	8	28	...	...	...	...	2	2	2	10	10	23	9	22	7	28	10	8	...	...	...	
Monmouth.....	60	168	81	68	351	888	7	1,117	78,109	14.80	14.82	26.02	803	27.66	12	30	...	...	...	...	2	2	2	10	10	23	9	22	7	28	10	8	...	...	...	
Morris.....	64	131	72	79	312	297	8	693	61,710	13.61	15.08	28.76	263	27.81	11	11	...	...	...	...	2	2	2	10	10	23	9	22	7	28	10	8	...	...	...	
Ocean.....	17	38	12	28	77	91	1	254	19,185	18.27	18.27	24.41	69	27.17	2	7	...	...	...	...	2	2	2	10	10	23	9	22	7	28	10	8	...	...	...	
Passaic.....	216	639	449	249	814	411	8	2,031	144,499	18.65	11.97	44.01	1,015	37.86	10	68	...	...	...	...	2	2	2	10	10	23	9	22	7	28	10	8	...	...	...	
Salem.....	24	53	39	40	89	151	8	404	26,456	15.27	14.76	28.15	115	25.47	8	12	...	...	...	...	2	2	2	10	10	23	9	22	7	28	10	8	...	...	...	
Somerset.....	33	62	37	23	150	171	8	486	31,801	15.58	15.58	24.15	122	25.10	8	7	...	...	...	...	2	2	2	10	10	23	9	22	7	28	10	8	...	...	...	
Sussex.....	14	30	19	19	81	97	1	261	22,958	11.55	11.55	24.18	53	20.81	1	14	...	...	...	...	2	2	2	10	10	23	9	22	7	28	10	8	...	...	...	
Union.....	128	275	120	86	450	351	4	1,412	96,578	15.69	11.79	33.90	459	31.09	17	18	...	...	...	...	2	2	2	10	10	23	9	22	7	28	10	8	...	...	...	
Warren.....	48	64	42	134	200	2	585	37,675	14.18	13.70	29.08	140	26.37	4	4	...	...	...	...	2	2	2	10	10	23	9	22	7	28	10	8	...	...	...		
<b>Totals</b> .....	<b>2,110</b>	<b>4,975</b>	<b>3,928</b>	<b>2,507</b>	<b>9,847</b>	<b>7,064</b>	<b>190</b>	<b>29,822</b>	<b>1,764,144</b>	<b>16.90</b>	<b>13.81</b>	<b>35.59</b>	<b>9,427</b>	<b>31.61</b>	<b>132</b>	<b>478</b>	...	<b>203</b>	<b>156</b>	...	<b>821</b>	<b>1,382</b>	<b>8,465</b>	<b>17,657</b>	<b>4,472</b>	<b>4,039</b>	<b>1,809</b>	<b>2,475</b>	<b>17,621</b>	<b>26,821</b>	<b>15,721</b>	<b>837</b>	<b>169</b>	<b>278</b>	<b>1,696</b>	

Note.—Under the heading "Number of deaths from chief preventable diseases," the first ten diseases are classified, including consumption (male and female). Of those dying under one year, 1,115 died under one month, of which 1,478 died in the large cities. Of the 10,614 that died under five years, 7,567 died in the large cities. Total death-rate for consumption for the State as compared with total deaths, 0.85, the deaths being in the cities 2,286, 984 outside. Rates for short periods or which deal with small numbers can not eliminate or balance errors which practically disappear in larger aggregates. The number of deaths before twenty in proportion to the remainder, is much more numerous, and concerning local causes affecting health than total deaths. See, also, number dying from chief preventable diseases. The death-rate for the present year is based upon the increased population from the National census of 1890 to the State census of 1895, and is therefore liable to slight errors, as this method of calculation can never be accurate for all places, as in any given period of five or ten years a city may show greater percentage of increase than in any prior interval of years.





REPORT OF VITAL STATISTICS.

Return of Deaths from all Causes and Certain Specified Diseases, in the Statistical Divisions of the State of New Jersey, for the Year Ending June 30th, 1897.

ATLANTIC COUNTY. Statistical Divisions.	DEATHS AT ALL AGES.							Estimated population.	Death-rate per 1,000.	DEATHS FROM THE MORE COMMON CAUSES.																				
	Under one month.	Under one year.	One to five.	Five to twenty.	Twenty to sixty.	Over sixty.	Undeclared.			Total, including undeclared.	Remittent fever, &c.	Eruptive or typhoid fever.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Erysipelas.	Diatyral diseases of children.	Consumption, M.	Consumption, F.	Acute lung diseases.	Brain and nervous diseases of children.	Diseases of heart and circulation.	Renal and cystic diseases.	Adult brain and spinal diseases.	Digestive and intestinal diseases.	Cancer.	Acute rheumatism.	Fueryal.
Albion.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	28	75	33	85	171	74	12	20,437	20.45	4	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Beaua Vista.....	1	2	1	4	5	15	15	20,437	20.45	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Egg Harbor City.....	3	5	3	7	10	36	36	10,000	10.00	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Egg Harbor Township.....	3	5	3	7	10	36	36	10,000	10.00	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Egg Harbor Township Highway.....	4	5	4	10	18	42	42	10,000	10.00	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Hamilton.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Hamilton Municipal.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Weymouth.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Total.....	46	114	66	152	217	196	3,712	37,114	19.18	1	8	8	2	5	20	2	2	27	29	70	41	66	52	61	26	26	1	7	25	

MORTALITY TABLES.

Return of Deaths from all Causes and Certain Specified Diseases, in the Statistical Divisions of the State of New Jersey, for the Year Ending June 30th, 1897.

BERGEN COUNTY. Statistical Divisions.	DEATHS AT ALL AGES.							Estimated population.	Death-rate per 1,000.	DEATHS FROM THE MORE COMMON CAUSES.																				
	Under one month.	Under one year.	One to five.	Five to twenty.	Twenty to sixty.	Over sixty.	Undeclared.			Total, including undeclared.	Remittent fever, &c.	Eruptive or typhoid fever.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Erysipelas.	Diatyral diseases of children.	Consumption, M.	Consumption, F.	Acute lung diseases.	Brain and nervous diseases of children.	Diseases of heart and circulation.	Renal and cystic diseases.	Adult brain and spinal diseases.	Digestive and intestinal diseases.	Cancer.	Acute rheumatism.	Fueryal.
Bergen.....	2	9	6	2	9	9	37	87	15.02	1	2	2	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Englewood.....	6	12	5	9	88	16	86	5,221	15.02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Franklin.....	1	7	3	4	13	10	38	8	15.02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Hackensack.....	9	7	2	8	84	63	118	7,798	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Harrington.....	4	6	5	8	11	18	48	4	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Hobokus.....	4	6	5	8	11	18	44	4	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Lodi.....	12	12	12	6	28	22	90	8	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Midland.....	4	4	1	1	16	10	36	3	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Orville.....	4	1	3	1	18	16	39	3	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Overspeck.....	4	1	14	20	1	15	15	1	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Palisade.....	9	17	12	8	83	80	104	2	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Ridgefield.....	2	5	6	2	14	7	37	1	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Ridgewood.....	1	1	7	4	2	8	6	1	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Salmon River.....	1	1	1	1	1	1	1	1	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Teaneck.....	19	18	16	12	85	28	119	8	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Union.....	3	8	3	15	19	57	57	1	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Washington.....	18	18	16	12	85	28	119	8	14.49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals.....	82	128	92	61	294	280	8,985	72,461	12.90	9	10	6	10	7	33	2	2	31	34	41	102	63	85	93	64	35	6	7	75	

REPORT OF VITAL STATISTICS.

Return of Deaths from all Causes and Certain Specified Diseases, in the Statistical Divisions of the State of New Jersey, for the Year Ending June 30th, 1897.

BURLINGTON COUNTY. Statistical Divisions.	DEATHS AT ALL AGES.										DEATHS FROM THE MORE COMMON CAUSES.																							
	DEATHS AT ALL AGES.										DEATHS FROM THE MORE COMMON CAUSES.																							
	Under one month.	Under one year.	One to five.	Five to twenty.	Twenty to sixty.	Over sixty.	Undeclared.	Total, including undeclared.	Estimated population.	Death-rate per 1,000.	Remittent fever, &c.	Bubonic or typhoid fever.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Erysipelas.	Diarrheal diseases of children.	Consumption, M.	Consumption, F.	Acute lung diseases.	Brain and nervous diseases of children.	Diseases of heart and circulation.	Renal and cystic diseases.	Adult brain and spinal diseases.	Digestive and intestinal diseases.	Cancer.	Acute rheumatism.	Fuereptal.	Violent deaths.			
Bas River.....	8	8	1	4	1	1	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
Beverly.....	8	11	2	5	18	27	59	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....		
Bowtown.....	8	11	2	5	18	27	59	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Burlington.....	8	19	10	9	41	66	147	8,076	18.20	2	2	2	2	1	1	5	1	10	5	19	23	10	15	13	10	18	10	7	8	1	1	1		
Cheserfield.....	8	2	5	3	14	28	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Cinnaminson.....	8	4	6	6	5	11	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Detroit.....	1	2	2	2	2	2	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Eastampton.....	1	2	2	2	2	2	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Elizabeth.....	3	3	2	2	4	1	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Florence.....	3	2	2	4	1	1	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Lamberton.....	2	2	2	4	1	1	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mansfield.....	2	2	1	1	1	1	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Medford.....	1	2	1	1	1	1	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Medford Grove.....	1	2	1	1	1	1	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Hanover.....	2	1	2	2	4	4	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Northampton.....	1	1	1	1	1	1	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Palmyra.....	1	1	1	1	1	1	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pemberton.....	1	1	1	1	1	1	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Riverside.....	6	8	2	11	14	36	86	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Shamong.....	7	1	1	2	3	4	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Southampton.....	2	2	2	3	12	21	51	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Springfield.....	2	2	2	3	12	21	51	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington.....	1	2	1	1	1	1	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington.....	1	2	1	1	1	1	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Washington.....	1	2	1	1	1	1	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Woodland.....	1	1	1	1	1	1	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Woodland.....	1	1	1	1	1	1	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
<b>Totals.....</b>	<b>50</b>	<b>119</b>	<b>61</b>	<b>67</b>	<b>211</b>	<b>211</b>	<b>567</b>	<b>65,641</b>	<b>14.14</b>	<b>3</b>	<b>11</b>	<b>4</b>	<b>1</b>	<b>8</b>	<b>21</b>	<b>2</b>	<b>45</b>	<b>27</b>	<b>68</b>	<b>116</b>	<b>40</b>	<b>30</b>	<b>51</b>	<b>85</b>	<b>48</b>	<b>17</b>	<b>3</b>	<b>4</b>	<b>39</b>	<b>1</b>	<b>1</b>	<b>1</b>		

Return of Deaths from all Causes and Certain Specified Diseases, in the Statistical Divisions of the State of New Jersey, for the Year Ending June 30th, 1897.

CAMDEN COUNTY. Statistical Divisions.	DEATHS AT ALL AGES.										DEATHS FROM THE MORE COMMON CAUSES.																							
	DEATHS AT ALL AGES.										DEATHS FROM THE MORE COMMON CAUSES.																							
	Under one month.	Under one year.	One to five.	Five to twenty.	Twenty to sixty.	Over sixty.	Undeclared.	Total, including undeclared.	Estimated population.	Death-rate per 1,000.	Remittent fever, &c.	Bubonic or typhoid fever.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Erysipelas.	Diarrheal diseases of children.	Consumption, M.	Consumption, F.	Acute lung diseases.	Brain and nervous diseases of children.	Diseases of heart and circulation.	Renal and cystic diseases.	Adult brain and spinal diseases.	Digestive and intestinal diseases.	Cancer.	Acute rheumatism.	Fuereptal.	Violent deaths.			
Camden City.....	8	279	168	138	401	264	1,387	65,527	20.71	5	38	13	4	4	96	2	194	58	74	179	118	102	52	105	68	25	212	56	.....	.....	.....			
Centre City.....	8	2	10	10	15	16	59	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Delaware.....	8	2	10	10	15	16	59	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Gloucester Township.....	8	4	6	8	42	43	111	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gloucester City.....	12	27	20	10	50	35	2	186	6,001	25.61	5	8	1	1	1	1	6	14	10	8	7	2	18	4	27	5	1	1	14	.....	.....	.....		
Haddon.....	2	13	8	7	23	20	64	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Pensacola.....	1	6	2	1	8	2	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Stockton.....	9	27	26	13	52	39	166	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Waterford.....	6	6	2	13	8	1	41	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Winslow.....	5	5	2	8	9	11	35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
<b>Totals.....</b>	<b>126</b>	<b>388</b>	<b>200</b>	<b>192</b>	<b>622</b>	<b>442</b>	<b>6,202</b>	<b>105,070</b>	<b>19.27</b>	<b>6</b>	<b>66</b>	<b>18</b>	<b>7</b>	<b>11</b>	<b>120</b>	<b>3</b>	<b>273</b>	<b>101</b>	<b>105</b>	<b>260</b>	<b>159</b>	<b>176</b>	<b>107</b>	<b>181</b>	<b>94</b>	<b>38</b>	<b>4</b>	<b>17</b>	<b>92</b>	<b>1</b>	<b>1</b>	<b>1</b>		





Return of Deaths from all Causes and Certain Specified Diseases, in the Statistical Divisions of the State of New Jersey, for the Year Ending June 30th, 1897.

HUDSON COUNTY. Statistical Divisions.	DEATHS AT ALL AGES.						Estimated population.	Death-rate per 1,000.	DEATHS FROM THE MORE COMMON CAUSES.																		
	Under one month.	Under one year.	One to five.	Five to twenty.	Twenty to sixty.	Over sixty.			Under six.	Under six.	Whooping cough.	Diphtheria and croup.	Erysipelas.	Diarrhœal diseases of children.	Consumption, M.	Consumption, F.	Acute lung diseases.	Brain and nervous diseases of children.	Diseases of heart and circulation.	Deaf and cystic diseases.	Adult brain and spinal diseases.	Digestive and intestinal diseases.	Cancer.	Acute rheumatism.	Puerperal.	Violent deaths.	
Baroness	30	82	57	40	105	69	1,450	21.81	21	14	1	2	14	20	14	68	24	42	24	81	24	86	10	1	5	89	
Guttenberg	4	14	14	1	20	5	150	13.01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Harrison	14	31	28	12	79	30	1,390	10.208	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Heboken	80	648	783	68	567	170	1,978	58.287	12	12	15	68	4	178	91	168	98	107	88	76	47	45	3	6	169		
Jersey City	96	633	657	275	1,454	549	19,367	13.00	29	11	48	229	0	978	271	546	303	281	196	212	168	77	9	33	268		
Kearny	11	34	24	20	83	62	2,234	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
North Bergen	18	60	80	16	111	83	897	14.412	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Part of Union	11	20	27	13	53	35	778	17.70	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Union	11	22	22	6	47	11	88	14.70	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Weehawken	8	11	11	6	32	8	76	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
West Hoboken	14	72	46	31	98	66	812	19.84	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Totals	466	1,235	987	504	2,639	1,051	8,693	849,200	19.84	22	66	94	25	89	881	16	801	464	348	1,020	529	496	398	447	863	108	10,168

Return of Deaths from all Causes and Certain Specified Diseases, in the Statistical Divisions of the State of New Jersey, for the Year Ending June 30th, 1897.

HUNTERDON COUNTY. Statistical Divisions.	DEATHS AT ALL AGES.						Estimated population.	Death-rate per 1,000.	DEATHS FROM THE MORE COMMON CAUSES.																				
	Under one month.	Under one year.	One to five.	Five to twenty.	Twenty to sixty.	Over sixty.			Under six.	Under six.	Whooping cough.	Diphtheria and croup.	Erysipelas.	Diarrhœal diseases of children.	Consumption, M.	Consumption, F.	Acute lung diseases.	Brain and nervous diseases of children.	Diseases of heart and circulation.	Deaf and cystic diseases.	Adult brain and spinal diseases.	Digestive and intestinal diseases.	Cancer.	Acute rheumatism.	Puerperal.	Violent deaths.			
Alvordville	1	2	3	3	7	11	24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Beckham	1	2	3	3	7	11	24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Clinton	1	2	3	3	7	11	24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Delaware	1	2	3	3	7	11	24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Franklin	1	2	3	3	7	11	24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Frenchtown	2	2	4	4	10	19	19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
High Bridge	1	1	1	1	3	10	23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Holland	1	1	1	1	3	10	24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Kingwood	1	2	4	4	16	25	25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Lambertville	3	13	6	15	26	26	89	22	14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Lebanon	1	3	2	10	17	35	85	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Raritan	2	9	7	2	17	27	61	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Readington	2	6	1	4	4	9	29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Tewksbury	2	6	1	4	4	9	29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Union	3	3	1	1	8	15	18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
West Anawell	1	1	1	1	2	4	18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
Totals	26	61	35	48	124	227	1,517	35,884	14.00	1	23	2	1	7	17	2	37	18	22	81	21	61	80	65	86	17	2	5	10















Table Showing Number of Deaths from Each of the Classified Diseases for Nineteen Years, 1879-1897.

DISEASES	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
Benign fevers, &c.	295	493	431	379	300	290	279	248	217	264	203	195	180	108	148	162	144	119	132
Emeric or typhoid fever.	324	573	574	887	640	612	612	622	522	622	77	782	685	68	546	435	568	577	478
Small-pox.	.....	15	254	367	64	7	2	4	5	5	8	.....	.....	38	48	11	23	.....	2
Scarlet fever.	627	578	499	1306	839	547	616	222	288	574	583	209	298	1069	*445	272	284	183	203
Mumps.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Whooping cough.	277	130	119	238	139	116	131	274	161	161	279	371	289	168	257	325	272	275	321
Diphtheria and croup.	1100	878	1128	1472	1148	1027	1496	1308	1527	2086	1974	1576	1737	1776	*1577	1294	1464	1758	1882
Diarrhœal diseases of children.	1849	2168	2365	2792	2655	2492	2645	2694	2694	2694	3008	3077	3191	4043	3931	3698	3746	3807	3400
Consumption, M.	2788	2714	2969	1696	1627	1557	1678	1651	1910	1728	1772	1908	1849	1851	*1790	1831	1800	1796	1765
Consumption, F.	2100	1988	2208	2752	2768	2774	2666	2300	2567	2922	2852	3804	4101	5187	3974	4183	4597	4146	4089
Brain and nervous diseases of children.	1647	1638	1642	1999	1683	1598	1791	1774	1896	1971	1928	2082	2029	2242	2072	2083	1926	2018	1800
Diseases of heart and circulation.	972	992	1213	1181	1285	1324	1508	1566	1580	1591	1786	1945	1960	2183	2179	2112	2268	2412	2475
Renal and cystic diseases.	558	516	608	765	759	892	939	926	873	1020	1056	1149	1200	1444	1441	1447	1523	1684	1752
Adult brain and spinal diseases.	1314	1347	1502	1521	1562	1664	1885	1932	1966	2008	1991	2008	2288	2457	2511	2413	2336	2610	2682
Digestive and intestinal diseases.	1011	1005	1090	710	923	1075	1140	1213	1242	1478	1450	1521	1578	1625	1753	1555	1539	1691	1872
Cancer.	378	425	451	402	461	484	495	546	574	612	579	640	642	688	723	733	770	811	857
Acute rheumatism.	76	64	89	53	38	69	56	69	132	142	117	100	76	100	102	91	82	69	69
Puerperal.	191	244	303	244	198	221	238	221	234	244	200	206	200	200	192	192	192	192	192
Violent deaths.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Totals	19797	15843	17539	25910	23310	21716	23807	22784	24381	27178	28548	28830	29830	32096	30696	30004	30084	30767	29922

\* Note.—Total deaths as given include deaths under one month, which are not classified.

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