

# Twenty-second Annual Report

OF THE

# Board of Health

OF THE

STATE OF NEW JERSEY,

AND REPORT OF THE

BUREAU OF VITAL STATISTICS

1898



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State of New Jersey, 1898.

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## SECRETARY'S REPORT.

*Hon. David O. Watkins, Acting Governor of New Jersey*

YOUR EXCELLENCY—This bureau was established in 1878, and we are therefore able to present in the tables of vital statistics which accompany this report comparative statements showing births, marriages and deaths for twenty years.

During the year ending June 30th, 1898, the number of births reported was 32,515, this being 925 more than were returned for the previous year. The following table shows the number of births which have been registered during the twenty years, 1879—1898 :

TABLE I.—BIRTHS REGISTERED IN NEW JERSEY DURING THE TWENTY YEARS ENDING JUNE 30TH, 1898.

Year.	Number of Births.	Year.	Number of Births.
1879 .....	23 205	1889 .....	30 407
1880 .....	24 292	1890 .....	31 770
1881 .....	24 268	1891 .....	30 023
1882 .....	23 812	1892 .....	32 726
1883 .....	25 667	1893 .....	34 639
1884 .....	26 539	1894 .....	35 108
1885 .....	25 189	1895 .....	33 198
1886 .....	27 382	1896 .....	33 096
1887 .....	23 016	1897 .....	31 595
1888 .....	29 084	1898 .....	32 515

The foregoing figures do not show the entire number of births which have occurred in New Jersey during the periods indicated in the table, for, although the returns of marriages and deaths are reported with great accuracy, it is well known that many births go unrecorded and unnoticed.

The following tables show the birth-rates for twenty years as indicated by the certificates which have been returned to this office, compared with the death rates for the same period :

## REPORT OF THE BOARD OF HEALTH.

TABLE 2.—RATES PER 1000 OF THE POPULATION OF BIRTHS AND DEATHS FOR TWENTY YEARS, 1879-1898.

	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Birth-rate.....	23.63	20.94	20.76	20.42	21.60	23.23	18.24	19.96	21.39	21.97
Death-rate.....	*20.03	16.77	18.39	22.90	20.60	19.20	18.63	17.80	19.64	17.01
	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Birth-rate.....	20.52	20.89	19.53	20.26	20.98	21.33	18.97	18.16	17.99	17.96
Death-rate.....	18.99	19.50	19.50	21.62	19.83	19.09	18.31	17.50	16.90	15.11

\*The death-rate for 1879 was based upon a census which was imperfect, and is therefore probably slightly larger than it should be.

NOTE.—The returns of births received by this Bureau are not as complete as are those for marriages and deaths, hence the above table does not represent with accuracy the relations between the birth-rates and death-rates.

The total number of deaths which occurred during the statistical year ending June 30th, 1898, was 27,337, or 2,485 less than during the preceding year, and 2,699 less than the average number of deaths for the last eight years. When these facts are considered in relation to the yearly increase in population, amounting to 231,925 annually, the extraordinary diminution in the mortality during the last year is apparent.

The estimated population for 1898 is 1,810,008, and the death-rate for the year is, therefore, 15.10, which is lower than any heretofore recorded in the State, as the following table shows :

TABLE 3.—TOTAL NUMBER OF DEATHS FROM ALL CAUSES DURING THE TWENTY YEARS ENDING JUNE 30TH, 1898, TOGETHER WITH DEATH RATE PER 1,000 POPULATION.

YEAR.	Total number of deaths.	Death-rate per 1,000 pop.	YEAR.	Total number of deaths.	Death-rate per 1,000 pop.
1879.....	14 085	*	1889 .....	26 543	18 99
1880.....	18 967	16 77	1890 .....	28 530	19 80
1881.....	20 810	18 39	1891 .....	28 840	19 50
1882.....	25 910	22 90	1892 .....	32 685	21 62
1883.....	23 310	20 60	18 3 .....	30 596	19 88
1884.....	21,716	19 20	1894 .....	30 004	19 09
1885.....	23,807	18 63	1895 .....	30 634	18 31
1886.....	22,734	17 80	1896 .....	30 767	17 90
1887.....	24 331	19 04	1897 .....	29 8 2	16 90
1888.....	27,173	17 01	1898 .....	27 337	15 10

\*The estimate of population for 1879 was defective, and an accurate death-rate for that year was not recorded.

# SECRETARY'S REPORT.

TABLE 4.—POPULATION, DEATHS AND DEATH-RATES PER 1,000 LIVING, AT SPECIFIED AGES, FOR THE CENSUS YEARS 1880-1895.

		ALL AGES.	UNDER 5.	5 TO 20	20 TO 60	OVER 60.
1880	{ Population.....	1,131,117				
	{ Deaths.....	18,967	7,407	1,816	5,725	3,881
	{ Death-rate.....	16.77				
1885	{ Population.....	1,278,033				
	{ Deaths.....	23,807	8,020	2,210	7,106	5,142
	{ Death-rate.....	18.63				
1890	{ Population.....	1,441,017				
	{ Deaths.....	28,530	10,738	2,430	9,209	6,051
	{ Death-rate.....	19.80				
1895	{ Population.....	1,672,942				
	{ Deaths.....	30,634	9,074	2,370	10,005	6,874
	{ Death-rate.....	18.31				

TABLE 5.—DEATHS IN NEW JERSEY FROM THE CLASSIFIED DISEASES FOR TWENTY YEARS, 1879-1898.

CAUSES OF DEATH.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Remittent fever.....	268	293	431	379	590	250	269	243	217	264
Typhoid fever.....	324	573	574	881	564	640	643	545	522	620
Small-pox.....	0	15	254	367.	54	7	2	4	5	6
Scarlet fever.....	227	573	499	1,306	833	547.	645	222	255	574
Measles.....	77	87	70	206	131	159	135	83	296	74
Whooping-cough.....	577	130	119	253	119	116	181	274	151	161
Diphtheria and croup.....	1,160	873	1,128	1,472	1,146	1,927.	1,465	1,303	1,527	2,395
Erysipelas.....	137	149	124	94	90	80	74	79	96	128
Diarrhœal diseases of children.....	1,849	2,166	2,356	1,792	2,656	2,462	2,245	2,664	2,694	2,508
Consumption.....	2,788	2,714	2,989	3,475	3,121	3,215	3,20	3,205	3,673	3,399
Acute lung diseases.....	2,160	1,923	2,008	2,753	2,766	2,174	2,566	2,390	2,557	2,322
Brain and nervous diseases of children.....	1,647	1,638	1,643	1,959	1,858	1,696	1,791	1,774	1,896	1,971
Diseases of heart and circulation.....	972	823	1,213	1,181	1,255	1,324	1,503	1,808	1,538	1,681
Renal and cystic diseases.....	563	515	608	785	759	692	639	626	673	1,030
Adult brain and spinal diseases.....	1,314	1,347	1,502	1,521	1,563	1,684	1,295	1,322	1,966	2,095
Digestive and intestinal diseases.....	1,641	1,063	1,050	740	923	1,075	1,140	1,113	1,242	1,476
Cancer.....	273	425	451	403	461	484	492	546	574	612
Acute rheumatism.....	76	61	89	63	83	63	56	63	132	143
Furunculæ.....	194	244	303	244	198	251	308	257	283	271
Violent deaths.....				793	967		857	927	1,081	1,320

CAUSES OF DEATH.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Remittent fever.....	203	195	180	186	148	162	144	119	131	82
Typhoid fever.....	734	792	695	628	505	485	598	577	478	450
Small-pox.....	2	0	0	28	43	11	23	2	0	0
Scarlet fever.....	838	269	228	1,068	445	272	294	163	213	261
Measles.....	118	174	260	127	73	257	35	330	156	195
Whooping-cough.....	373	371	209	163	227	229	272	375	321	155
Diphtheria and croup.....	1,574	1,575	1,737	1,776	1,677	1,244	1,454	1,768	1,323	950
Erysipelas.....	114	81	85	94	74	97	74	69	66	88
Diarrhœal diseases of children.....	3,277	2,827	2,191	4,043	3,941	3,803	3,746	3,807	2,450	2,268
Consumption.....	3,449	3,669	3,476	3,675	3,479	3,433	3,242	3,358	3,237	3,225
Acute lung diseases.....	2,822	2,804	4,101	3,187	3,574	4,153	4,596	4,465	4,729	4,414
Brain and nervous diseases of children.....	1,223	1,023	2,059	2,263	2,073	2,063	1,625	2,018	1,849	1,642
Diseases of heart and circulation.....	1,786	1,945	1,960	2,193	1,779	2,112	2,263	2,412	2,479	2,294
Renal and cystic diseases.....	1,056	1,149	1,206	1,444	1,441	1,447	1,223	1,294	1,721	1,694
Adult brain and spinal diseases.....	1,591	2,208	2,333	2,457	2,611	2,473	2,628	2,610	2,622	2,700
Digestive and intestinal diseases.....	1,450	1,521	1,573	1,625	1,763	1,656	1,589	1,292	1,572	1,424
Cancer.....	573	640	643	608	723	731	770	811	857	882
Acute rheumatism.....	117	105	76	100	102	91	82	89	69	65
Furunculæ.....	354	250	295	232	223	293	294	263	278	264
Violent deaths.....	1,077	1,226	1,366	1,427	1,338	1,500	1,469	1,426	1,656	1,461

4. REPORT OF THE BOARD OF HEALTH.

TABLE 6.—DEATHS FROM ALL OF THE CLASSIFIED CAUSES FOR THE YEAR ENDING JUNE 30TH, 1898, COMPARED WITH DEATHS FOR THE PREVIOUS YEAR, AND COMPARED WITH THE YEARLY AVERAGE FOR TWENTY YEARS, 1879-1898.

CLASSIFIED DISEASES.	Average deaths for twenty years—1879-1898.		
	Deaths for year ending June 30, 1897.	Deaths for year ending June 30, 1898.	Diminished mortality.
Remittent fever .....	216	131	82
Enteric or typhoid fever.....	679	478	450
Small-pox.....	42		
Scarlet fever.....	485	203	201
Measles.....	162	156	195
Whooping cough.....	229	321	155
Diphtheria and croup.....	1,414	1,382	950
Erysipelas.....	91	68	58
Diarrhcal diseases of children.....	3,093	3,450	2,958
Consumption.....	3,310	3,237	3,225
Acute lung.....	3,234	4,039	3,414
Brain and nervous diseases of children.....	1,870	1,809	1,642
Diseases of heart and circulation.....	1,737	2,475	2,286
Renal and cystic diseases.....	1,107	1,752	1,694
Adult brain and spinal disease.....	2,071	2,532	2,700
Adult digestive and intestinal disease.....	1,334	1,572	1,484
Cancer.....	606	857	852
Acute rheumatism.....	80	69	55
Puerperal.....	261	278	264

SECRETARY'S REPORT.

TABLE 7.—SHOWING DIMINISHED MORTALITY IN NEW JERSEY FROM THE CLASSIFIED CAUSES OF DISEASE, FOR THE YEAR ENDING JUNE 30TH, 1898, COMPARED WITH DEATHS FOR THE PREVIOUS YEAR.

CLASSIFIED DISEASES.	Average deaths for twenty years—1879-1898.		
	Deaths for year ending June 30, 1897.	Deaths for year ending June 30, 1898.	Diminished mortality.
Remittent fever.....	131	82	- 50
Typhoid fever.....	478	450	- 28
Small-pox.....	0	0	0
Scarlet fever.....	203	201	- 2
Measles.....	156	185	+ 39
Whooping cough.....	321	155	-166
Diphtheria.....	1,382	950	-432
Erysipelas.....	68	58	- 10
Diarrhcal diseases of children.....	3,450	2,958	-452
Consumption.....	3,237	3,225	- 12
Acute lung diseases.....	4,039	3,414	-625
Brain and nervous diseases of children.....	1,809	1,642	-167
Diseases of heart and circulation.....	2,475	2,286	-189
Renal and cystic diseases.....	1,752	1,684	- 58
Adult brain and spinal diseases.....	2,532	2,700	- 88
Digestive and intestinal diseases.....	1,572	1,484	+168
Cancer.....	857	852	- 5
Acute rheumatism.....	69	55	- 14
Puerperal diseases.....	278	264	- 34

The foregoing table shows that the classified deaths have been less in number during the past year, compared with the year 1897, from each of the classified diseases except two, viz., measles and adult brain diseases, and it is seen that the greatest saving of life has occurred in the groups of diseases which are recognized as preventable in character.

## REPORT OF THE BOARD OF HEALTH.

TABLE 8.—DEATHS FROM VARIOUS DISEASES FOR TWENTY YEARS, 1879-98, ARRANGED IN ORDER OF GREATEST FREQUENCY.

NAME OF DISEASE.	NUMBER OF DEATHS.
Consumption.....	66,211
Acute lung.....	64,689
Diarrhoeal diseases of children.....	60,664
Adult brain and spinal diseases.....	41,229
Diseases of heart and circulation.....	34,747
Brain and nervous diseases of children.....	37,294
Diphtheria and croup.....	28,285
Digestive and intestinal diseases.....	26,689
Renal and cystic diseases.....	22,245
Violent deaths.....	20,008
Cancer.....	12,124
Typhoid fever.....	11,381
Scarlet fever.....	9,708
Puerperal.....	5,239
Whooping cough.....	4,560
Remittent fever.....	4,397
Measles.....	3,258
Erysipelas.....	1,825
Acute rheumatism.....	1,681
Small-pox.....	843

## SECRETARY'S REPORT.

TABLE 9.—DEATHS AND DEATH-RATES IN NEW JERSEY, 1878-98.

YEARS.	DEATHS	DEATH RATES.			
		Death-rate per 1,000 living	Five-year period.	Ten-year period.	Twenty-year period.
1879.....	20,440	18.07	19 34	18.94	18.72
1880.....	18,967	16.77			
1881.....	20,810	18.39			
1882.....	25,910	22.90			
1883.....	23,330	20.60			
1884.....	21,716	19.20	18 35	18.50	
1885.....	23,807	18.63			
1886.....	22,734	17.80			
1887.....	24,381	19.04			
1888.....	27,173	17.01			
1889.....	26,543	18.99	19 55	18.50	
1890.....	28,530	19.80			
1891.....	28,840	19.50			
1892.....	22,685	21.62	17 46	18.50	
1893.....	30,596	19.88			
1894.....	30,004	19.09			
1895.....	30,634	18.31			
1896.....	30,767	17.90			
1897.....	29,822	16.90			
1898.....	27,337	15.11			



CHART SHOWING COMPARATIVE MORTALITY FROM THE TEN MOST PROMINENT CAUSES OF DEATH FOR 1898,  
AND THE AVERAGE DEATHS FROM EACH CAUSE FOR TWENTY YEARS, 1879-1898.

Black lines represent average deaths for twenty years;  
Dotted lines represent deaths in 1898.

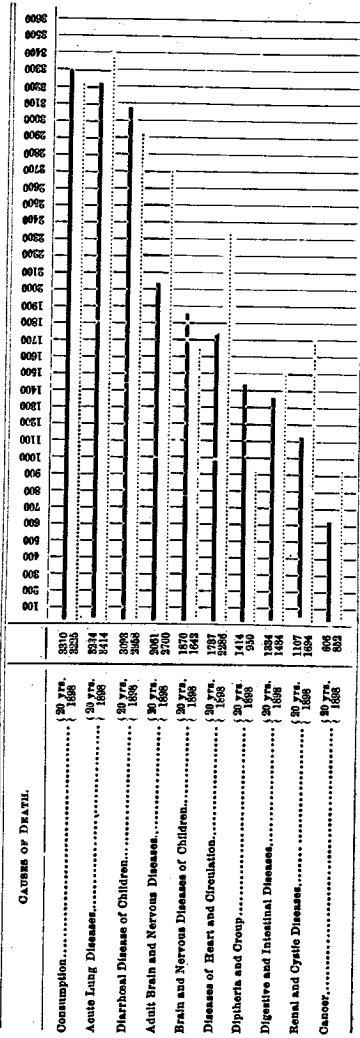


TABLE 10.—DEATHS IN NEW JERSEY, PER 10,000 POPULATION, FROM THE CLASSIFIED CAUSES FOR TWENTY YEARS—1879-1898.

CAUSES OF DEATH.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.
Remittent fever.....	2.62	2.69	2.71	2.10	2.39	1.94	1.63	1.95	1.61	1.91	1.44
Enteric or typhoid.....	3.17	2.59	4.94	7.43	4.65	5.12	7.09	4.15	2.88	4.50	5.14
Small-pox.....	.90	.13	2.15	2.08	.44	.46	.01	.65	.09	.03	.02
Scarlet fever.....	6.14	5.06	4.30	10.69	7.06	4.38	5.68	1.69	1.99	4.17	3.78
Measles.....	.76	.76	.60	.73	1.06	1.51	1.05	.87	2.20	.53	.83
Whooping cough.....	2.71	1.14	1.03	2.13	1.66	.92	4.11	3.09	1.94	1.17	1.37
Diphtheria and group.....	10.86	7.71	5.73	13.37	9.47	8.31	11.70	9.24	11.37	14.30	11.18
Erysipelas.....	1.34	.96	1.68	.79	.74	.54	.57	.69	.71	.93	.90
Diarrrhœal diseases of children.....	18.11	13.16	19.43	15.06	21.90	19.72	22.35	20.62	20.06	25.50	25.59
Consumption.....	37.31	33.99	25.75	39.31	36.81	25.76	28.97	34.45	37.30	34.41	34.50
Acute lung diseases.....	31.16	17.67	17.30	33.13	22.79	17.41	20.07	17.55	19.04	21.74	20.23
Brain and nervous diseases of children.....	16.18	14.48	14.18	16.80	13.90	13.80	14.01	13.63	14.04	14.33	13.66
Diseases of heart and circulation.....	9.52	9.26	10.45	9.22	10.31	10.60	11.75	11.49	11.39	12.29	12.68
Renal and cystic diseases.....	5.46	4.66	5.24	6.43	6.27	7.14	7.34	7.05	6.50	7.41	7.50
Adult brain and spinal diseases.....	12.87	11.91	12.94	12.78	12.91	13.33	14.83	14.74	14.61	15.23	14.14
Digestive and intestinal diseases.....	10.50	9.98	9.30	6.23	7.63	8.93	8.91	9.25	9.24	10.73	10.30
Cancer.....	3.70	3.75	3.89	3.37	3.81	3.87	3.59	4.15	4.21	4.48	4.11
Acute rheumatism.....	.74	.68	.76	.43	.37	.49	.28	.51	.98	.10	.83
Fœrperal.....	1.90	2.16	2.61	3.08	1.63	1.77	1.69	1.96	1.93	1.97	1.80
Violent deaths.....	..	..	..	6.65	7.60	..	6.69	7.80	7.23	9.59	7.65

CAUSES OF DEATH.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	Mean
Remittent fever.....	1.85	1.31	1.30	.96	1.02	.85	1.69	1.74	.45	.57
Enteric or typhoid.....	5.43	4.69	4.15	3.22	3.07	3.29	3.35	2.70	2.48	4.16
Small-pox.....	.00	.00	.25	.97	.06	.13	.01	.00	.00	.30
Scarlet fever.....	1.45	1.94	6.85	9.59	1.72	1.57	1.06	1.15	1.11	3.52
Measles.....	1.20	1.69	1.30	.47	1.63	.56	2.26	.88	1.07	1.17
Whooping cough.....	2.57	2.02	1.07	1.54	2.07	1.62	1.60	1.91	.84	1.64
Diphtheria and group.....	10.26	11.74	11.74	10.89	8.19	5.78	10.52	7.43	5.24	10.17
Erysipelas.....	.66	.87	.62	.48	.61	.44	.40	.38	.33	.55
Diarrrhœal diseases of children.....	24.47	21.37	28.74	23.37	34.69	29.23	22.18	19.56	16.34	23.80
Consumption.....	34.46	23.37	23.64	22.98	21.77	21.17	13.63	16.34	19.31	23.61
Acute lung diseases.....	26.33	37.73	34.31	25.82	26.50	27.49	34.13	22.89	18.68	23.19
Brain and nervous diseases of children.....	14.10	13.73	14.83	13.48	12.11	11.50	11.74	10.25	9.06	13.45
Diseases of heart and circulation.....	13.45	13.21	14.44	14.16	12.74	13.68	14.03	14.63	13.62	12.49
Renal and cystic diseases.....	7.97	8.11	9.55	9.36	9.16	9.10	9.21	9.92	9.33	8.00
Adult brain and spinal diseases.....	16.01	16.77	16.25	16.96	15.29	15.69	15.18	14.63	14.91	14.63
Digestive and intestinal diseases.....	10.35	10.33	10.74	11.33	9.93	9.43	9.43	8.91	8.19	9.50
Cancer.....	4.44	4.34	4.55	4.69	4.63	4.60	4.71	4.43	4.70	4.56
Acute rheumatism.....	.73	.61	.66	.66	.67	.49	.31	.39	.32	.67
Fœrperal.....	1.73	2.00	1.86	1.13	1.35	1.73	1.64	1.67	1.45	1.58
Violent deaths.....	8.57	9.23	9.43	9.99	9.50	8.73	8.39	9.56	8.01	7.23

\* Violent deaths were not separately recorded.

**Deaths from Certain Preventable Diseases.**—The number of deaths from the ten classified communicable diseases was 8,274, or 1,153 less than during the previous year, and 2,083 less than the average for the preceding ten years. The following chart shows the comparative mortality from this group of afflictions for the year ending June 30th, 1898:

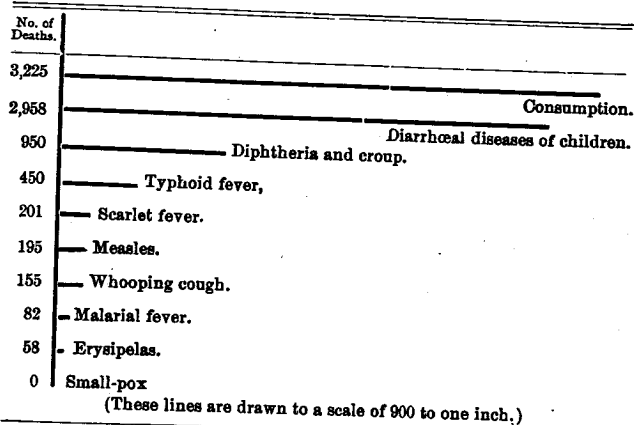
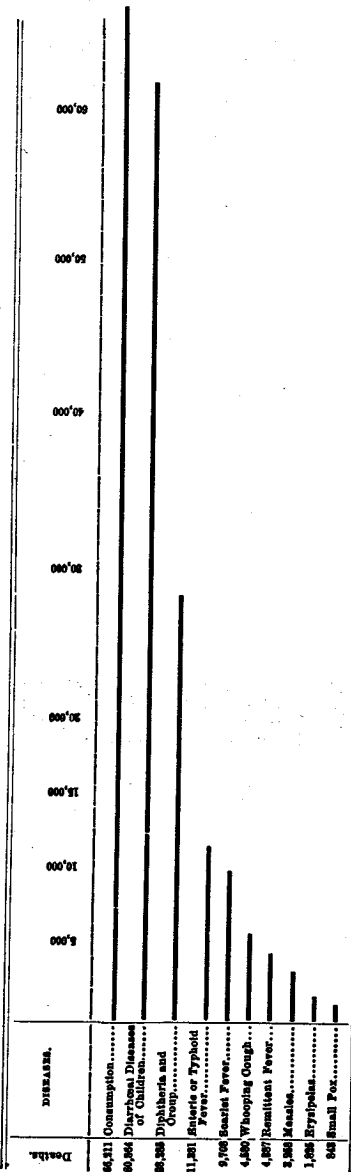


CHART SHOWING DEATHS FROM TEN CHIEF PREVENTABLE DISEASES FOR TWENTY YEARS, 1879-1898.



REPORT OF THE BOARD OF HEALTH.

TABLE 11.—NUMBER OF DEATHS IN EACH YEAR FROM THE TEN CHIEF PREVENTABLE DISEASES IN NEW JERSEY FOR THE TEN YEARS ENDING JUNE 30TH, 1898.

YEAR.	Consumption.	Diarrhoeal diseases of children.	Diphtheria and croup.	Enteric fever.	Scarlet fever.	Whooping cough.	Erysipelas.	Measles.	Small-pox.	Malarial fever.	Totals.
1889.....	3,449	3,963	1,574	794	533	378	114	118	8	303	9,559
1890.....	3,969	3,377	1,275	783	269	371	81	174	192	180	10,393
1891.....	3,456	3,191	1,737	695	386	359	94	197	38	198	10,181
1892.....	3,575	4,343	1,776	628	1,008	153	94	197	38	198	10,739
1893.....	3,433	3,381	1,677	506	445	237	74	73	49	148	10,515
1894.....	3,333	3,033	1,394	456	373	325	74	95	11	169	10,223
1895.....	3,543	3,776	1,464	568	364	377	74	83	23	144	10,192
1896.....	3,748	3,367	1,788	577	183	373	69	830	3	119	10,383
1897.....	3,237	3,460	1,323	476	303	321	68	156	.....	132	9,427
1898.....	3,226	3,535	960	480	301	143	86	129	.....	82	8,774
	34,772	33,493	15,137	5,333	3,605	2,639	764	923	120	1,563	101,618

SECRETARY'S REPORT.

CHART SHOWING MORTALITY FROM SOME OF THE PRINCIPAL CAUSES OF DEATH DURING THE YEAR ENDING JUNE 30, 1898.

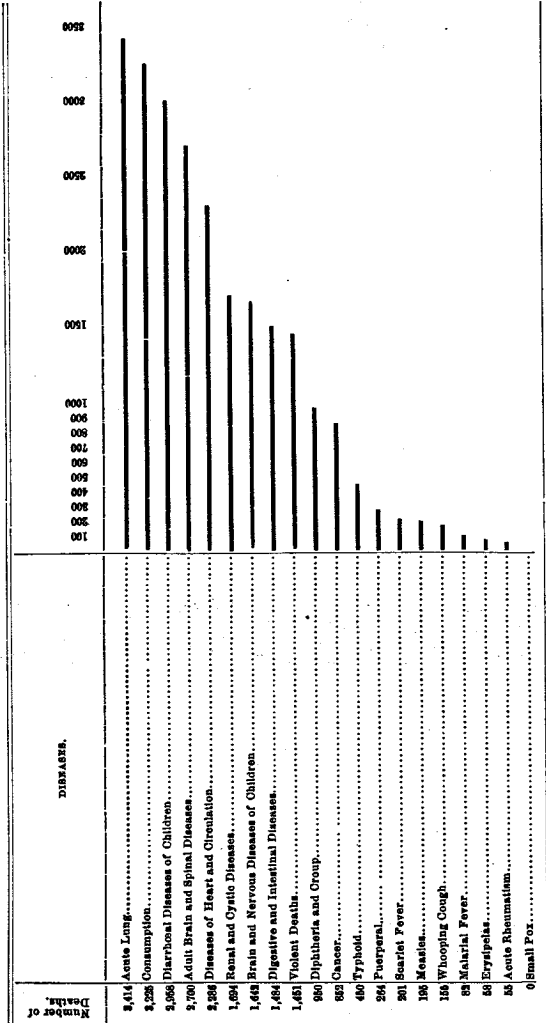


TABLE 12.—RELATIVE AREA, ESTIMATED POPULATION AND DEATH-RATES IN NEW JERSEY, BY COUNTIES, FOR YEAR ENDING JUNE 30TH, 1898.

COUNTIES.	Area in square miles.	Estimated population.	Death-rate per 1,000.	Percentage of deaths under 5 years of age.	In each 1,000 deaths from all causes, there were from—						
					Typhoid fever.	Scarlet fever.	Diphtheria and croup.	Pneumonia and influenza.	Consumption.	Acute lung.	
Atlantic.....	613.49	39,296	16.84	23.47	1.69	.....	3.19	1.70	9.91	1.44	
Bergen.....	344.96	76,326	11.69	21.96	1.91	.....	5.16	1.30	9.59	1.13	
Burlington.....	893.79	69,523	12.69	26.09	3.49	3.94	4.43	1.13	1.59	1.08	
Camden.....	226.96	107,653	16.36	25.53	2.21	8.91	4.43	1.27	1.09	1.11	
Cape May.....	441.06	14,969	11.08	21.18	1.91	.....	3.37	5.98	8.43	8.59	
Cumberland.....	693.96	42,410	11.37	30.36	3.19	.....	2.52	1.16	1.39	8.72	
Gloucester.....	129.72	245,099	15.31	23.77	7.23	6.69	2.39	9.43	1.39	1.06	
Hudson.....	60.45	327,910	12.56	20.96	1.73	4.96	3.53	8.43	1.39	1.53	
Hunterdon.....	439.13	35,331	12.17	15.81	9.30	2.33	1.40	3.49	1.16	1.33	
Mercer.....	327.90	89,574	16.26	27.70	1.58	8.53	1.63	9.17	8.84	1.49	
Middlesex.....	324.44	75,098	13.41	26.69	2.49	4.18	3.54	1.19	1.14	1.26	
Monmouth.....	437.94	61,797	12.67	21.09	2.49	4.18	3.54	1.19	8.81	1.37	
Morris.....	690.19	61,797	12.75	23.47	2.90	7.49	1.87	5.51	7.63	7.93	
Ocean.....	675.61	19,323	16.34	22.37	2.90	7.49	1.87	5.51	1.11	1.16	
Passaic.....	270.16	150,191	15.63	40.86	2.35	6.53	8.49	1.44	1.46	7.30	
Salem.....	393.97	32,642	16.39	27.46	.....	.....	3.31	9.51	1.34	1.11	
Somerset.....	975.02	31,729	11.31	25.33	1.35	.....	6.31	9.51	1.37	8.37	
Sussex.....	439.81	22,261	11.09	23.29	1.2	1.61	4.03	4.42	9.84	1.19	
Union.....	104.94	33,163	14.21	23.10	1.3	7.53	2.95	1.19	1.49	1.45	
Warren.....	324.66	37,731	12.61	27.15	1.3	6.62	2.87	7.29	8.51	1.81	
Totals.....	6,224.44	1,810,068	15.10	24.25	16.45	7.35	34.75	10.23	11.80	12.43	

TABLE 13.—MORTALITY PER 10,000 OF THE POPULATION FROM CERTAIN DISEASES IN NEW JERSEY FOR THE 20 YEARS ENDING JUNE 30TH, 1898.

CAUSES OF DEATH.	1878 to 1883				1883 to 1888				1888 to 1893				1893 to 1898			
	1878 to 1883		1883 to 1888		1888 to 1893		1893 to 1898		1878 to 1883		1883 to 1888		1888 to 1893		1893 to 1898	
Consumption.....	133.29		131.05		122.05		98.62		104.03		110.74		126.92		105.09	
Diarrhœal diseases of children.....	50.60		55.46		57.86		40.23		.....		.....		.....		.....	
Diphtheria and croup.....	.....		.....		.....		.....		34.09		17.61		17.23		6.61	
Scarlet fever.....	.....		.....		.....		.....		15.21		17.00		6.41		5.75	
Remittent fever.....	.....		.....		.....		.....		8.45		7.15		9.35		7.95	
Whooping cough.....	.....		.....		.....		.....		.....		.....		.....		.....	
Measles.....	5.06		6.11		5.62		6.39		4.90		3.50		3.10		2.15	
Erysipelas.....	6.09		.01		.05		.20		.....		.....		.....		.....	
Small-pox.....	.....		.....		.....		.....		.....		.....		.....		.....	

Consumption.—The deaths reported from this cause vary but little from year to year, as the following table shows:

TABLE 14.—NUMBER OF DEATHS FROM CONSUMPTION IN NEW JERSEY FOR THE TWENTY YEARS ENDING JUNE 30TH, 1898.

YEAR.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Number of deaths from consumption.....	2,788	2,714	2,969	3,475	3,121	3,216	3,230	3,205	3,663	3,268

YEAR.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Number of deaths from consumption.....	3,449	3,669	3,456	3,676	3,429	3,433	3,542	3,358	3,237	3,226

Doubtless a considerable number of the deaths returned as being caused by acute lung diseases are in reality tuberculous in character, and with the advances now occurring in diagnosis, due to the more general employment of the bacteriological method, it is probable that these errors in classification will diminish in future.

Diarrhœal Diseases of Children.—There has been a very marked decrease in the death-rate from the affections which are brought together in this classification, quite in accord with the improvement which was observed during 1897. The number of deaths from this cause for the year ending June 30th, 1898, was 2,958, this number being 492 less than for the previous year, and 645 less than the average for the previous ten years. The opinion prevails among the physicians of the State that the improvement in infant mortality is mainly due to the general adoption of more cleanly methods in the care of milk. The summer was hot and humid, and the high temperature was long-continued and attended by many exceedingly warm nights, but notwithstanding these trying conditions the deaths among children under five years of age was extraordinarily low, plainly indicating that the heat of summer, to which so many deaths of infants have heretofore been ascribed, is not in fact a deadly enemy to child-life, but that other influences, already partially under control, constitute the most important element of danger.

TABLE 15.—NUMBER OF DEATHS FROM DIARRHOEAL DISEASES OF CHILDREN DURING TWENTY YEARS, 1879-1898.

Years.....	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Deaths .....	1,849.	2,186.	2,365.	2,792.	2,656.	2,402.	2,845.	2,664.	2,694.	2,508.

Years.....	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Deaths .....	2,377.	2,027.	3,191.	4,042.	3,981.	3,893.	3,746.	3,907.	3,450.	2,868.

TABLE 16.—DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE FROM ALL CAUSES, AND COMPARISON OF THESE WITH TOTAL DEATHS FOR TWENTY YEARS, 1879-1898.

	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Number of deaths among children under five years .....	7,919	7,407	7,617	10,512	8,790	7,971	9,129	8,837	9,245	10,408
Total deaths for each year.....	20,440	18,967	20,810	25,910	23,810	21,716	23,807	22,734	24,331	27,173
Percentage of deaths among children under five years to total deaths.....						36.70	38.31	37.55	38.00	38.67

	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Number of deaths among children under five years .....	10,354	10,738	10,696	12,369	11,207	11,477	11,326	11,759	10,614	9,365
Total deaths for each year.....	26,543	24,830	28,846	33,628	30,696	30,004	30,624	30,767	29,823	27,337
Percentage of deaths among children under five years to total deaths.....	39.01	37.64	37.05	37.54	36.96	38.23	36.81	38.22	33.59	37.97

**Diphtheria.**—The number of deaths from diphtheria has continued to diminish, and only 950 were reported. This is 432 less than occurred from this disease in the year 1897, and 419 less than the average deaths from this affection for the past nineteen years. There is almost uniform agreement among medical practitioners that the use of diphtheria antitoxin has been the main factor in the reduction of the mortality of this disease.

But better sanitary administration throughout the State, resulting in more general application of the ordinances designed to prevent the spread of this affection, by securing isolation for the patient until the laboratory report gives evidence that the Klebs-Loefer bacilli has disappeared, has contributed to the restriction of the prevalence of the disease.

TABLE 17.—DEATHS FROM DIPHTHERIA IN THE CITIES OF OVER 5,000 POPULATION IN NEW JERSEY FOR TEN YEARS, 1879-1898.

NAME OF PLACE.	Population—Census 1880.	Years.										Total.
		1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	
Atlantic City.....	18,329	8	4	15	8	8	8	7	11	6	15	83
Bayonne.....	19,856	59	10	14	16	13	13	15	82	14	18	215
Bordentown.....	5,175	2	7	3	37	5	1	5	1	1	1	54
Bridgeton.....	12,325	2	6	40	10	2	3	1	6	12	9	75
Burlington.....	7,844	4	3	10	19	11	15	9	34	6	7	115
Camden City.....	23,467	22	76	192	150	89	97	84	60	95	49	916
Dover.....	43,894	40	40	51	18	47	44	23	49	5	24	366
Elizabeth.....	5,721											2
Englewood.....	6,325	11	13	5	5	4	4	7	3	1	1	60
Goncaester City.....	7,282											1
Hackensack.....	4,673	28	2	10	5	1	3	3	1	9	5	10
Harrison.....	14,423	162	126	97	70	77	56	38	103	43	45	93
Hoboken.....	152,712	223	241	293	261	221	272	187	239	229	158	2,424
Jersey City.....	7,823	4	9	5	2	4	4	2	2	2	2	49
Long Branch.....	10,463	9	17	27	2	2	7	5	9	2	3	94
Montclair.....	10,553											19
Morristown.....	10,993	20	5	5	5	5	5	5	5	5	5	74
Newark.....	215,900	343	314	196	5	919	275	173	256	230	177	2,400
New Brunswick.....	19,810	50	32	5	23	7	11	17	28	9	10	184
Orange.....	28,297	23	44	41	39	33	11	15	47	18	29	289
Passaic.....	17,894	25	30	32	33	14	13	14	29	33	9	213
Paterson.....	97,846	78	68	161	142	93	151	85	125	177	68	1,151
Perth Amboy.....	13,680	8	6	29	12	23	20	11	4	18	16	146
Plainfield.....	15,620	8	7	3	8	11	2	10	6	19	5	82
Plainfield.....	15,620	8	7	3	8	11	2	10	6	19	5	82
Rahway.....	7,945	11	4	1	6	9	1	3	5	1	2	34
Salem.....	6,837	13	1	1	1	1	1	1	1	1	1	62
South Amboy.....												28
Trenton.....	63,816	20	42	67	125	17	13	25	10	7	8	216
Total.....	929,484	1,214	1,248	1,369	1,223	1,104	973	1,070	1,244	1,017	687	11,219

**Typhoid Fever.**—This disease also has been attended with a mortality much lower than the average for several years past. The number of deaths from typhoid fever for the year ending June 30th, 1898, was 450. For the year 1897 the number of deaths was 478, and for the ten years 1888-1897 the average number of deaths from typhoid fever in New Jersey was 606, or 156 more than occurred during the last statistical year.

TABLE 18.—LIST OF SANITARY DISTRICTS IN NEW JERSEY IN WHICH DEATHS FROM TYPHOID FEVER OCCURRED DURING THE YEAR ENDING JUNE 30TH, 1898, WITH NUMBER OF DEATHS, SOURCE OF WATER SUPPLY AND NATURE OF DRAINAGE.

NAME OF DISTRICT.	Number of deaths from typhoid fever.	WATER-SUPPLY.	DRAINAGE.
Absecon.....	2	Domestic.	No sewers.
Acquackanonk township.....	1	"	"
Atlantic City.....	7	Public.	Sewers.
Bayonne.....	6	"	"
Belvidere.....	1	"	"
Bethlehem township.....	1	Domestic.	No sewers.
Boonton.....	1	Public.	Sewers.
Bordentown.....	5	"	"
Brick township.....	2	Domestic.	No sewers.
Bridgeton.....	8	Public.	"
Bridgewater township.....	3	Domestic.	"
Burlington.....	1	Public.	Sewers.
Camden city.....	23	"	"
Cape May city.....	1	"	"
Centre township.....	5	Domestic.	No sewers.
Chatham borough.....	1	Public.	"
Chester township (Burlington).....	1	Domestic.	"
Cinnaminson township.....	1	"	"
Delaware township.....	2	"	"
Deptford township.....	1	"	"
Dover city (Morris).....	3	Public.	"
Eagleswood township.....	2	Domestic.	"
East Brunswick township.....	1	"	"
East Greenwich township.....	1	"	"
East Orange township.....	1	Public.	Sewers.
Eaton township.....	1	Domestic.	No sewers.
Elizabeth.....	7	Public.	Sewers.
Elk township.....	1	Domestic.	No sewers.
Englewood city.....	2	Public.	Sewers.
Ewing township.....	1	Domestic.	No sewers.
Freehold.....	2	Public.	Sewers.
Florence township.....	1	Domestic.	No sewers.
Frankford township.....	1	"	"
Gloucester city.....	2	Public.	Sewers.
Gloucester township.....	3	Domestic.	No sewers.
Greenwich township (Warren).....	1	"	"
Haddon township.....	1	Public.	Sewers.
Hamilton township.....	3	Domestic.	No sewers.
Hammonton township.....	1	"	"
Hardyston township.....	1	"	"
Harrison city.....	5	Public.	Sewers.
Hillsboro township.....	1	Domestic.	No sewers.
Hoboken.....	7	Public.	Sewers.
Hohokus township.....	1	Domestic.	No sewers.
Hopewell borough (Mercer).....	4	"	"
Howell township.....	1	"	"
Jefferson township.....	1	"	"
Jersey City.....	79	Public.	Sewers.
Keary township.....	11	"	"
Landis township.....	5	Domestic.	No sewers.

TABLE 18.—LIST OF SANITARY DISTRICTS IN NEW JERSEY IN WHICH DEATHS FROM TYPHOID FEVER OCCURRED DURING THE YEAR ENDING JUNE 30TH, 1898, WITH NUMBER OF DEATHS, SOURCE OF WATER SUPPLY AND NATURE OF DRAINAGE.—CONT.

NAME OF DISTRICT.	Number of deaths from typhoid fever.	WATER-SUPPLY.	DRAINAGE.
Lebanon township.....	1	Domestic.	No sewers.
Little Egg Harbor township.....	1	"	"
Long Branch.....	1	Public.	Sewers.
Lopatcong township.....	1	Domestic.	No sewers.
Lower township.....	1	"	"
Lumberton township.....	1	"	"
Manchester township (Ocean).....	1	"	"
Manchester township (Passaic).....	2	"	"
Mannington township.....	1	"	"
Matawan.....	1	"	"
Medford township.....	2	"	"
Middletown township.....	5	"	"
Millville.....	5	Public.	Sewers.
Monroe township.....	1	Domestic.	No sewers.
Montclair.....	3	Public.	Sewers.
Morristown.....	7	"	No sewers.
Mount Laurel township.....	1	Domestic.	"
Neptune township.....	6	"	"
Newark.....	31	Public.	Sewers.
New Brunswick.....	6	"	"
Northampton township.....	1	Domestic.	"
North Bergen township.....	11	"	No sewers.
Oldmans township.....	1	"	"
Orange city.....	4	Public.	Sewers.
Orvil township.....	2	Domestic.	No sewers.
Oxford township.....	2	"	"
Palisade township.....	1	"	"
Passaic city.....	12	Public.	Sewers.
Paterson.....	38	"	"
Pemberton township.....	1	Public.	Sewers.
Pensauken township.....	2	Domestic.	No sewers.
Pegannock township.....	2	"	"
Perth Amboy.....	3	Public.	Sewers.
Phillipsburg.....	1	"	"
Pilesgrove township.....	3	Domestic.	No sewers.
Raritan township (Middlesex).....	2	"	"
Readington township.....	2	"	"
Riverside.....	1	"	"
Rockaway.....	1	"	"
Salem city.....	3	Public.	Sewers.
Shamong township.....	1	Domestic.	No sewers.
Shrewsbury township.....	5	"	"
South Amboy borough.....	1	Public.	Sewers.
South Brunswick township.....	1	Domestic.	No sewers.
South Harrison township.....	1	"	"
South Orange township.....	1	Public.	"
Springfield township.....	1	Domestic.	"
Summit township.....	4	Public.	Sewers.
Teaneck township.....	1	Domestic.	No sewers.

TABLE 18.—LIST OF SANITARY DISTRICTS IN NEW JERSEY IN WHICH DEATHS FROM TYPHOID FEVER OCCURRED DURING THE YEAR ENDING JUNE 30TH, 1898, WITH NUMBER OF DEATHS, SOURCE OF WATER-SUPPLY AND NATURE OF DRAINAGE—Cont.

NAME OF DISTRICT.	Number of deaths from typhoid fever.	WATER-SUPPLY.		DRAINAGE.	
		Public.	"	No sewers.	"
Town of Union.....	3	Public.	"	Sewers.	"
Trenton.....	22	"	"	"	"
Union township (Bergen).....	1	Domestic.	"	No sewers.	"
Union township (Hudson).....	1	Public.	"	"	"
Wall township.....	1	Domestic.	"	"	"
Wantage township.....	1	"	"	"	"
Washington township (Burlington).....	1	"	"	"	"
Washington township (Glooucester).....	1	"	"	"	"
Washington township (Mercer).....	1	"	"	"	"
Warren township.....	1	"	"	"	"
Waterford township.....	1	"	"	"	"
West Hoboken township.....	2	Public.	"	Sewers.	"
Woodbridge township.....	1	"	"	"	"

TABLE 19.—DEATHS FROM TYPHOID FEVER IN NEW JERSEY FOR EIGHTEEN YEARS, 1881-1898.

Years.....	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.
Deaths.....	874	884	554	540	643	545	522	620	724

Years.....	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Deaths.....	782	695	628	506	485	558	577	478	456

TABLE 20.—DEATHS FROM TYPHOID FEVER PER 10,000 INHABITANTS IN CITIES OF OVER 10,000 POPULATION, FOR YEAR ENDING JUNE 30TH, 1898.

Name of City.	Estimated population.	Number of deaths from typhoid fever.	Rate per 10,000.
Atlantic City.....	21,291	7	3.29
Bayonne.....	20,348	6	2.95
Bridgeton.....	14,311	8	5.59
Camden.....	66,557	23	3.45
Elizabeth.....	47,476	7	1.47
Hoboken.....	60,344	7	1.16
Jersey City.....	194,539	79	4.06
Millville.....	10,742	5	4.65
Morristown.....	11,568	7	6.05
Newark.....	236,191	31	1.31

Name of City.	Estimated population.	Number of deaths from typhoid fever.	Rate per 10,000.
New Brunswick.....	20,573	6	2.91
Orange.....	25,159	4	1.59
Passaic.....	20,813	12	5.76
Paterson.....	108,741	38	3.49
Perth Amboy.....	15,139	3	1.98
Plainfield.....	15,045	0	.....
Town of Union.....	14,950	3	2.00
Trenton.....	65,554	22	3.35

TABLE 21.—DEATHS FROM TYPHOID FEVER IN CITIES OF OVER 5,000 POPULATION IN NEW JERSEY, FOR YEARS 1889-1898.

NAME OF PLACE.	Population—Census 1888.	Years.									
		1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Atlantic City.....	18,329	5	6	4	4	9	16	19	8	4	7
Bayonne.....	19,866	4	7	1	1	7	11	4	5	6	8
Bordentown.....	5,776	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bridgeton.....	13,292	4	3	.....	.....	.....	.....	.....	.....	.....	.....
Burlington.....	4,244	4	.....	.....	.....	.....	.....	.....	.....	.....	.....
Camden City.....	65,467	90	82	33	38	38	42	64	32	33	23
Dover.....	43,524	3	19	6	11	8	4	14	8	1	3
Elizabeth.....	5,721	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Glooucester City.....	6,323	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hackensack.....	7,282	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Harrison.....	9,673	4	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hoboken.....	64,083	24	19	14	15	10	17	11	31	9	6
Jersey City.....	123,712	132	159	167	133	116	98	174	133	33	79
Long Branch.....	7,323	1	4	1	.....	.....	.....	.....	.....	.....	.....
Millville.....	10,455	4	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morristown.....	10,290	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morristown.....	10,290	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Newark.....	215,516	131	194	194	153	63	43	43	61	44	31
New Brunswick.....	19,910	6	10	.....	.....	.....	.....	.....	.....	.....	.....
Orange.....	21,792	7	14	9	6	6	11	5	6	3	4
Passaic.....	17,624	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Paterson.....	17,624	26	4	11	15	13	7	24	45	12	13
Paterson.....	17,624	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Perth Amboy.....	15,050	3	1	9	1	1	1	.....	12	7	3
Phillipsburg.....	9,681	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plainfield.....	15,629	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rahway.....	7,945	5	1	.....	.....	.....	.....	.....	.....	.....	.....
Salem.....	4,337	10	1	.....	.....	.....	.....	.....	.....	.....	.....
Town of Union.....	13,336	5	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trenton.....	63,518	29	11	15	15	19	16	11	16	25	23
Total.....	959,484	612	669	487	487	349	323	410	423	379	294

\* Record begins in 1897.

† Record begins in 1896.

Following is a report of the investigation and action taken concerning an outbreak of typhoid fever in Sussex county:

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

GENTLEMEN—An outbreak of typhoid fever in the city of Paterson, beginning about the middle of November, 1897, caused inquiry to be made by the local board of health, and it was found that a large number of the persons affected by the disease were supplied with milk from the creamery of F. W. Fulboom, in Branchville, Sussex county, N. J., and it was learned that two of the sons of the manager of the creamery were ill.

The State board of health received notice of these facts November 30th, and an investigation was begun on the morning of December 1st. It was found that milk from fifty-three neighboring farms was received daily at the creamery.

This milk was purchased by Mr. F. W. Fulboam and was shipped by him to dealers in New York, Jersey City, Newark, Paterson, Morristown, Montclair, Dover, East Orange and Arlington.

The milk was received at the creamery from 6 to 8 o'clock A. M., and was transferred from the receptacles owned by the various farmers to cans owned by Fulboam, and these cans (Fulboam's) were then placed in cooling tanks and allowed to remain until the arrival of the milk-train, at 6.15 P. M. None of the cans owned by the farmers were washed on the creamery premises. The three cooling-tanks or vats were about 8 feet by 12 feet and about 30 inches in depth, and the water contained in them rose to within three or four inches of the tops of the forty-quart milk-cans.

The water-supply of the creamery was obtained from two sources, viz., (1) from Paulins brook, upon the banks of which the creamery stands, and (2) from a spring located beneath the cheese-house on the creamery premises.

Paulins brook, at the point opposite the creamery, is about ten feet in width and six or seven inches in depth.

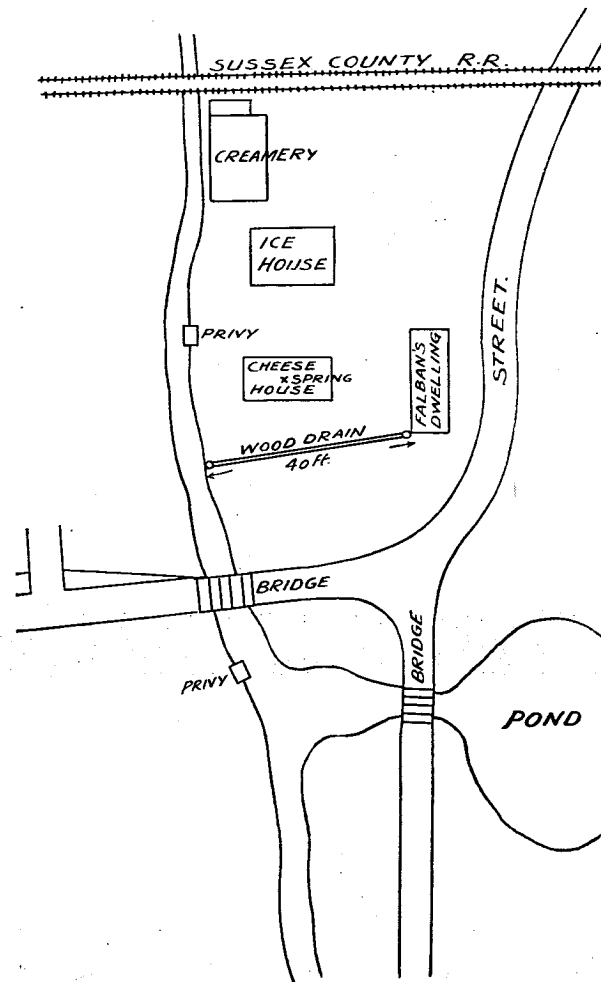
The waters of the brook are grossly contaminated by direct discharges from several privies and by waste fluids from a hotel and several dwellings. The privy used by the Fulboam family, and into which the discharges from the sick boys were cast, was so placed that all droppings fell into the water of this brook.

The spring above referred to was originally surrounded by marshy ground, but the wet land was filled-in a few years ago, and at present the surface of the soil in the vicinity of the spring is firm and solid. Across this filled-in ground, on the up-stream side of the spring, a wooden drain extends from the dwelling-house to the before-mentioned brook.

This box-drain has been in use for several years, and although it receives all of the waste fluids from the kitchen sink, none of these liquids flowed from the box at its termination at the brook at the time the inspection was made, and there were no signs of recent discharge of house-sewage at that point.

The filthy fluids therefore escaped from the wooden drain somewhere between the house and the brook, and reference to the accompanying diagram will show that the point of discharge could not have been more than twenty feet from the spring.

The following diagram shows the location of the various buildings on the creamery premises:





The dwelling on the creamery premises is occupied wholly by the Fulboam family, as follows: Mr. Fulboam, Mrs. Fulboam and the three sons, George, aged 20, William, aged 17, and Otto, aged 15. All of the employees in and about the creamery and cheese-house reside in houses at points quite distant from the Fulboam dwelling, and none of these persons had any communication with the sick boys, nor was there any sickness among these employes, nor among the members of the families with whom they dwell.

Early in October, 1897, Mr. Fulboam, his wife and the sons William and Otto, all went to New York and remained there about two weeks. It was learned that George Fulboam, the oldest son, had been living in New York for about one year and that he was employed there as driver of a milk wagon.

He complained of feeling unwell while he was attending to his work as usual, and it now seems probable that he was suffering from mild typhoid fever as early as October 20th. George went home to Branchville sick October 29th, remained there until November 3d, and then returned to New York, although he was still ill. Trying to do his work, he struggled on until November 29th, when he again went to his home in Branchville and remained there sick in bed for about twenty days. The second son, William, was regularly employed in the creamery, and his duty was to wash the cans. This operation is performed in a wash-tray by the use of a long, stiff brush, which is rotated rapidly by machinery. The water in the wash-tray is kept boiling hot by the liberation of steam from a perforated pipe. This son (William) became ill about November 14th, but he was not visited by the family physician, Dr. John Hedges, until November 28th.

The third son (Otto) was also ill on November 28th, and both of these boys were then believed to be suffering from malarial fever. Otto did not at any time have any duties in the creamery. Dr. A. C. Hunt, acting for the State board of health, caused the removal of the water-supply pipes from the brock December 1st, and then proceeded to investigate the nature of the illness from which the three sons of Mr. Fulboam were found to be suffering.

He requested Dr. J. L. Leal, of Paterson, to assist in making the diagnosis, and on December 2d the patients were visited by Drs. Leal and Hunt, together with Dr. Hedges, the attending physician. The unanimous conclusion of these physicians was that two of the boys, William and Otto, were afflicted with typhoid fever.

On December 3d Dr. Hedges stated that hemorrhage of the bowels had occurred during the previous night in the cases of both William and Otto. The order of the State board of health prohibiting the sale and transportation of milk which had been received, kept or stored on the creamery premises was served upon Mr. Fulboam December 3d.

No more milk was sent out from the creamery, but the farmers who had been delivering milk to Fulboam were allowed to deposit their milk in their own cans upon the platform of the railroad station and ship it direct to dealers. All communication between the Fulboam dwelling and the creamery was cut off. All of the cans and utensils were scrubbed in boiling water and the cans were afterward steamed by discharging steam under pressure into the cans by means of a perforated iron pipe attached to a rubber hose. The cooling tanks were scrubbed with hot water and brushes and the whole creamery was cleaned.

Mr. Fulboam was then informed that the prohibition of the sale of milk from the creamery would be removed as soon as he should supply water for use on his premises from a source of unquestioned purity. He proceeded to lay a 3-inch pipe to a spring about 330 feet distant, the water of which was believed to be uncontaminated, and the prohibition was withdrawn December 9th, 1897.

Samples of water were taken December 10th by Dr. R. H. Connolly, of Newark, and on December 22d Dr. Connolly announced that he had differentiated typhoid bacilli from the other organisms present in the water taken from the cooling-tank.

A second order prohibiting the sale of milk from the said creamery was at once issued (December 23d), and the old tank was torn out and new ones constructed, the work being carried on night and day until completed, when the creamery was again allowed to resume business (December 24th). Following is a list of the farmers who supplied milk to the Fulboam creamery:

J. C. Hunt, F. M. Pellett, J. E. Bowman, H. Dairymple, C. Snook, W. T. Linsley, I. D. Williams, I. Merring, E. Merring, J. H. Williams, H. B. Westbrook, Westbrook & Price, P. H. Beemer, J. Rutan, D. B. Struble, Frank Dairymple, D. Ayers, J. I. Barber, P. Bell, S. L. Preston, Wm. McDonalds, C. Kayes, H. Bale, A. D. Everett, M. A. Crane, H. Campbell, I. McDonald, L. Struble, J. Sherred, A. E. Snover, J. J. Struble, A. R. Snook, O. S. Morris, P. Wyker, O. Struble, Shay & Huff, J. L. Van Horn, J. P. Perry, H. Phillips, Geo. Phillips, B. Dairymple, J. H. Ayers, Joel Gunn, J. E. Dickerson, D. Wyker, L. Ayers, F. B. Kymer, H. Ayers, S. Ayers, P. A. Smith, Alter Smith.

Following is a list of the places in New Jersey to which milk from the Fulboam creamery was distributed, together with the number of cases of typhoid fever occurring in each place during the months of November and December, 1897:

NAME OF PLACE.	Nov. 6	Nov. 17	Nov. 20	Nov. 27	Dec. 4	Dec. 11	Dec. 18	Dec. 26	Jan. 1
Paterson.....	0	4	5	8	52	41	21	9	8
Newark.....	2	4	3	3	2	6	7	1	1
Montclair.....	0	0	0	1	1	1	0	0	0
East Orange.....	0	0	0	0	0	2	0	0	0
Dover.....	0	0	0	0	0	3	0	0	0
Jersey City.....	...	2	2	5	22	14	5	4	...
Kearney.....									
									Total for two months. 30 cases.

Table showing total number of cases of typhoid fever reported during November and December, 1897, from localities in New Jersey supplied with milk from the Fulboam creamery, and also showing the number of the affected persons who used said milk:

NAMES OF PLACES IN NEW JERSEY TO WHICH THE FULBOAM MILK WAS SHIPPED.	NUMBER OF CASES OF TYPHOID FEVER OCCURRING FROM NOVEMBER 1ST TO DECEMBER 31ST, 1897.	NUMBER OF CASES USING THE FULBOAM MILK.
Paterson.....	148	73
Newark.....	29	2
Montclair.....	3	...
East Orange.....	2	...
Dover.....	3	...
Morristown.....	2	...
Jersey City.....	54	27
Kearny.....	30	26

## CONCLUSIONS.

1. The water of Paulin's brook is polluted.
2. The water of the spring beneath the cheese house, on the Fulboam premises, is probably receiving more or less of the liquids from the leaky wooden drain which conveys sink water from the Fulboam dwelling.
3. The boy William was suffering from typhoid fever while he was still washing cans in the creamery.
4. The disease may have been brought to the creamery by William, or it may have been introduced there by water obtained from the polluted brook or from the polluted spring.

Very respectfully,

HENRY MITCHELL,

Secretary.

**Scarlet Fever.**—The deaths from scarlet fever have been gradually diminishing for several years, and the case mortality of this affection is notably smaller than it has averaged during the past decade. It is a mild affection compared with its character twenty five years ago, and the sequels attending its occurrence are far less frequent than formerly. In 1892 a very widespread and fatal outbreak of the disease occurred, but during the last six years the severity of the affection has been much modified.

TABLE 22.—COMPARATIVE MORTALITY IN NEW JERSEY FOR THE TWENTY YEARS ENDING JUNE 30TH, 1898.

*YEAR.	Population.	Total deaths.	Rate per 1,000 Pop.	Typhoid Fever.		Diphtheria.		Scarlet Fever.	
				No. of deaths.	No. of deaths per 1,000 population.	No. of deaths.	No. of deaths per 1,000 population.	No. of deaths.	No. of deaths per 1,000 population.
1879..	1,102,584	20,440	18.07	324	3.17	1,100	10.86	627	6.14
1880..	1,130,892	18,967	16.77	373	3.29	873	7.71	573	5.06
1881..	1,131,117	20,810	18.39	574	4.94	1,128	9.72	499	4.30
1882..	"	25,910	22.90	884	7.43	1,472	12.37	1,306	10.09
1883..	"	23,310	20.60	564	4.66	1,146	9.47	853	7.05
1884..	"	21,716	19.20	640	5.12	1,027	8.21	547	4.38
1885..	1,278,038	23,807	18.63	642	5.02	1,496	11.70	646	5.06
1886..	"	22,734	17.80	545	4.15	1,303	9.94	222	1.69
1887..	"	24,331	19.04	522	3.88	1,527	11.37	255	1.89
1888..	"	27,173	17.01	620	4.50	2,036	14.80	574	4.17
1889..	1,397,647	26,543	18.99	724	5.14	1,574	11.18	533	3.78
1890..	1,441,017	28,530	19.80	782	5.42	1,575	10.92	209	1.45
1891..	1,478,784	28,840	19.50	695	4.69	1,737	11.74	238	1.94
1892..	1,511,653	32,685	21.62	628	4.15	1,776	11.74	1,008	6.66
1893..	1,538,799	30,596	19.88	506	3.28	1,677	10.89	445	2.89
1894..	1,578,373	30,004	19.09	485	3.07	1,294	8.19	272	1.72
1895..	1,672,942	30,634	18.31	568	3.39	1,464	8.75	264	1.57
1896..	1,718,543	30,767	17.90	577	3.35	1,753	10.22	183	1.06
1897..	1,764,144	29,822	16.90	478	2.70	1,382	7.83	203	1.15
1898..	1,810,003	27,337	15.11	450	2.48	950	5.24	201	1.11

Average annual increase in population 1878 to 1898, 36,185.

\* Census years are in heavy-faced type.

† Population estimated, except for census years.

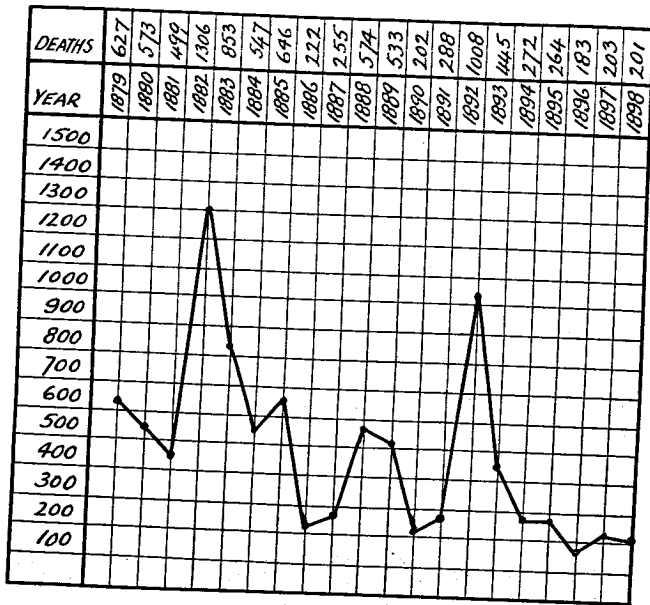
‡ 1875.

|| Estimated.

TABLE 23.—DEATH-RATES PER 10,000 POPULATION FROM SCARLET FEVER FOR FIVE-YEAR PERIODS, 1878-1898.

FIVE-YEAR PERIODS.		Deaths.	Average death-rate.
June 30, 1878,	} to	3,858	6.52
June 30, 1883,			
June 30, 1883,	} to	2,244	3.43
June 30, 1888,			
June 30, 1888,	} to	2,483	3.34
June 30, 1893,			
June 30, 1893,	} to	1,123	1.32
June 30, 1898,			

CHART SHOWING DEATHS FROM SCARLET FEVER IN NEW JERSEY FOR TWENTY YEARS, 1879-1898.



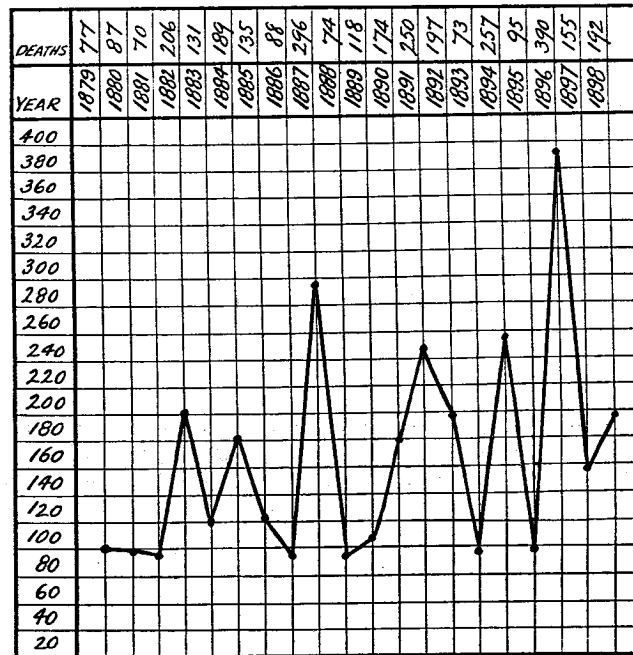
Measles did not appear as a widespread epidemic during the past year, but it is reasonable to expect that such an occurrence will again take place soon. The following table shows the course of this disease during the past twenty years, and no method for preventing its periodical outbreak has yet been successfully employed. Apparently it re-appears in every community as often as a new group of susceptible individuals is added to the population.

TABLE 24.—DEATHS FROM MEASLES IN NEW JERSEY FOR TWENTY YEARS, 1878-1898.

Year.....	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Number of deaths from measles.....	77	87	70	306	131	189	155	88	286	74										

Year.....	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Number of deaths from measles.....	118	174	250	197	73	257	95	390	156	195

CHART SHOWING DEATHS IN NEW JERSEY FROM MEASLES FOR TWENTY YEARS, 1879-1898.



Whooping Cough caused 155 deaths. This number is 166 less than for 1897, and 74 less than the average for the past twenty years. The fluctuations in the prevalence of this disease have continued with but little irregularity, as the subjoined table shows, but the sudden decrease of 48 per cent. during the year just ended is somewhat unusual.

TABLE 26.—DEATHS FROM WHOOPING COUGH FOR THE TWENTY YEARS ENDING JUNE 30TH, 1898

Year.....	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	.....
Number of deaths.....	277	130	119	263	169	116	181	274	181	161	.....

Year.....	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	Total.
Number of deaths.....	278	271	299	163	227	228	273	275	321	155	4,566

**Malarial Fever** caused but 82 deaths, which is a smaller number than has occurred from this disease during any of the years for which records are available.

TABLE 27.—DEATHS FROM MALARIAL FEVER FOR TWENTY YEARS, 1879-1898.

Years.....	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.
Deaths.....	288	293	481	379	290	230	209	243	217	264

Years.....	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Deaths.....	203	195	160	198	148	162	144	119	133	83

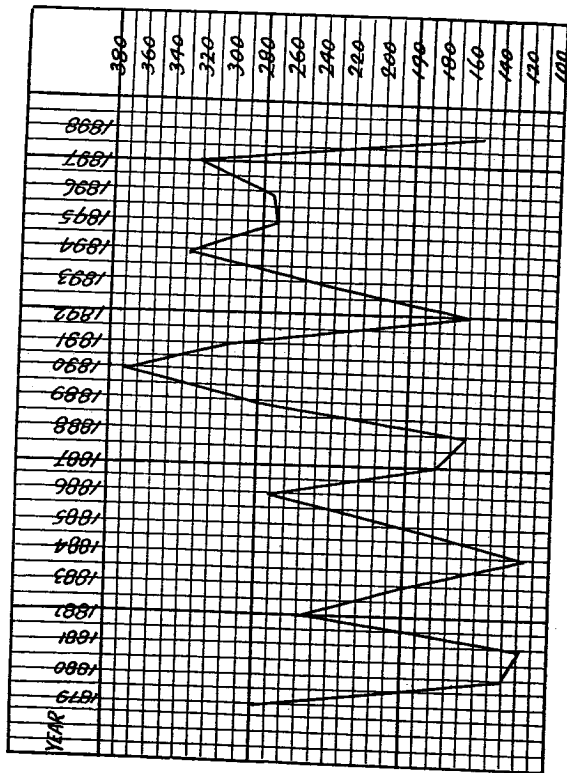
**Small-pox.**—By good fortune another year has passed without a death from this disease in New Jersey, but the epidemic prevalence of small-pox in several of the Southern States during the past summer, and the large number of unvaccinated children in nearly all of our sanitary districts who are liable to its attacks, has rendered the outlook ominous, and it will not be surprising to find at any time that the disease has obtained a foothold in one or more communities. The attention of the public has often been called to this danger, but the number of unvaccinated children increases from year to year.

To boards of education the legislature has given authority to require that evidence of successful vaccination shall be furnished as a prerequisite for admission to the public schools. Section 22 of Chapter 68 of the laws of 1887 reads as follows:

“That any board of education, school trustees or other body having control of the public schools may, on account of the prevalence of any contagious disease, or to prevent the spread of such contagious disease, prohibit the attendance of any teacher or scholar upon any school under their control, and may specify the time during which such teacher or scholar shall remain away from such school, and may prohibit the attendance of any unvaccinated child who has not had the small pox, and shall also have the power to decide how far re-vaccination shall be required if a case or cases of small-pox have occurred in the city or district.”

The work of local boards of health in preventing the spread of this disease is limited to the following procedures:

CHART SHOWING DEATHS FROM WHOOPING COUGH FOR TWENTY YEARS, 1879-1898.



1. Offer free vaccination at all times to persons who cannot afford to pay for the service.
2. Instantly, upon notice of a case of small-pox or varioloid, isolate the patient.
3. Vaccinate every person who has been exposed to the infection.
4. Purify infected chattels and premises.
5. Investigate the nature of every case of supposed chicken-pox.
6. Notify State board of health by telegraph.

If school boards would require that no pupil or teacher shall be admitted to the privileges of the public schools without having been successfully vaccinated within five years, and require that re-vaccination shall be performed at the expiration of the protective period, and if health boards would, at least once in every year, give public notice, by advertisement, that vaccination will be performed, free of charge, to all who cannot afford to pay their own physician for the operation, an enormous number of persons would quickly pass from danger to safety so far as small-pox is concerned. The neglect which has in recent years prevailed in regard to vaccination has gradually placed the inhabitants of New Jersey in great jeopardy from this disease. Shall this inattention continue until a devastating epidemic sweeps through the State?

TABLE 28.—UNVACCINATED CHILDREN OF SCHOOL AGE IN NEW JERSEY, BY COUNTIES, FOR THE YEARS 1896, 1897, 1898.

COUNTY.	1896.		1897.		1898.	
	Number Enrolled.	Unvaccinated.	Number Enrolled.	Unvaccinated.	Number Enrolled.	Unvaccinated.
Atlantic.....	7,855	2,663	8 870	2,337	9 252	2,859
Bergen.....	15,985	2,383	16,951	2 671	18 028	3,123
Burlington.....	14,450	6,425	14 457	5,935	13 864	5 315
Camden.....	24,493	6,616	24,890	6,145	25 016	6,947
Cape May.....	3,157	1,696	3,232	1,906	3,148	1,755
Cumberland.....	12,394	7,987	12,766	8,347	12 620	8 598
Essex.....	78 601	4,402	82,403	6,680	85 413	5,918
Gloucester.....	7,901	3,685	7,978	3,937	7 841	3 794
Hudson.....	102,706	9,463	109,805	9,615	*116 904	*9,767
Hunterdon.....	8 067	3,312	8 056	3,262	8 069	3,758
Mercer.....	20 949	4,439	21 018	4,733	21 366	5,617
Middlesex.....	16,815	4,239	17 649	5,016	17,937	5,372
Monmouth.....	19 603	5,234	19 983	7,001	19 824	7,309
Morris.....	14,550	6,937	14 988	7,174	15 208	7,320
Ocean.....	4 938	3,252	5 045	3,518	5 033	3,422
Passaic.....	36 253	5,512	37,739	6,737	40 480	7,961
Salem.....	6,567	3 040	6 533	2,764	6,522	3,242
Somerset.....	7,283	1,171	7 566	984	7,607	1,316
Sussex.....	5,792	3,779	5 831	3,907	5,742	4,033
Union.....	20,929	2 609	21 623	3,010	22,120	3,065
Warren.....	9,681	5,637	9,509	6,113	9,523	6,388
Total.....	438,969	94,481	456,862	102,292	*471 517	*106,879

Of the total number of the children of the State of school age there were 94,481, or 21 per cent., unvaccinated in 1896; 102,292, or 22 per cent., unvaccinated in 1897, and \*9,767, or \*22.67 per cent., unvaccinated in 1898.

It will be seen by reference to the following extract from the act above referred to (section 23 of chapter 68, laws of 1887) that the authorities of the public schools have ample authority to learn the vaccinal status of every school child, and they have also authority to provide vaccination at the expense of the public treasury to every person who is unable to pay for the protection which this operation affords.

\* The official report of the school census of Hudson county had not been received when this volume went to press, and therefore the figures for that county are estimated on the basis of the increase from 1896 to 1897.

"23. That the enrollment of the children by the clerk of the school districts in the townships of this state, or by other proper officers in the cities or municipalities, inquiry shall be made as to how many of the children within the school age are unvaccinated, and the same shall be designated by a mark on the said roll, and in case any are found to be unvaccinated, whose parents desire them to be protected from small-pox, and who, in the judgment of the board of education or the trustees of the school districts, are unable to pay therefor, the clerk of said district, or other authorized person, may give to the said child or children a permit to appear at the office of any regularly licensed physician in said district or municipality to be vaccinated, and such physician, on presentation of said permit, with his certificate appended thereto that the said vaccination has been by him successfully performed, shall be entitled to receive from the said township or local municipal authority the sum of fifty cents for each case so certified, and the same shall be paid in the same manner that other bills for current expenses are paid therein."

**Cancer.**—It will be seen by reference to the following table that the mortality from cancer is slowly increasing. In 1879 the number of deaths from this disease per 10,000 persons living was 3.70, and the increase has been almost continuous, year by year, until at present the rate per 10,000 of the population is 4.70.

TABLE 29.—DEATHS AND DEATH-RATES FROM CANCER PER 10,000 LIVING, FOR THE TWENTY YEARS ENDING JUNE 30TH, 1898.

YEAR.	Deaths.	Death-rate per 10,000 living.	YEAR.	Deaths.	Death-rate per 10,000 living.
1879.....	378	3.70	1889.....	579	4.11
1880.....	425	3.75	1890.....	640	4.44
1881.....	451	3.88	1891.....	642	4.34
1882.....	402	3.37	1892.....	688	4.55
1883.....	461	3.81	1893.....	723	4.69
1884.....	484	3.87	1894.....	731	4.63
1885.....	498	3.89	1895.....	770	4.60
1886.....	546	4.15	1896.....	811	4.71
1887.....	574	4.21	1897.....	857	4.83
1888.....	612	4.45	1898.....	852	4.70

**Notification of Communicable Diseases.**—This duty has been more generally performed by physicians than during the previous year, but in several sanitary districts the requirements of the law are not yet observed. The act approved March 22d, 1895, provides (section 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 diseases 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; and every house-owner or householder who knows that any person living, dwelling or being in any building under his control is affected by any of the contagious, infectious or communicable diseases hereinabove specified or referred to shall, when no physician has professionally attended such sick person, within twelve hours after discovering the same, report the fact in writing to the same person and in the same manner as any physician attending such sick person would be required to do as hereinabove set forth; and on the thirtieth day of June and the thirty-first day of December in each and every year every physician, house-owner and householder making any report or reports as in this section required, shall be entitled to receive from the officer to whom such report or reports shall have been made during the preceding six months, a certificate in writing under the hand of such officer, setting forth the number of names of persons reported to have been affected with any of the diseases hereinabove specifically named or referred to, which certificate, when presented by such physician, house-owner or householder to the proper disbursing officer of the city, borough, town or other local municipal government or township within which such affected person may have been, shall entitle such physician, house-owner or householder to receive from such disbursing officer the sum of ten cents for each and every name by such certificate 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."

Section 2 requires 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 officers 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."

The act approved March 23d, 1898, provides that the penalty for refusing or neglecting to report cases of communicable diseases in accordance with the requirements of the act above quoted may be sued for either by the local board of health or by the State board.

TABLE 30.—COMMUNICABLE DISEASES REPORTED FOR EACH QUARTER DURING THE YEAR ENDING JUNE 30TH, 1898.

NAME OF SANITARY DISTRICT.	DIPHThERIA.				SCARLET FEVER.				TYPHOID FEVER.				SMALL-POX.			
	1.	2.	3.	4.	1.	2.	3.	4.	1.	2.	3.	4.	1.	2.	3.	4.
	Akers Park .....															
Albany Park .....	38	38	36	1	2	1	1	11	1	10	7	1				
Alyce .....		16	6	1	8	7	14	11								
Belleville Township .....					1	1	1		1							
Belmar Borough .....	2	1														
Bordertown Township .....					2											
Branchburg Township .....											7					
Bridgeton .....					6	8	2	1								
Bridgewater Township .....	1	1														
Caldwell Borough .....		1					18	20			2					
Carlstadt Borough .....																
Collingswood Borough .....					1										1	
Delaware Township .....																
Deiford Borough .....		1	1													
Deptford Township .....			1	1	2	1										
Dover .....	4	1					21				5	1				
East Brunswick Township .....			13	3							3	3				
East Orange Township .....			9	6				14				6				
Easton Township .....	54	74	26		22	78	47			4	9	2				
Elizabeth .....																
Fanwood Borough .....																
Franklin Township (S.) .....											3				1	
Freehold Borough .....	14	11		7				3								
Freehold Township .....												1				
Glassboro Township .....																1
Glen Ridge Borough .....																
Hackensack .....	11	22		5	7		5	6	4							
Haddonfield Borough .....	2	2	7								2	1				
Hammononton Borough .....																
Hammononton Township .....																
Harrison Township .....																
Hillsboro Township .....	47	33	77	55	23	34	61	51		8	21	7	1			
Hoboken .....	114	136	162	146	108	147	256	221		7	40	79	11			
Jersey City .....																
Kearsey Township .....																
Lambertville .....				4												
Lawrence Township (M.) .....																
Little Ferry Borough .....																
Lower Township .....																
Lower Penn's Neck Township .....																
Mansfield Borough .....																
Mansfield Township (B.) .....																
Maywood Borough .....																
Middle Township .....																
Millstone Township .....		23	6	4			3	4	1		5	4	1			
Montclair .....	2															
Moorestown Borough .....		10														
Morristown .....																
Mount Olive Township .....																
Neptune Township .....																
Neptune Township .....	2	2	5													
Newark .....	123	241	249	183	232	161	157	118		28	47	20	11			
New Providence Township .....																
Northampton Township .....																
Morris Plains Borough .....																
Ocean Grove .....																
Orange .....	11	20														
Palmyra Township .....																
Passaic .....																
Paterson .....	23	123														
Perth Amboy .....	8	8	22	12	15	8	10	3								
Plainfield .....	3	8	14	6	14	9	9	9		6	1	6				
Reading Township .....																
Riverton Borough .....																
Rockaway Township .....																
Roselle Borough .....																
Rutherford Borough .....																
Salem City .....		63	26													
Somerville .....																
South Orange Township .....																
South Orange Village .....																
Stockton Township .....	5	9	3	5												
Trenton .....	31	36	23	25	20	27	51	24		32	17	54	23			
Union Township (H.) .....																
Union Township (L.) .....																
Vineland Borough .....																
Wall Township .....																
Washington Township (G.) .....																
Washington (W.) .....																
Wenonah Borough .....																
West Deptford Township .....																
Westfield Township .....																
West Orange Township .....																
Wilbur Borough .....																
Woodbury .....																
Woodridge Borough .....																
Totals by quarters .....	697	1079	773	519	568	717	763	499		167	354	196	69			
Totals per year .....				2947				2337				776		8	3	1

**The Medical Inspection of Schools** has attracted some attention in New Jersey during the past year, but a more general movement among boards of education toward the adoption of a systematic method of inquiry into the health and strength of pupils in public schools is exceedingly desirable. The final establishment of an innovation of this nature will doubtless require considerable time, and experimental trials must first be made before the details of the work can be satisfactorily adjusted. The progress made in this work in the cities of Boston and New York and the beneficial results already attained afford encouragement to every person charged with the responsibility of guarding and protecting the children who are admitted to school buildings and grounds.

The following suggestions for inaugurating medical and sanitary supervision of pupils and school premises have been offered :

1. That the board of education in each municipality and township shall employ a physician in the same manner that teachers are employed and assign to him certain duties.
2. That the medical officer shall visit each school to which he is assigned once every school-day and examine every pupil who may be referred to him by any teacher.
3. That he shall at least once during every school year examine every pupil to learn whether any physical or mental defects exist, a record being kept from year to year of each pupil's growth and development.
4. The medical officer is also to lecture, at stated intervals, to the teachers, advising them concerning the methods employed to detect the first signs of the appearance of communicable diseases, and presenting the recognized measures for the promotion of health and the prevention of disease.

Following is an outline of thirteen lectures for the instruction of teachers in the public schools :

1. Introductory.
  - a. The State, by statute, requires school attendance.
  - b. The health of the child should have first consideration.
  - c. Communicable diseases prevail less during vacations.
  - d. Parents frequently fail to detect illness.
  - e. The teacher, by early observation of the illness, may prevent an outbreak of disease and also save the life of the first case.
  - f. Infection is constantly brought into the schools.
  - g. Cleanliness in and about school buildings is the best defence against infection of the premises.

2. The relation of teachers to hygiene.
  - a. Teacher has best opportunity to observe the first symptoms of illness in the pupil.
  - b. The teacher detects, the medical officer confirms.
  - c. Children who are unclean should be sent home for bath and clean garments.
  - d. Child-study should be undertaken in the case of each pupil.
3. The public schools should not be closed.
  - a. School buildings, books and furniture should be made aseptic by daily cleansing.
  - b. The sick should be excluded, and infected articles and apartments should be purified.
4. A record of the physical progress of each pupil should be kept.
  - a. Date, name, age, description.
  - b. Hearing.
  - c. Vision.
  - d. Measurements.
  - e. Breathing.
  - f. Mental alertness.
5. Measles.
6. Whooping cough.
7. Mumps.
8. Chicken-pox.
9. Scarlet fever.
10. Rotheln.
11. Parasites.
12. Eye diseases.
13. Skin diseases.

Under the proposed system the medical officer does not supply remedies, but he notifies the parent or guardian whenever he discovers any physical defect or illness in the child, and he also takes measures to secure isolation if the disease belongs to the dangerous communicable group.

**Nuisances.**—Complaints signed by sixty-eight persons, mostly residents of New York, Hoboken and other points remote from the site of the conditions complained of, relating to the pollution of the air and of the waters of Staten Island Sound in the vicinity of Carteret, was presented to the State board of health July 5th, 1898. Following is the petition :

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

GENTLEMEN—We, the undersigned, bring to your notice the fact that an intolerable nuisance exists at present on the shore of that part of Staten Island Sound known as the Arthur Kill. This nuisance has caused fish and crustacea



taken from that part of the sound to be so highly tainted that in many cases people who have eaten of them have been made seriously ill and have suffered from all the symptoms of poison.

The nuisance is created by the Liebig Manufacturing Company, a concern which operates on the shore in Carteret, New Jersey, works which use phosphates, the refuse of which is allowed to run into the waters. Air and water are tainted by this illegal practice to the great injury to health, comfort and property-value of all the surrounding communities.

As the practice of throwing noxious substances of any kind into the navigable waterways of the State is forbidden by law, we, the undersigned, respectfully petition that you cause such action on the part of the officers charged with such duty as will cause this nuisance to cease at once.

We are determined to see that it is abated, and are assured that you will see that the law is enforced.

Following is a report by Dr. A. C. Hunt of an inquiry into the conditions referred to in the complaint :

The establishment which is complained of as maintaining a nuisance is known as the Liebig Manufacturing Company, and is a branch of the Standard Oil Company. The factory is located at Carteret, in Woodbridge township, on that part of Staten Island sound known as Arthur Kill. The factory produces a chemical fertilizer. This fertilizer is manufactured by the combination of an acid which is a by-product obtained in the refining of crude petroleum oil, with a base consisting of ground phosphate rock. In the process of combining the acid with the rock gases are evolved, which have given rise to the complaints of the petitioners.

The process of manufacture is as follows: The ground phosphate rock and what may be called sludge acid are mixed in tight wooden tanks and then packed in large wooden apartments below. This work is conducted on the upper floor, and the material, after the chemical action has taken place, is stored as stated until the action ceases. It is then taken out, dried and re-ground, and after being mixed with various chemical materials, such as dried blood and ammonia, is sold in the market for agricultural purposes. The odors which arise while the chemical process is taking place cannot be accurately described, but are of an intensely acid character, and if one is near the mixing tanks and the fumes are allowed to escape it will cause an intense irritation of the eyes and throat. The factory has been in operation some eight years, and during this time the company has been making strenuous efforts to overcome as far as possible the odors discharged from the stack which is connected with the mixing tanks, and which carries the gases into the air. A number of plans have been tried, but within a year a system of water-jets has been adopted, which, in combination with an exhaust fan, has given the best results thus far obtained. This system was examined and it was found that the gases were passed through four jets of water, and that the amount of gas escaping from the stack was scarcely noticeable. The water through which the gas has been passed flows into the sound, and it has a slightly acid taste. No chemical analysis has been made of the water, and its effects upon the stream cannot, therefore, be stated. There has been no complaint made to

the local board of health of Woodbridge township concerning this factory, and the president of the board of health of that township, who was with me at the time of the inspection, stated that the only time he had ever heard of a complaint was several years ago, when individual legal action was brought against the company in the courts. He also stated that he had never known of a case of sickness being traced to the factory. Dr. Spencer, who attends a number of the operatives in the factory and also a number of persons residing in Carteret, stated that although at times the odors are unpleasant, yet he has never been able to trace any sickness resulting from them. He also stated that under certain atmospheric conditions odors were more noticeable than at other times, and that as the prevailing winds were from the west, persons living on Staten Island would be more liable to observe the odors than those living in Woodbridge township. Dr. Holmes, of Rahway, and Dr. Randolph, of Rahway, who also attend persons in Carteret, endorsed the statement of Dr. Spencer. A communication was received from Mr. Wilson Waring, superintendent of the factory, which gives, somewhat in detail, the company's side of the case. It is stated by those who have examined the petition, and who personally know many of the parties who have attached their signatures to the same, that not a name of a single resident of Carteret or Woodbridge township can be found on the list. I could get no history of ill effects upon the health either of the operatives or those living in the immediate vicinity. The waters of the tidal stream into which waste liquids from the factory are discharged, are not used for potable purposes by any municipality.

The complaint in this case and the report of the inspection of the premises were referred to Corbin & Corbin, of Jersey City, for a legal opinion concerning the relation of health boards to conditions similar to those described in the foregoing report, and the following letter states their views :

JERSEY CITY, August 1st, 1898.

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

DEAR SIR—I have examined the complaints as to the nuisance at Carteret and also the report of the inspector.

For such a nuisance any one whose property is injured can bring suit at law for damages or procure an injunction from the Court of Chancery. Persons who are not injured in their property but are annoyed by the nuisance can apply to the Grand Jury for an indictment. This is the simplest and most efficient remedy. It covers not only nuisances injurious to health but other nuisances.

There remains a remedy through the action of the State board of health under the act of 1894. To enforce this remedy, it is necessary to establish to the satisfaction of the Chancellor not merely that there is a nuisance and the noisome smells, but that the nuisance is to a substantial extent injurious to the public health. The witnesses to establish such injury are usually the physicians attending sick people in the vicinity and citizens living near by who claim to have been made ill by the nuisance. From the report of the inspector, it appears that three physicians in the vicinity have been consulted, but that

none of them is prepared to prove any case of illness arising from the fertilizer factory at Carteret, and no citizens are named who claim to have suffered in health.

It is useless to undertake to file a bill in Chancery for the State board of health unless decisive proof on this point can be introduced by witnesses who can be named and whose testimony can be obtained. The injury to fish which is said to make them unfit for food is too remote in its influence on public health to confer jurisdiction on your board.

On the facts and evidence as now presented, I am of opinion that the board would not be warranted in bringing a suit in Chancery, and that the ordinary remedies of indictment are more appropriate to the case.

Yours very truly,

CHARLES L. CORBIN.

**Sanitary Survey of Camp Voorhees.**—By request of Governor Foster M. Voorhees an inspection of the military camp and adjoining lands situate at Sea Girt, Monmouth county, was made August 4th and 5th, 1898, and the following report was presented to the State board of health:

TRENTON, N. J., August 6th, 1898.

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

**GENTLEMEN**—Following is a report of a sanitary survey of the State military reservation, and adjoining lands, at Sea Girt:

**LOCATION.**—Camp Voorhees is located in the township of Wall, county of Monmouth. It is bounded on the east by the ocean, on the south by an arm of the Manasquan river, on the west by the N. Y. & L. E. Railroad, and on the north by a highway.

To the northward and westward the adjoining lands are open and under cultivation, there being few dwellings in the immediate vicinity. A large family hotel, the Beach House, is located on the ocean front, several hundred yards north of the northern boundary of the reservation, and the village of Manasquan is situated about one mile distant in a south westerly direction.

**TOPOGRAPHY.**—The surface of the ground of Camp Voorhees, and of the land in the vicinity of the camp, is apparently very nearly level, but there is a fall of nineteen feet from the northwest corner of the inclosure to tide-water on the south. The ground is covered by a strong growth of clover and blue grass, and is smooth and free from abrupt undulations.

**SOIL.**—The soil is a sandy loam, with a subsoil of gravel and clay.

**AREA.**—The lands which are at present in use for military purposes comprise one hundred and thirteen acres. The adjoining lands which are available for use for encampment purposes, and which were included in the survey, consist of two hundred acres, more or less.

**DRAINAGE.**—The natural slope of the surface of the ground of the whole territory referred to in the foregoing description is sufficient to cause storm-water to quickly flow off, and, together with the porous and absorbent nature of the soil, permits the rapid drying-out of the ground after rain-falls.

**DISPOSAL OF WASTE FLUIDS.**—The waste fluids from the portion of the camp now occupied by the Fourth New Jersey regiment, are received in iron sinks placed near the kitchen at the end of each company street, and from these receptacles the liquids are conveyed to tide-water by means of a six-inch terra-cotta pipe, and are discharged at a point about five hundred feet east of the westerly end of the north arm of the Manasquan river. This line of drain-pipe is connected with no fixtures except the sinks mentioned above, and each sink is provided with a strainer, thus preventing the entrance into the drain-pipe of any insoluble materials. Another line of six-inch drain-pipe extends from the Governor's cottage to tide-water, and its outfall is at a point about two hundred feet westerly from the outlet already referred to.

**DISPOSAL OF EXCRETA.**—Excreta has heretofore been received in trenches or pits located beneath wooden buildings near the southerly border of the grounds, but a modification of the bucket system is just being introduced.

Water-tight boxes are being constructed which will be introduced beneath the seats through openings in the rear of the privy buildings, and the accumulations removed daily.

**GARBAGE** is stored in wooden barrels near the kitchen of each company, and it is removed daily to a distant point, under contract.

**STABLES.**—Several stables for the horses of the establishment are located along the southerly boundary of the inclosed lands.

**WATER-SUPPLY.**—The water which is at present supplied to the troops encamped in Camp Voorhees is furnished by three wells, two of them being surface wells, two inches in diameter and about twenty-one feet deep, and one of them being an artesian well about 675 feet deep. These wells are located east of the Governor's cottage and were originally constructed to supply a stable which stood in front of the site occupied by the wells.

The steam pump employed to raise the water to the 14,000-gallon tank, which is located in the upper portion of the pumping station, is capable of pumping seventy-five gallons per minute, but ordinarily only about fifty gallons per minute are pumped. The quantity at present supplied daily is about 60,000 gallons, or forty-five gallons per capita for the men now in the camp.

The railroad station of the N. Y. & L. E. railroad is situated a few hundred feet from the camp and a surface-tube well is located near the south end of the platform. This well was put down about fifteen years ago and it is about fifteen feet deep. It was originally provided with a wooden drain to carry the waste to a ditch about sixteen feet away, but for years this drain has been obstructed and waste-water has flowed directly upon the ground about the well-pipe through the wooden box beneath the pump. The public has free access to this well.

The peanut-shop opposite the entrance to the camp is provided with water from a surface-well situated on the premises of the "Sea Girt Farm." This well is six feet in diameter and thirty feet deep, and is located beneath the pumping-room and about seventy-five feet from the farm stable. This stable has been used for many years, and the surface of the ground in the vicinity has been used for ordinary barn-yard purposes. A steam pump and storage tank are provided, and it is estimated that 200,000 gallons of water are taken

from this well daily for use in supplying the sprinkling service for the streets of Spring Lake and for various uses about the farm.

The water is conveyed through iron pipes and delivered through hydrants conveniently located. No wells other than those above mentioned are in use on the grounds.

**LIGHTING**—Electric arc lights are located at various points on the westerly border of the grounds.

Reference to the records of this bureau shows that during the last five years the mortality from typhoid fever in the entire township of Wall, having a population by census of 1895 of 3,853, and an area of 26,236 acres, in which Camp Voorhees is situated, was as follows:

Year.	Mortality from Typhoid Fever.
1893 .....	0
1894 .....	3
1895 .....	1
1896 .....	0
1897 .....	2

#### CONCLUSIONS.

1. The lands of Camp Voorhees and the adjoining territory are well adapted for occupation as a military encampment.

2. The water-supply for the use of the troops should all be taken from artesian wells. The water from these wells, varying in depth from 450 feet to 1,100 feet, has been in use for supplying numerous municipalities along the coast of New Jersey for the past ten years, and experience has shown that the quality of the water produced by said wells is excellent. The water from these wells, in the vicinity of Sea Girt, rises above the ground surface about 30 feet, and the flow is largely increased by the use of compressed air discharged at a point about 200 feet below the surface.

3. The driven well at the railroad-station should be withdrawn, and a supply of artesian water should be provided at that point.

4. The water from the large surface-well on the Sea Girt farm is unsafe for potable use.

5. The water from the surface-wells on the premises of the three dwellings on the property which it is proposed to occupy should be closed, and a new supply from cisterns or from the artesian system should be provided.

6. Garbage should be stored in galvanized-iron receptacles, having closely-fitting covers, and having a capacity of twenty gallons each. Two of these receptacles are required for each company.

The present system of daily removal of garbage and rubbish is satisfactory.

7. The proposed bucket system for the storage and removal of excreta is satisfactory.

8. Waste liquids should be purified before they are discharged into the Manasquan river.

Very respectfully,

HENRY MITCHELL,  
Secretary.

**Local Progress in Sanitary Administration.**—The act approved March 31st, 1887, together with its amendment and supplement and subsequent allied enactments, afford to the citizens of the State organized and well-equipped departments in every municipality and township for the promotion and protection of the public health. These laws do not in the least diminish the rights, privileges and duties of individuals to defend themselves by the long-prescribed processes of law against unhealthful influences, but they recognize and give emphasis to the advantages and benefits which attend and follow the guarding, by extraordinary precautions, of the great public interests which are dependent upon the vigor and energy of the people. The so called health laws are especially intended to make it possible for a few individuals, and for those who may be unable, for financial or other reasons, themselves to set in operation the wheels of justice, to command, through the action of the local health board, the attention of the courts, and to enjoy all of the sanitary benefits which an enlightened and progressive age affords, and which the most wealthy or influential citizens can secure.

This department of the State's supervision over the well-being of all classes of citizens has been extended with particular reference to certain helpless groups of persons, and notwithstanding all of the other safeguards which the laws have thrown around the unfortunates who occupy our jails, prisons, almshouses and other public institutions, health officers are also required to visit these places of refuge or confinement, to investigate the water-supply, drainage, lighting, heating and ventilation of the buildings in which such persons are cared for.

These officers also are depended upon to prevent the sale of unwholesome or adulterated foods and to restrict the spread of the dangerous preventable diseases among men and animals. It is their duty to apply suitable and efficient measures for preventing the introduction of infected persons and articles from points outside of the sanitary districts over which they severally preside; to prevent the pollution of domestic and public water-supplies; to abate nuisances; to regulate the burial, disinterment and transportation of human remains; to regulate the disposal of refuse material; to prevent the cutting and sale of impure ice; to prevent the sale of dangerous kerosene oil, and to perform many other services having for their purpose the prevention of diseases and the prolonging of the average length of human life and term of useful labor. It is the paramount

duty of health officers to keep the persons and premises within the territory over which they have jurisdiction clean.

The co-operative movement of the local boards of health in the municipalities and township of Gloucester county has brought together at the meetings of the organization representatives of almost all of the sanitary districts in the county, and the topics presented for consideration have proved to be attractive as well as exceedingly instructive. Speakers have been invited from adjoining localities, and each subject discussed has been carefully selected to meet the purpose in view. It is apparent that this method of advancing the local administration will soon result in the application, in that section of the State, of the most highly approved official procedures for promoting the public health, and it is to be strongly desired that similar endeavors will be made in other localities.

The following correspondence has general bearing:

FANWOOD, N. J., May 16th, 1898.

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

DEAR SIR—Can you give me any information concerning the power of local boards of health to regulate the keeping of dogs?

Counsel for the borough is of the opinion that it is a matter out of our jurisdiction, but it seems to me that under the general law of 1887, Sec. 12, items II and IV, the board might claim authority.

Under item IV especially: "To regulate, control and prohibit the keeping or slaughtering of all kinds of animals." A liberal reading hardly seems to leave any question as to the power of local boards.

The dogs in question are very large animals—English mastiffs—and while, so far, they have not attacked any person, they have attacked horses being driven on the roads, often following them long distances, and in one instance threw a horse, injuring it and damaging the harness and carriage. There is hardly a woman in town who is not afraid of them, and several persons who have been in the habit of spending the summer at a large boarding house, just opposite the residence of the owner of the dogs, have stated that they would not return the present season if the dogs in question were still allowed to run at large.

They are also an annoyance at night, their bark being extremely deep and powerful, and is kept up sometimes for hours.

The community here is pretty well worked up over the question. I think that a shotgun would be the easiest solution of the trouble, but first we want to know what legal remedy we have.

A number of complaints have been made to this board, and we are quite ready to go ahead provided we have the power.

Any enlightenment therefore that you can give us will be greatly appreciated.

Very truly,

GEORGE F. CARTER,

*Secretary.*

OFFICE OF THE BOARD OF HEALTH  
OF THE STATE OF NEW JERSEY,  
TRENTON, May 25th, 1898. }

*Mr. George F. Carter, Sec'y Board of Health, Fanwood, N. J.*

DEAR SIR—Received your letter of May 16. Although ordinances have been made by many boards of health, under the provisions of sub-section 4 of section 12 of the act approved March 31st, 1887, for prohibiting the keeping of dogs, chickens, geese and cattle, yet I am not aware that any case of violation of such an ordinance has been brought to trial. The opinion has seemed to prevail that it would be unwise to attempt to enforce regulations of this nature, for the principle which underlies all so-called health laws, including the act above referred to, relates exclusively to the protection of the public health. These laws were enacted to more promptly deal with cases of emergency, and were intended to give almost unlimited authority to the then newly-constituted boards of health for the purpose of preventing the spread of disease, but the courts have not indicated, by their decisions, that it was the intention of the Legislature that these boards should assume control of affairs which can quite as well be dealt with under statutes previously existing.

Applying this test, it has been believed to be inexpedient to attempt to remove a certain class of annoyances, notwithstanding that it may be shown that they are in fact intolerable nuisances. To this class belong noise nuisances, like the ringing of bells, blowing of horns, shouting by peddlers in the streets, barking of dogs, crowing of roosters, etc., etc.

Noise nuisances, and stench nuisances also, may be extremely irritating and offensive, and may even render one's home untenable, yet the established procedures which were long in successful operation before the health laws were enacted are fully adequate for the abatement of such nuisance.

A very excellent reason why local boards of health should prefer to allow nuisances of these classes to be dealt with by the grand jury, by a suit for damages, or by the Court of Chancery, is because that in these procedures the question of public health does not necessarily require consideration, and it is enough to show that one's sleep is disturbed, that the air is rendered offensive, or that the use and enjoyment of lawful privileges is interfered with. It may be stated, as a general rule, that it is unwise to prosecute any case in the courts under the health laws when the prosecution can just as well be undertaken under the provisions of the common law or under the general statutes. The primary object of health authorities is to secure pure air, pure water, and wholesome food, and if this object is closely adhered to the results attained are more likely to be satisfactory than will be the case if we venture outside of the principles mentioned above.

Very respectfully,

HENRY MITCHELL,

*Secretary.*

**Refuse Material.**—The questions relating to the removal and disposal of garbage and rubbish have received considerable attention in several localities in the State during the past year. Two cities have purchased vehicles for the transportation of garbage, and one of

these has also supplied itself with new rubbish carts. The garbage carts have two wheels, and they are arranged to dump the load. The bodies of these carts are made of metal and they have a capacity of thirty-five cubic feet. The rubbish carts also have two wheels, but the load is discharged by opening doors in the rear. The advantages appertaining to two-wheeled vehicles consist in the convenience with which they can be turned in narrow streets and the readiness with which they can be dumped, but their use involves the employment of strong and heavy horses.

Section 12 of the act approved March 31st, 1887, provides that (Sub-section 5) local boards of health may make ordinances "to regulate, control and prohibit the accumulation of offal and all decaying or vegetable substances," and under this authority the following ordinance has been for several years in operation in one sanitary district:

"That all garbage and offal which shall accumulate anywhere in the borough, or which is stored, kept or retained therein, shall be kept in galvanized iron receptacles. Said receptacles shall be water-tight and they shall be kept 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. 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."

But the attorney of the municipality has recently advised the local board that the law does not warrant specifications in the ordinance concerning the receptacle in which the garbage shall be stored, and a careful examination of the language of the section above quoted will leave no doubt that this view is correct.

Unquestionably the control of the domestic storage of garbage is desirable, for every inspector has observed that peach baskets, old boxes and other leaky catch-alls are usually made to serve as garbage receptacles where no municipal requirement compels householders to provide a uniform and water-tight vessel. A supplement to the act governing this matter is therefore needed to explicitly direct that a suitable ordinance may be made for the control of the storage of garbage in cities and towns.

The following specifications for the removal of refuse materials passed through many hands in its preparation, and it is believed to contain very valuable suggestions for those health officers to whom may fall the duty of preparing such a contract:

Specifications for the collection, removal and disposal of garbage, dead animals and rubbish:

1. Bids must be made upon blanks furnished by the common council, and must state a gross sum per annum: (1) For the collection, removal and disposal of garbage and rubbish and dead animals; (2) for the collection, removal and disposal of garbage and dead animals; (3) for the collection, removal and disposal of rubbish. Bids must include all work embraced in specifications.

2. Parties making bids must fill up the blanks, both in words and figures.

3. All garbage and rubbish and dead animals must be collected, removed and disposed of in a manner which, in the opinion of the board of health of the said city, will not be prejudicial to the public health and will not create a nuisance; the method to be subject to the approval of the said board of health.

4. A satisfactory bond for the full amount of the contract must accompany each bid.

5. Bidders, or their authorized agents, are expected to be present at the opening of bids. Awards will be made as promptly as possible after such opening, but not until it has been shown to the satisfaction of the board of health that the method of disposal proposed can be conducted without nuisance or injury to public health.

6. The contractor will be required to furnish evidence satisfactory to the board of health that he has permission from the proper authorities of the township or municipality in which it is intended to dispose of such garbage, rubbish and dead animals, to bring such garbage, rubbish and dead animals into such township or municipality and there to make such proposed disposal during the entire term of the contract. All garbage, rubbish and dead animals must be transported in covered conveyances satisfactory to the board of health.

7. Payment for work done will be made monthly, upon requisitions approved by the board of health of said city, provided that the work in the judgment of said board of health is satisfactorily done. Contractors must punctually pay the workmen who may be employed by them upon the work under their contract in cash. A good and sufficient bond to the city of \_\_\_\_\_ in a penal sum equal to the annual amount of the contract with the sureties, to be approved by the common council of said city, will be required from the contractor guaranteeing that the contract will be strictly and faithfully performed to the satisfaction of and acceptance by the board of health. The contractor shall file with the board of health of the city of \_\_\_\_\_, prior to each payment, an affidavit, and shall furnish such other evidence as may be required, that he has paid in full all accounts against him which were due at the expiration of the period for which payment is about to be made for services and material which were used in the execution of this contract. And if such evidence is not furnished, such sum or sums as may be necessary, in the discre-

tion of the common council, may be retained until such accounts shall be fully satisfied.

8. Failure to commence work at the time specified, or to prosecute it thereafter in a satisfactory manner, in the opinion of said board of health, will be authority for them to suspend the contractor from the work and to employ other parties to complete it, or to wholly annul said contract. All money due the contractor at the date of any such suspension or annulment will be applied to the conduct of the work, and any excess of cost over and above the amount so retained will be charged against the contractor and his sureties, who will each and severally be held liable therefor.

9. Neither the contract nor any interest therein shall be transferred by the parties to whom the award is made, without the written consent of said board of health. It will be a condition of the contract that transfers without such consent will be null and void, and the absence of such consent will authorize the said board of health to annul the contract and to give the work to other parties, under the conditions mentioned in paragraph 8 of these specifications; provided that the sureties upon the contract do not elect to proceed with the work.

10. The term "garbage," whenever it occurs in these specifications, shall be held to mean all refuse animal or vegetable matter and offal and all decaying or decomposing substance which may accumulate in said city. The term "rubbish" shall be held to include all of the daily waste, except garbage, dead animals and ashes from private houses, stores, hotels and boarding-houses and all public places, and applies particularly to such articles as paper, tin cans, rags, broken bottles, broken glass, crockery, leaves, grass and rakings of yards and lawns, and such other articles and things as are daily thrown in waste-baskets and rubbish-barrels; but it is understood not to include anything like building material or parts of trees (except leaves as aforesaid), or manure, except as hereinafter specified, or earth, nor the refuse from new buildings or the refuse from any old building which is torn down in whole or in part.

It is further agreed and made a part of this contract, that the construction of the clause defining what rubbish shall be removed by the contractor shall be left with the board of health, or its duly authorized agent, and its or his decision shall be final and conclusive and conclusively binding upon both parties.

All employes and drivers of wagons shall wear, when engaged in the performance of their duties, such white and brown duck suits, hats or caps as shall be designated by the board of health, and which are to be kept white and clean, to the satisfaction of said board, and all employes and drivers of wagons shall wear badges with numbers thereon, which said badges are to be furnished by the city, and remain its property, and to be surrendered upon the expiration of this contract or the termination of the service of said employe. The contractor shall require to deposit the sum of seventy-five cents for each of the badges so used, which deposit shall be returned upon the surrender of the badge or badges at the expiration of the term of the contract or the termination of the service of the employe using same.

11. All garbage shall be called for and removed from all buildings and premises and from all public and private places within the city daily at such times and places as said board of health deem necessary from June first to

October first, and three times in each week, viz., Monday, Wednesday and Saturday, from October first to June first in each year. All garbage must be collected between the hours of seven o'clock A. M. and six o'clock P. M., provided that special collections at other hours may be authorized by the board of health. The contractor shall, on Saturday of each week, between the hours of two and six P. M., remove all garbage from such premises as shall be designated by the board of health, and on Monday of each week the contractor shall remove all of the garbage from said designated premises between the hours of seven A. M. and twelve M. Dead animals shall be collected and removed daily during the entire year.

12. All rubbish which shall accumulate on any premises in said city, or upon any public or private street, alley or place therein, shall be collected and removed daily by the contractor, excepting that from October first to June first, all rubbish which shall accumulate anywhere north of Summerfield avenue shall be collected and removed only three times in each week, viz., on Tuesday, Thursday and Saturday.

13. All garbage, dead animals and rubbish shall be collected, transported and disposed of in a manner which in the opinion of the said board of health will not be detrimental to public health, and said material shall be deposited and disposed of only at such place or places as may be approved by the said board of health.

14. Collectors will not be allowed at any time to pick or sort garbage or rubbish, and must transfer it from the receptacles of the householders to the cart or other vehicle used for its transportation without unnecessary delay or exposure and without spilling.

15. Upon the failure of the contractor to execute within six hours any order issued by the board of health, or its authorized representative, for the removal of any garbage or dead animal, or for failure to remove any rubbish within twelve hours after having received notice from the board of health, or its representative, requiring such removal of garbage, dead animal or rubbish, the said board of health may cause the same to be removed, and shall enter against the contractor the cost of such removal, not to exceed ten dollars (\$10) in any one day, and such cost shall be deducted from any money due or which may become due the contractor, and shall be paid to the party making such removal or collection. The contractor or his representative, who can read and speak English, shall call daily at the office of the board of health, from June 1st to October 1st, and on Monday and Thursday of each week, from October 1st to June 1st, between the hours of 1 and 2 P. M., to receive orders from the board of health or its authorized representative.

16. The body of the vehicle used for the transportation and removal of garbage must be of metal. They must be watertight, strongly built, provided with closely-fitting metal covers, and they shall be thoroughly scrubbed inside and outside daily, and the contractor shall cause every cart or vehicle used in transporting garbage and dead animals from said city to be made clean and inoffensive before said cart or vehicle shall be returned to the said city, and it is agreed that in case any cart or vehicle used for transporting garbage is allowed to enter said city in an unclean condition, the board of health or its representative is authorized to require that said cart or vehicle shall be at once removed from said city. When in motion on streets or avenues, said vehicle

shall be entirely and tightly covered, and while being loaded not more than one-half of the top of each of said vehicles shall be uncovered. The capacity and material and manner of construction of the vehicle employed for the removal of garbage, dead animals and rubbish, shall be subject to the approval of the board of health. All cans, or other receptacles for rubbish, when emptied, shall be placed back upon the sidewalk next to the lot-line, except in the business portion of the city, in which section said empty receptacles shall be placed on the sidewalk near the curb. All receptacles for garbage shall, when emptied, be returned to the place from which they were removed. All carts or other vehicles used for transporting garbage, dead animals and rubbish must be strongly built and kept well painted, in colors to be approved by the board of health, and must have the words "Public Garbage Service," and the number of the cart or vehicle painted on each side thereof, in letters four inches in height, to be kept clean and always legible. None but strong, serviceable horses or mules shall be used in this service, and no person under eighteen years of age shall be employed on the work. At least two men shall always accompany each vehicle employed in the collection of garbage and rubbish, at least one of whom shall speak the English language. Neither the contractor nor any of his agents or employes shall make any charge to any householder or resident in \_\_\_\_\_ for the removal of any refuse material of any description, nor shall he or they demand, collect or receive from private individuals any money or compensation for the removal of any such substance during the continuance of this contract. The contractor must present all vehicles used by him for the collection of garbage and rubbish for inspection, at such time and places as may be designated by the board of health. Vehicles for the transportation of garbage, conforming to the requirements of these specifications, will be provided by the Common Council of said city, and these vehicles shall be employed by the contractor, except as hereinafter provided, in the removal of garbage and dead animals. The contractor shall pay to the said Common Council the sum of \$24 per annum, in equal monthly payments, for the use of each of said vehicles. If additional vehicles are necessary for the removal of said garbage and dead animals, they shall be provided by the contractor. All vehicles used by the contractor for the collection and removal of garbage, dead animals and rubbish shall be maintained and kept well painted and in good repair by the contractor. All vehicles used by the contractor for the removal of rubbish shall be provided by the contractor. Daily reports shall be made by the contractor to the board of health on blanks furnished by said board, which report shall show the number of full or parts of loads of garbage and rubbish collected, and shall also show the number of men and horses and vehicles employed. The contractor shall furnish, in writing, such information in reference to the conduct of the work, including the violation of the ordinances of the board of health, in relation to the storage of garbage on premises by householders as may be called for from time to time by the board of health.

17. Absence of any employe will not be considered a sufficient excuse for failure to collect all garbage which may have accumulated, or for the improper collection of garbage. The use of unsuitable receptacles, or the placing of such receptacles by householders in inaccessible places, will not be considered a sufficient excuse for failure to collect garbage at any specified place,

unless the contractor shall have notified the board of health in writing, and such neglect on the part of the householder prior to the non-collection.

18. The collector shall report in writing, within twenty-four hours, all cases where it is impossible, because of the garbage being frozen or otherwise, to perform the requirements of this contract. The contractor shall be responsible to the owners of garbage and rubbish receptacles for all damage done to said receptacles by improper handling or rough usage. The contractor shall collect and remove garbage from such places of storage on premises as may be approved by the board of health. The contractor shall remove daily, except Sundays, all manure which shall accumulate on premises occupied by the horses of the fire department.

**Sanitary Inspection** has been recognized by the trustees of Rutgers College as an art which demands on the part of its practitioners careful preparation for the duties and responsibilities of their calling, and, as heretofore announced in these Reports, this institution has taken the initiative in this country in extending to persons who are already engaged in the work of sanitary inspection, and also to those who may desire such employment, opportunity to demonstrate their fitness for the occupation.

Following is the first formal announcement of the new department :

RUTGERS COLLEGE  
AND  
RUTGERS SCIENTIFIC SCHOOL,

THE NEW JERSEY STATE COLLEGE FOR THE BENEFIT OF AGRICULTURE AND THE MECHANIC ARTS.

*Circular of Information*

*Concerning Examinations in the Principles and Practice of Municipal Hygiene.*

The Sanitary Laws of New Jersey are designed, not to restrict personal rights, but, by making the liberty of each citizen coincident with the interest of all, to secure the general welfare and true individual freedom. To aid in promoting the purpose of these laws, the trustees of Rutgers College have appointed a board of examiners to conduct examinations and grant certificates in municipal hygiene to officers of local boards of health, sanitary inspectors, factory inspectors, plumbing inspectors, and to those who may seek appointments to these positions.

The examinations are designed to test the fitness of persons who may be called upon to engage in the execution of the health laws, and the certificates issued will indicate the degree in which the holders are qualified to perform the duties relating to the promotion and the protection of the public health required by the laws of the State and by the rules, regulations and ordinances of local boards of health. Examinations will be held on the first Wednesday of the months of March, June and October in the year 1893, in the college buildings in New Brunswick, and will be both written and oral. Persons

desiring to take the examinations are required to furnish to the president of the college satisfactory testimonials as to age and personal character, and to make written applications, on blanks provided by the college, at least ten days before the date fixed for the examination. All candidates should be at least twenty-one years of age and must give evidence of possessing a fair elementary education. These examinations are open to men and women. A certificate of competency, signed by the examiners and bearing the seal of the college, will be granted to each successful candidate. The fee for a first examination in any or all subjects will be \$5.00; for any subsequent examination in any or all subjects, \$2.00.

A list of successful candidates will be furnished to the State board of health, and, on application, to local boards of health.

#### SUBJECTS FOR EXAMINATION.

##### *Executive Health Officers.*

1. The Health Laws and Duties of Boards of Health.
2. Vital Statistics.
3. Principles of Bacteriology.
4. Contagion and Infection.
5. Hospitals.
6. Habitations.
7. Collection and Disposal of Refuse.
8. Industrial Hygiene.
9. School Hygiene.
10. All topics included in examinations for Sanitary Inspectors, Factory Inspectors and Plumbing Inspectors.

##### *Sanitary Inspectors.*

1. Air, Water, Soil, Food.
2. Heating, Lighting, Ventilating.
3. Preventable Diseases.
4. Isolation and Quarantine.
5. Cleansing and Disinfection.
6. The Health Laws.
7. Record-Keeping.
8. All topics included in examinations of Plumbing Inspectors.
9. Detection of Defects in Gas and Electric Light Supply.

##### *Factory Inspectors.*

1. Air, vitiation of by Respiration.
- “ “ “ Combustion.
2. Water, Soil, Food.
3. Dust and Smoke.
4. Mines.
5. Diseases due to Occupations.
6. Nuisances incidental to Manufactures.

#### 7. Protection against Fire.

- “ “ Lightning.
- “ “ Explosions.
- “ “ Accidents in Workshops.

##### *Plumbing Inspectors.*

1. Health Laws.
2. Water-Supply and Drainage.
3. Plans and Descriptions of Drainage.
4. Materials and Constructions.
5. Plumbing Fixtures.
6. Detection of Defects in House-Drainage.
7. Records and Reports.

The gentlemen whose names follow will serve as the Board of Examiners: Professor Cyrus F. Brackett, M.D., LL.D., of Princeton University, will examine on plumbing, drainage and sanitary construction.

Hon. Wm. M. Lanning, M.A., of Trenton, on sanitary laws, ordinances, rules and regulations.

William K. Newton, M.D., of Paterson, on preventable diseases, isolation and disinfection.

John L. Leal, M.A., M.D., of Paterson, on nuisances and disposal of waste. Professor F. C. Van Dyck, Ph.D., and Professor Edward B. Voorhees, M.A., of Rutgers College, on lighting, heating, ventilation and food.

The following books will be useful in preparing for these examinations:

Laws of New Jersey, 1887, chapter 68.	
“ “ 1888, “ 56.	
“ “ 1888, “ 39.	
“ “ 1895, “ 260.	
“ “ 1896, “ 203.	
“ “ 1897, “ 93.	
“ “ 1897, “ 152.	
“ “ 1897, “ 107.	

Parkes' Practical Hygiene, published by F. Blakiston, Son & Co., Philadelphia.

Practical Hygiene, by Coplin & Bevan, published by F. Blakiston, Son & Co., Philadelphia.

Text-Book of Hygiene, by G. H. Rohe, M.D., published by the E. A. Davis Co., Philadelphia.

Principles of Bacteriology, by A. C. Abbott, M.D., published by Lea Brothers & Co., Philadelphia.

AUSTIN SCOTT,  
*President of Rutgers College.*

New Brunswick, New Jersey, January 14th, 1898.

**Public Water-Supplies.**—The attention of the State board of health has been very frequently drawn to the defilement, by improper



disposal of sewage, of water-sheds and streams used for supplying water to municipalities, and the urgent necessity and duty of affording protection to water consumers who are themselves unable to control the source of supply has been presented to the Governor and Legislature in the previous annual reports of the board. The injurious effect upon health which attends the use of contaminated water for drinking purposes is well understood by the public, and the demand for pure water is universal, yet it is the general practice to discharge waste fluids into the nearest or most convenient watercourse, disregarding altogether the safety of persons further down stream.

Following is the text of a bill which has been prepared to conform to the enactments which have been in successful operation in Massachusetts for twelve years, for the purpose of preserving the purity of streams and water-sheds, and to defend persons dependent upon the public water-works of cities and towns against the dangers to health and life which attend the drinking of polluted water :

**An Act to secure the purity of the public supplies of potable waters in this State.**

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

1. No sewage, drainage, domestic or factory refuse, excremental or other polluting matter of any kind whatsoever, which, either by itself or in connection with other matter, will corrupt or impair, or tend to corrupt or impair, the quality of the water of any river, brook, stream, lake, pond, well, spring or other reservoir from which is taken or may be taken any public supply of water for domestic use in any city, town, borough, township or other municipality of this state, or which will render, or tend to render, such water injurious to health, shall be placed in or discharged into the waters or placed or deposited upon the ice of any such river, brook, stream, lake, pond, well, spring or other reservoir, nor shall any such sewage, drainage, domestic or factory refuse, excremental or other polluting matter be placed upon the banks of any such river, brook, stream, lake, pond, well, spring or other reservoir; and any person or persons, or private or public corporation which shall offend against any of the provisions of this section shall be punished by a fine not exceeding one hundred dollars, or by imprisonment not exceeding ninety days, or both; *provided, however,* that this section shall not be held to apply to any city, town, borough, township, or other municipality of this state, which, at the date of the passage of this act, has a public sewer or system of sewers, drain or system, of drains, legally constructed under municipal or township authority, discharging its drainage or sewage into any such river, brook, stream, lake, pond, well spring or other reservoir.

2. The state board of health shall have the general supervision, with reference to their purity, of all rivers, brooks, streams, lakes, ponds, wells, springs and other reservoirs in this state, the waters of which are, or may be used as the

source or sources of public water-supplies for domestic use, together with the waters feeding the same, and shall have the authority from time to time, as they deem necessary or proper, to examine the same and to inquire what, if any, pollutions exist and their causes; and the said state board of health, in carrying out the provisions of this section, may from time to time, as they deem it necessary or proper, address inquiries in printed or written form to any local board of health, municipal or township authority, corporation, or person or persons, which inquiries it shall be the duty of the persons or parties addressed to answer within such time as the said state board of health may in such inquiries prescribe.

3. The municipal or township authority of any city, town, borough, township or other municipality of this state, which shall hereafter contemplate the establishment of a public water-supply for domestic use, or the increase of any present water-supply for domestic use, and any person or corporation which shall hereafter contemplate the establishment or construction of a plant or works for furnishing a public water-supply for domestic use to any city, town, borough, township or other municipality of this state or for furnishing thereto an increase of any present water-supply for domestic use, shall, before establishing the same and before constructing or entering into any contract for the construction of any works for such water supply, advise with the state board of health and submit to said state board maps, plans and specifications for such works, and it shall not be lawful for any such municipal or township authority or person or corporation to construct or enter into any contract for the construction of any such works without first having advised with said board of health and submitted to said state board such maps, plans and specifications, and obtained from said board their approval of the same.

4. The municipal or township authority of any city, town, borough, township or other municipality of this state which shall hereafter contemplate the construction of any sewer or system of sewers, drains or system of drains, the outlet of which shall be into any river, brook, stream, lake, pond, well, spring or other reservoir above the point from which such, or any other, city, town, borough, township or other municipality of this state shall or may obtain its supply of water for domestic use, shall, before constructing the same and before entering into any contract for its construction, advise with said state board of health and submit to said state board maps, plans and specifications for the construction of such sewer or system of sewers, drain or system of drains, and it shall not be lawful for any such municipal or township authority to construct or enter into any contract for the construction of such sewer or system of sewers, drain or system of drains, without first having advised with the said state board of health and submitted to said state board such maps, plans and specifications, and obtained from said board their approval of the same.

3. In the case of any city, town, borough, township or other municipality of this state having a public sewer or system of sewers, drain or system of drains, which, at the date of the passage of this act, is legally constructed under municipal or township authority and discharging its sewage or drainage into any river, brook, stream, lake, pond, well, spring or other reservoir, the waters of which are used for domestic purposes in such, or any other, city, town, borough, township or other municipality of this state, it shall be lawful for the said

state board of health to advise with the municipal or township authority having charge of the construction and care of any such sewers or drains, as to the best practicable method of preventing the pollution of the waters into which such sewage or drainage is discharged, and as to the best practicable method of disposing of or purifying such sewage or drainage.

6. If any person or persons, corporation or corporations, city, town, borough, township or other municipality of this state, or any municipal or township authority, shall violate any of the provisions of the first section of this act, or shall attempt to establish a public water-supply for domestic use, or to increase any present water-supply for domestic use, or to construct or enter into any contract for the construction of any works for such water-supply without first having advised with the state board of health and submitted to said board maps, plans and specifications for such work, and obtained from said state board their approval of the same pursuant to the third section of this act, or shall attempt to construct any sewer or system of sewers, drain or system of drains, such as are described in the fourth section of this act, or enter into any contract for the construction of any such sewer or system of sewers, drain or system of drains, without first having advised with the said state board of health and submitted to said board maps, plans and specifications for such work, and obtained from said board their approval of the same, as provided for in the fourth section of this act, or shall refuse or neglect to comply with any order or determination of the state board of health authorized by this act, it shall be lawful for said state board of health to file a bill in the court of chancery, in the name of the state, on the relation of such board, for an injunction to prohibit the threatened pollution, or further continuance of the pollution, of the waters concerning which any such order or determination of said state board of health may be made, and to enforce such order or determination of said board, and also to prohibit the construction or the entering into any contract for the construction of any such water-works, sewer or system of sewers, drain or system of drains, without the approval of the state board of health, and every such practice or action shall proceed in the court of chancery according to the rules and practice of bills filed in the name of the attorney-general, on the relation of individuals, and cases of emergency shall have precedence over other litigation pending at the time in the court of chancery, and may be heard on final hearing within such time and on such notice as the chancellor shall direct.

7. All acts and parts of acts inconsistent with the provisions of this act be and the same are hereby repealed.

8. This act shall take effect immediately.

It is probable that the foregoing bill or some other measure having for its purpose the protection of the public water-supplies of the State will be introduced at the next meeting of the Legislature.

**Water-Supplies and Sewerage.**—The following table, with additions and corrections, to October 1, 1898, shows the places in New Jersey having water-supplies and sewers:

TABLE 31.—LOCALITIES IN NEW JERSEY HAVING PUBLIC WATER-SUPPLIES.

Place.	County.	When introduced.	Ownership.	Source of supply.	Storage capacity—gallons.	Taps.	Hydrants.	Average consumption—gallons.	Pressure—pounds.
Arlington	Hudson	1886	City	See Kearny	.....	.....	.....	.....	.....
Asbury Park	Monmouth	1886	City	Artesian—filters	105,000	1,028	61	400,000	45
Atlantic City	Atlantic	1895	City	Artesian—stream	870,000	5,400	451	4,500,000	45
Atlantic Highlands	Monmouth	1893	Borough	Artesian—filters	250,000	3,303	74	1,09,428	35
Bayonne	Hudson	1882	City	E. Jersey—Pequanook	100,000	900	24	50,000	48
Beach Haven	Ocean	1899	Borough	Artesian	.....	.....	.....	.....	.....
Belleville	Essex	1871	Village	From Newark	.....	.....	.....	.....	.....
Belmar	Monmouth	1887	Borough	Artesian	.....	.....	.....	.....	.....
Belvidere	Warren	.....	.....	Delaware river	25,920	175	26	.....	.....
Bergen Fields	Bergen	.....	.....	From Hoboken	.....	.....	.....	.....	.....
Beverly	Burlington	1857	Private Co.	Delaware river	112,000	310	12	.....	65
Blairstown	Warren	1869	.....	.....	.....	.....	.....	.....	.....
Bloomfield	Essex	.....	.....	See East Orange	.....	.....	.....	.....	.....
Boonton	Norris	1855	Private Co.	Mountain stream	500,000,000	.....	55	.....	20-105
Bordentown	Burlington	1856	Private Co.	Delaware—filters	500,000	.....	60	500,000	.....
Bound Brook	Somerset	1889	.....	Middle brook	12,000,000	485	50	.....	45
Brambleton	Essex	1886	.....	.....	25,000	15	.....	.....	30
Brealin Park	Morris	1896	Association	Lake Hopatcong	1,650,000	1,790	180	630,000	40
Bridgeton	Burlington	1882	City	Delaware river	282,000	1,700	115	450,000	560
Burlington	Burlington	1861	.....	Delaware river	8,000,000	9,700	528	12,000,000	34
Camden	Camden	1833	.....	Artesian	130,000	780	80	850,000	.....
Cape May City	Cape May	1874	.....	Surface	150,000	.....	.....	.....	.....
Cape May C. H.	Cape May	1885	Private Co.	.....	.....	.....	.....	.....	.....
Carlsbad	Bergen	.....	.....	Hoboken	.....	.....	.....	.....	.....
Carteret	Mid Essex	1867	Private Co.	See Woodbridge	.....	.....	.....	.....	.....
Clayton	Gloucester	1895	.....	Driven wells	91,800	48	40	.....	60
Cliffside	Bergen	1887	Private Co.	From Hoboken	1,000,000	.....	24	.....	.....
Clinton	Hudson Co.	.....	.....	Mountain springs	.....	.....	.....	.....	.....
Clinton Township	Essex	.....	.....	See N'k and Irvington	.....	.....	.....	.....	.....
Collingswood	Camden	1881	Private Co.	.....	557,500	355	15	25,000	.....
Columbia Heights	Union	.....	.....	.....	.....	.....	.....	.....	.....
Cranford	Union	.....	.....	Wells at Plainfield	.....	.....	.....	15,000	24
Darlington	Monmouth	1865	Private	Artesian	50,000	13	5	15,000	125
Deckertown	Sumner	1896	Borough	Lake Rutherford	173,000,000	.....	45	75,000	125
Delford	Bergen	.....	.....	From Hoboken	.....	.....	.....	.....	.....
Dover	Morris	1867	Private Co.	Spring	6,000,000	863	473	75,000	30
East Orange	Essex	1893	.....	Wells	2,800	.....	500	.....	45
East Rutherford	Bergen	.....	.....	From Hoboken	.....	.....	.....	.....	.....
Egg Harbor City	Atlantic	1893	Private Co.	Artesian	857,000	.....	260	4,000,000	25
Elizabeth	Union	1854	.....	Art. & Elizabeth river	313,000,000	5,500	260	4,000,000	25
Egglewood	Bergen	.....	.....	From Hoboken	.....	.....	.....	.....	.....
Egglewood Cliff	Bergen	.....	.....	.....	.....	.....	.....	.....	.....
Essex Falls	Essex	1863	Private Co.	Spring	70,000	.....	20	25,000	.....
Fairview	Bergen	.....	.....	From Hoboken	.....	.....	.....	.....	.....
Fanwood	Union	1893	Private Co.	From Plainfield	.....	.....	.....	.....	.....
Flemington	Hunterdon	1884	.....	Raritan river	650,000	168	21	150,000	25
Franklin Township	Essex	.....	.....	See Nutley	.....	.....	.....	.....	.....
Freshford	Monmouth	1861	Township	Artesian	235,000	801	5	150,000	40
Garfield	Monmouth	1868	Private Co.	Deep wells	60,000	.....	20	20,000	30
Giasboro	Gloucester	1896	.....	See Clayton	70,500	.....	35	.....	25
Glen Gardner	Hunterdon	.....	.....	.....	.....	.....	.....	.....	.....
Glen Ridge	Camden	.....	.....	See E. Orange	.....	.....	.....	.....	.....
Gloucester City	Camden	1854	City	Spring and creek	2,000,000	891	80	500,000	.....
Guttenberg	Hudson	.....	.....	From Hoboken	.....	.....	.....	.....	.....
Hackensack	Hudson	.....	.....	.....	.....	.....	.....	.....	.....
Hackettstown	Warren	.....	.....	Mountain springs	.....	.....	.....	.....	.....
Haddonfield	Camden	1868	.....	.....	3,000,000	150	21	25,000	.....
Harrison	Hudson	1898	City	From Jersey City	.....	780	80	.....	.....
Haabrook Heights	Bergen	.....	.....	From Hoboken	.....	.....	.....	.....	.....
Highlands, Navesink	Monmouth	1866	Private Co.	Spring and wells	.....	.....	.....	.....	.....
Hightstown	Essex	1895	Borough	Artesian	81,000	106	47	35,000	60
Hoboken	Hudson	1854	Private Co.	Hackensack river	45,153,000	13,144	1,136	.....	.....
Irvington	Essex	1891	.....	From Newark	.....	.....	.....	.....	.....
Jersey City	Hudson	1853	City	East Jersey	247,000,000	20,468	738	1,930,000	40
Kearny	Hudson	1887	Township	From Jersey City	.....	.....	.....	.....	.....
Keypoint	Monmouth	.....	.....	.....	250,000	.....	.....	.....	.....
Lakewood	Ocean	1888	Private Co.	Metedeconk river	.....	.....	.....	.....	.....
Lambertville	Hunterdon	1878	.....	Ewan's creek—filters	80,000,000	300	.....	.....	.....
Leola	Bergen	.....	.....	From Hoboken	.....	.....	.....	.....	.....
Little Ferry	Hunterdon	.....	.....	Spring	.....	.....	.....	.....	.....
Loch	Bergen	.....	.....	From Hoboken	.....	.....	.....	.....	.....
Long Branch	Monmouth	1877	Private Co.	Brook—filters	6,000,000	1,350	183	1,800,000	39
Longport	Atlantic	1895	Private Co.	.....	.....	.....	.....	.....	.....
Lorraine	Union	1881	.....	.....	.....	.....	.....	.....	.....
Madison	Morris	1890	Borough	Open wells	.....	.....	250	150,000	85
Maple Shade	Burlington	1894	Private Co.	Well	.....	.....	.....	.....	.....
Maywood	Bergen	.....	.....	From Hoboken	.....	.....	.....	.....	.....
Medford	Burlington	1893	Private Co.	Creek	80,000	110	30	30,000	45
Merchautville	Camden	1867	.....	Stream	810,000	261	40	45,501	.....

TABLE 31.—LOCALITIES IN NEW JERSEY HAVING PUBLIC WATER-SUPPLIES.—Con.

Place.	County.	When introduced.	Ownership.	Source of supply.	Storage capacity—gallons.	Taps.	Hydrants.	Average consumption—gallons.	Pressure—pounds.
Metuchen.....	Middlesex	1897	Private Co.	Wells—Sowing			35		64
Midland.....	Bergen	1878	"	From Hoboken					
Millville.....	Cumberland	1878	"	Wells and river	700	66	1,000,000		45
Monmouth Beach.....	Monmouth	1888	"	From Long Branch					
Monclair.....	Essex	1897	"	E. Jersey—Pequanock	1,458	337	731,659		
Moorstown.....	Burlington	1888	"	Spring and creek	1,000,000	841	65	250,000	45
Morristown.....	Morris	1790	"	Spring	2,650,000	915	111	450,000	30-55
Mount Holly.....	Burlington	1846	"	Rancocas creek	1,400,000	750	45	250,000	35
Newark.....	Essex	1800	City well	East Jersey—Pequanock	132,000,000	29,516	1,818	23,200,000	30
New Barbadoes.....	Bergen	1889	City	See Hackensack					
New Brunswick.....	Middlesex	1865	City	Lawrence brook	15,000,000	3,815	213	1,600,000	18-55
Newtown.....	Sussex	1885	Town	Morris lake	730,000,000	500	30		75-150
North Bergen.....	Hudson	1888	"	From Hoboken					
North Plainfield.....	Somerset	1889	"	From Plainfield					
Ocean City.....	Cape May	1884	Private Co.	Artesian	50,000		30		
Ocean Grove.....	Monmouth	1884	Association	"	235,000	854	41	188,300	35
Orango City.....	Essex	1888	City	Rahway river	375,000,000	1,203	210		
Paltades.....	Bergen	1888	"	From Hoboken					
Palmyra.....	Burlington	1888	"	From Riverton					
Parsippany.....	Passaic	1873	City	Passaic river	1,000,000	701			35
Paterson.....	"	1856	"	"	50,000,000	6,648	834	10,000,000	
Pemberton.....	Burlington	1894	Private Co.	Well					
Pennington.....	Mercer	1866	"	Spring	80				
Perth Amboy.....	Middlesex	1829	City	Tennent's brook	105,000,000	835	157	2,000,000	40
Phillipsburg.....	Warren	1887	Private Co.	Well near Delaware	2,000,000		76	2,000,000	112
Plainfield.....	Union	1891	"	Wells	515,000	1,300	228	700,000	74
Princeton.....	Mercer	1828	"	"	145,000	413	54	75,000	60
Rahway.....	Union	1871	City	Rahway river		696	125	630,000	
Earlton.....	Essex	1888	"	From Somerset					
Red Bank.....	Monmouth	1858	Town	Artesian wells	350,000	425	100	300,000	45
Ridgefield.....	Bergen	1888	"	From Hoboken					
Ridgedale Park.....	"	"	"	"					
Riverdale.....	"	"	"	"					
Riverton.....	Burlington	1829	Private Co.	Well	70,000	150	63		
Rockaway.....	Morris	1897	"	Brook	1,000,000				
Roselle.....	Union	1888	"	From Elizabeth					
Rutherford.....	Bergen	1888	"	From Hoboken					
Salem.....	Salem	1820	City	"	43,000,000		71	400,000	35
Schraalenburg.....	Bergen	1888	"	From Hoboken					
Seabright.....	Monmouth	1888	"	From Long Branch					
Sea Isle City.....	Cape May	1896	Private Co.	Artesian	58,776	105	65		
Somerville.....	Somerset	1883	"	Raritan river—filters	514,000		63	750,000	45
South Amboy.....	Middlesex	1894	Borough	From Perth Amboy					
South Orange.....	Essex	1890	"	From Summit					
Spring Lake.....	Monmouth	1883	"	Under construction					
Stockton.....	Camden	1883	Private Co.	Artesian	115,300		140		
Summit.....	Union	1833	"	"		700	50	500,000	50-85
Tenafly.....	Bergen	1888	"	From Hoboken					
Toms River.....	Ocean	1888	"	"					
Trenton.....	Mercer	1813	City	Delaware river	37,000,000		150	5,500,000	23-40
Tuckerton.....	Hudson	1898	Private Co.	Lake					
Union Township.....	Hudson	1898	"	From Hoboken					
Valhalla.....	Essex	1816	"	From South Orange					
Vineland.....	Burlington	1896	Private Co.	Artesian	51,500	110	30		40-55
Vineland.....	Cumberland	1896	"	Driven wells	79,000	83	30	125,000	
Washington.....	Bergen	1888	"	From Hoboken					
Washington.....	Warren	1851	"	From Hoboken	1,000,000	430	30		80
Weehawken.....	Hudson	1881	"	From Hoboken					
Wenonah.....	Glooucester	1885	"	Spring	50,000				
Westfield.....	Union	1888	"	"					
West Hoboken.....	Hudson	1888	"	From Hoboken					
Westwood.....	Bergen	1891	"	Artesian	60,000	209	15		30
Westwood.....	Union	1888	"	From Plainfield	80,000	32	30		40
Woodbridge.....	Middlesex	1897	"	Flowing wells					
Woodbury.....	Glooucester	1896	Village	Mantua creek	1,350,000	751	82	300,000	45
Woodstown.....	Salem	1832	Private Co.	Artesian	874,400	126	55	50,000	55

**Milk.**—The act approved April 23d, 1897, has been welcomed by local boards of health throughout the State, and under ordinances made in accordance with its provisions, the difficulties previously encountered in preventing the sale of unclean milk have been removed.

To correct a defect in the method of obtaining information relating to the sources of the milk-supply, the act above referred to was amended by an act approved April 21st, 1898, as follows:

"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 within the municipalities in which such boards of health are organized, to furnish forthwith when so requested by said boards of health, or any inspector or officer thereof, a true statement in writing, upon blanks to be supplied by said boards of health, setting forth the locality from which said milk was procured, and also a full and complete list of the names of 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 city, borough or other municipality in which said board of health may be organized, and said blanks, when filled, in as aforesaid, shall be signed by the person selling said milk to whom the said blank shall be tendered; and said ordinance may require the person or persons engaged in the sale of milk, as aforesaid, to notify, in writing, said board of health immediately upon changing the source of supply of said milk of such change, and said notice shall also state the name or names of persons supplying said milk and the locality from which such milk is procured."

Following is the form of an ordinance now in operation in one sanitary district, made under the provisions of the act of April 23d, 1897, and the amendment of April 21st, 1898:

1. Be it ordained by the board of health of the [name of place], that any person or persons engaged in the sale of milk in the [name of place], in the county of \_\_\_\_\_, State of New Jersey, shall furnish forthwith, when requested so to do by said board of health, or any inspector or officer thereof, a true statement, in writing upon blanks to be supplied by said board of health, setting forth 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 persons or customers to whom such persons selling said milk in said city shall supply or deliver the same.

2. Be it further ordained, that such statements in writing shall be signed by the person selling such milk in said city to whom the same shall be tendered.

3. Be it further ordained, that it shall be the duty of every person engaged in selling milk in said city to notify, in writing, said board of health immediately upon changing the source of supply of said milk of such change, and such notice shall also state the name or names of persons supplying said milk and the locality from which the same is procured.

4. Be it further ordained, that no person shall sell or deliver, or have in possession for sale, in the [name of place] any milk which has been watered or adulterated, or which contains any unhealthful ingredient, constituent or substance, or which has been transported or stored in an unclean manner, or which is produced from cows which are kept or stabled under unhealthful conditions or which may be diseased.

5. Be it ordained, that any person or persons who shall violate any of the provisions of this ordinance shall be subject and liable to a fine of \$50.00.

6. Be it ordained, that this ordinance shall take effect immediately.

Adopted June 2, 1898.

Local boards of health are advised to proceed to prevent the sale of unwholesome milk under the authority contained in the acts above referred to, and to abstain from attempts to enforce the act approved March 10th, 1882, which permits the governing body in municipalities to require that licenses shall be issued to milk dealers, for it is customary in many localities to issue licenses for revenue to all tradesmen, under the provisions of the municipal charter or other statute, and consequently a conflict between the two license ordinances is, under these circumstances, sure to occur.

Dealers deny the right of local authorities to impose two license fees for selling milk, when all other merchants are permitted to engage in business after having paid but one fee.

Until within recent years, commercial considerations had sole attention in conducting the business of producing and selling milk, and adulteration consisted in defrauding the customer out of his full measure of milk and cream, either by the addition of water or by abstracting the fats, but with the discovery of the facility with which certain pestilential diseases may be conveyed by this food, a public demand has been created for uncontaminated milk—for clean milk. Among the many great achievements of the physiological laboratories during the last ten years, none has exceeded in value the demonstration of the dangers to the health of infants which lurk in unclean milk, and no hygienic measure has resulted in greater benefits to humanity than the care bestowed by physicians, mothers and nurses, during the past four or five years, upon the milk supplied to young children.

The following table shows unmistakably that powerful influences have been exerted for the reduction of the mortality rate among infants, and there is little reason to doubt that the use of milk, comparatively free from pathogenic bacteria, has been the most important

factor in diminishing the death-rate among this class of the population.

TABLE 32—DEATHS AMONG CHILDREN UNDER FIVE YEARS OF AGE IN NEW JERSEY PER 100,000 OF POPULATION FOR TWENTY YEARS, 1879-1898.

YEARS.	Population.	Number of deaths under five years.	Rate per 100,000 population.
1879.....	1,020,584	7,919	774.9
*1880.....	1,130,892	7,407	654.9
1881.....	1,160,275	7,617	656.4
1882.....	1,189,658	10,512	883.6
1883.....	1,209,048	8,710	724.0
1884.....	1,248,224	7,971	638.5
*1885.....	1,278,033	9,120	713.5
1886.....	1,310,431	8,537	651.4
1887.....	1,342,829	9,245	688.4
1888.....	1,375,227	10,508	764.0
1889.....	1,407,625	10,354	735.5
*1890.....	1,441,017	10,748	745.8
1891.....	1,478,784	10,685	722.5
1892.....	1,511,653	12,369	818.2
1893.....	1,538,799	11,307	735.4
1894.....	1,578,373	9,264	586.9
*1895.....	1,672,942	9,074	542.3
1896.....	1,718,543	9,643	561.1
1897.....	1,764,144	8,504	482.1
1898.....	1,810,008	7,283	402.3

\* Population of census year is shown in heavy type. Population of inter-census years estimated.

It is seen that a very marked decrease in deaths among children occurred in the year ending June 30th, 1894, and from that time until the close of the last statistical year the decrease in deaths among infants and young children has continued.

Doubtless these results are to be chiefly credited to the treatment which the milk has received after it has been received by the customer, but in a small proportion of cases the milk producer and dealer deserve a share of the praise.

Dairy men should, of course, lead in the effort to prevent the pollution of milk, and in a few instances there is evidence that the commercial instinct has begun to grasp the truth that the financial interest of milk producers and dealers will be served by supplying the market with milk which is produced, transported and handled under aseptic precautions. From many points of view there would be great advantage to the consumer in receiving his supply in the condition in which it was secreted by the cow, and he would be glad to substitute clean milk, at a high price, for the artificial purifying process which he now

depends upon to protect himself from the polluting additions which the milk receives in the course of careless treatment in the hands of the average dairyman and dealer. The Branchville incident (referred to elsewhere in this Report) shows that conditions are ripe for an outbreak of typhoid fever in the case of some dairy premises, and that if the essential germ is added to the regular daily supply of unclean water, a death-dealing disease is distributed widespread to the unsuspecting patrons of the dairy.

The sanitarian and the dairyman should be fast friends, for antagonism can only occur when the laws of health as well as the statutes are violated. Health officers recognize the demand which consumers are making for milk which is produced on clean premises, by clean persons, and which is cooled, stored, transported and sold under conditions which protect it against contamination. Pure water, and no other; ice from water which is fit to drink; healthy cattle; clean, well-lighted and well-ventilated stables; clean utensils; freedom from infectious diseases on the part of persons engaged in handling the milk—at least all of these features are imperatively required in conducting the modern dairy.

A new blank for recording dairy inspections has recently been prepared for the use of the inspectors of the State board of health, and a few examples of these records are here presented.

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

## RECORD OF DAIRY INSPECTION.

May 15th, 1898.

NAME OF DAIRYMAN—Fairfield Dairy Co. (Owner).

ADDRESS—Fairfield.

TOWNSHIP—Caldwell. COUNTY—Essex.

*Stable.*

1. Size of stable.....
2. Area of stable.....Cubic feet per cow.....
3. Stable well lighted? Yes. Many windows at rear.
4. Number and size of windows in stable.....
5. Material, construction and drainage of floor. Wood floor, with chert drops at rear of cattle. Drains into tight iron boxes, which dump into car twice per day.
6. Method and frequency of cleaning. Manure swept into boxes, as above described, twice or three times per day.
7. Floor ever washed? Yes, especially in manure drops.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? Yes.
9. Ever limewashed? No.

*Water-Supply.*

10. Source of water-supply for watering stock—Large, deep-seated spring, excellent water.
11. Distance of well from stable—No well in use.
12. Distance of well from manure pile—See 11.
13. Distance of well from privy vault—See 11.
14. Is well apparently liable to contamination? See 11.
15. Source of water-supply for washing utensils and cans? Same as that used for watering stock.
16. If from well, describe surroundings—See 11.
17. Was sample taken for analysis?..... Marks.....

*Cattle.*

18. Number of cows—450 to 475. Breed—No special breed.
19. State of health? Generally good. At present troubled with vaccinia.
20. Ever examined? Yes. By whom? W. Runge, V. S.
21. Date of last examination—Every week at present.
22. Cows groomed? Yes.
23. Amount, kind and quality of feed used—Sprouts, 10 lbs. Meal, 5 lbs. Ensilage, — lbs. All No. 1.
24. Cows pastured? Yes. 3 to 4 hours per day.

*Manure.*

25. How and where stored? Not stored.
26. How frequently removed? Twice per day.
27. Quantity of manure at time of this inspection—One wagon load.

*Utensils.*

28. How washed and dried? With hot water and caustic soda, then rinsed in pure water. Dried by draining after being sterilized.
29. Where are the utensils washed? In wash-room at milk-house.
30. Any appliance for sterilizing cans, pails and dippers? Yes. Put in steam-chest at 400° for 20 minutes.
31. Bottles—how washed and dried? Same process as other utensils.

*Collection of Milk.*

32. Quantity of milk produced daily? About 3,600 quarts.
33. Are milkers' hands washed before milking? Always.
34. Are clean garments put on? Yes.
35. Udders of cows cleaned? Yes. How? If dirty with manure, washed; if not, rubbed with clean cloth.
36. When pail is full of milk what is done with it? Put in can.
37. Where does the can stand? At head of stable.
38. Is can kept covered? Yes.
39. Is milk cooled? Yes. How? Run over pipes which conduct cold, running water.
40. How long after milking? Ten to 20 minutes.

41. To what temperature? 40°.
42. Is milk bottled? Yes.
43. How long after cooling? Immediately.
44. Where is milk bottled? In bottling house.
45. Where is milk stored? In cold storage.
46. How long is milk stored before being shipped? Two to 12 hours.
47. Source of ice-supply.....
48. If shipped, to whom, and where? Shipped to distributing station at Montclair. From there to consumers.

*Distribution.*

49. Temperature of milk when delivered to customers? About 50°.
50. Quarts sold from cans? None.
51. Quarts sold in bottles? About 3,600.
52. Ever run short? No.
53. If so, where is supply obtained? See 52.
54. How many persons handle the milk? Thirty-five to forty.
55. All in good health? Yes; attended weekly by physician.
56. Date of last sickness among persons on dairy premises? See 55.
57. Diseases? See 55.
58. Remarks—Dairy strictly up-to-date and run on the most approved principles.

MARSHALL O. LEIGHTON,  
*Inspector.*

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

## RECORD OF DAIRY INSPECTION.

September 20th, 1898.

NAME OF DAIRYMAN—W. H. and R. S. Francisco (Owners).  
ADDRESS—Caldwell.  
TOWNSHIP—Caldwell. COUNTY—Essex.

*Stable.*

1. Size of stable. 100 x 30 x 8 and 90 x 30 x 8.
2. Area of stable.....Cubic feet per cow. 400 feet (ap.)
3. Stable well lighted? Yes.
4. Number and size of windows in stable—8 in one, 7 in other. 3 feet by 6 feet.
5. Material, construction and drainage of floor—Chert. Slopes to drops from both sides, then runs to end where there is a conduit.
6. Method and frequency of cleaning—Manure removed, then swept till dry.
7. Floor ever washed? Yes.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? No.
9. Ever hnewashed? Yes.

*Water-Supply.*

10. Source of water-supply for watering stock—Two wells, one driven, one dug.

11. Distance of well from stable—500 feet and 1,200 feet.
12. Distance of well from manure pile—None.
13. Distance of well from privy vault—None.
14. Is well apparently liable to contamination? No.
15. Source of water-supply for washing utensils and cans—Well, dug.
16. If from well, describe surroundings—200 feet from wash-room, 30 feet above road. Slopes toward stable.
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of cows—110. Breed.....
19. State of health—Uncertain. Herd constantly changing.
20. Ever examined? Yes. By whom? Fresk Harrison.
21. Date of last examination—July, 1898.
22. Cows groomed? Yes.
23. Amount, kind and quality of feed used—Corn meal, middlings and oil meal. 6 quarts.
24. Cows pastured? Yes.

*Manure.*

25. How and where stored? Not stored.
26. How frequently removed? Every day.
27. Quantity of manure at time of this inspection—None.

*Utensils.*

28. How washed and dried? Scoured in hot soda water, then rinsed.
29. Where are the utensils washed? In wash-room.
30. Any appliance for sterilizing cans, pails and dippers? Yes. Large steam chest.
31. Bottles—how washed and dried? Same as cans, than drained and sterilized.

*Collection of Milk.*

32. Quantity of milk produced daily? 600 to 800 quarts.
33. Are milkers' hands washed before milking? Yes.
34. Are clean garments put on? Yes.
35. Udders of cows cleaned? Yes. How? Rubbed with brush and cloth.
36. When pail is full of milk what is done with it? Put in can.
37. Where does the can stand? In yard.
38. Is can kept covered? Yes.
39. Is milk cooled? Yes. How? In tank of ice-water.
40. How long after milking? As soon as can is full.
41. To what temperature? 40°.
42. Is milk bottled? Yes.
43. How long after cooling? Immediately.
44. Where is milk bottled? In special house.
45. Where is milk stored? In boxes.
46. How long is milk stored before being shipped? 4 to 12 hours.
47. Source of ice-supply—Ponds in vicinity.
48. If shipped, to whom, and where? Montclair distributing station.

*Distribution.*

49. Temperature of milk when delivered to customers—55°.
50. Quarts sold from cans? None.
51. Quarts sold in bottles? 600.
52. Ever run short? No.
53. If so, where is supply obtained? See 52.
54. How many persons handle the milk? 8.
55. All in good health? Yes.
56. Date of last sickness among persons on dairy premises? See 55.
57. Diseases? See 55.
58. Remarks—Excellent equipment.

M. O. LEIGHTON,  
*Inspector.*

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

## RECORD OF DAIRY INSPECTION.

September 5th, 1898.

NAME OF DAIRYMAN—Harry Alvord (Owner).  
ADDRESS—Roseland.  
TOWNSHIP—Caldwell. COUNTY—Essex.

*Stable.*

1. Size of stable—30 by 20 by 14.
2. Area of stable.....Cubic feet per cow. 700 (ap.)
3. Stable well lighted? No.
4. Number and size of windows in stable? None in tie-up.
5. Material, construction and drainage of floor—Wood, water-tight, on ground. Drains to one end of stable.
6. Method and frequency of cleaning—Manure removed daily.
7. Floor ever washed? No.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? No.
9. Ever limewashed? No.

*Water-Supply.*

10. Source of water-supply for watering stock—Pond, sometimes dry; well.
11. Distance of well from stable—250 feet.
12. Distance of well from manure pile—300 feet.
13. Distance of well from privy vault—60 feet.
14. Is well apparently liable to contamination? No.
15. Source of water-supply for washing utensils and cans—Well above described.
16. If from well, describe surroundings—10 feet from house, on level land.
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of cows—12. Breed.....
19. State of health—Good.
20. Ever examined? Yes. By whom? R. B. Smith, V. S.

21. Date of last examination—May.
22. Cows groomed? Yes.
23. Amount, kind and quality of feed used—Bran, meal and sprouts, 8 quarts.
24. Cows pastured? Yes.

*Manure.*

25. How and where stored? Next to stable.
26. How frequently removed? When convenient.
27. Quantity of manure at time of inspection—10 cubic yards.

*Utensils.*

28. How washed and dried? In milk house of McLellan Bros. In boiling water. No soda or soap.
29. Where are the utensils washed? See 28.
30. Any appliances for sterilizing cans, pails and dippers? No.
31. Bottles—how washed and dried? Same as other utensils.

*Collection of Milk.*

32. Quantity of milk produced daily—90 to 110 quarts.
33. Are milkers' hands washed before milking? Yes.
34. Are clean garments put on? No.
35. Udders of cows cleaned? No. How?.....
36. When pail is full of milk what is done with it? Put in can.
37. Where does the can stand? In barn floor.
38. Is can kept covered? Yes, with strainer.
39. Is milk cooled? Yes. How? In tub of well-water.
40. How long after milking? 1 hour.
41. To what temperature? 60°.
42. Is milk bottled? Yes.
43. How long after colling? 4 to 16 hours.
44. Where is milk bottled? At McLellan Bros.' depot.
45. Where is milk stored? In iced boxes.
46. How long is milk stored before being shipped? Not shipped.
47. Source of ice-supply.....
48. If shipped, to whom, and where?.....

*Distribution.*

49. Temperature of milk when delivered to customers?.....
50. Quarts sold from cans? 70.
51. Quarts sold in bottles? 25 to 35.
52. Ever run short? No.
53. If so, where is supply obtained?.....
54. How many persons handle the milk? 4.
55. All in good health? Yes.
56. Date of last sickness among persons on dairy premises?.....
57. Diseases?.....
58. Remarks—Unsatisfactory.

M. O. LEIGHTON,  
*Inspector.*

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

## RECORD OF DAIRY INSPECTION.

September 9th, 1898.

NAME OF DAIRYMAN—A. R. Force (Owner).

ADDRESS—Livingston.

TOWNSHIP—Livingston. COUNTY—ESSEX.

*Stable.*

1. Size of stable—27 x 14 x 8.
2. Area of stable.....Cubic feet per cow—378.
3. Stable well lighted? No.
4. Number and size of windows in stable—One, 15 inches by 30 inches.
5. Material, construction and drainage of floor—Wood, water-tight. Drains to one end, thence to cesspool.
6. Method and frequency of cleaning—Manure removed every day in summer season.
7. Floor ever washed? No.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust—Generally in good condition.
9. Ever limewashed? Yes.

*Water-Supply.*

10. Source of water-supply for watering stock—Springs and running brook.
11. Distance of well from stable—400 feet.
12. Distance of well from manure pile—300 feet.
13. Distance of well from privy vault—200 feet.
14. Is well apparently liable to contamination? No.
15. Source of water-supply for washing utensils and cans—Well, dug.
16. If from well, describe surroundings—In rear of house on same level as stable.
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of Cows—8. Breed—Mixture.
19. State of health—Good at present. Have had vaccinia.
20. Ever examined? Yes. By whom? R. B. Smith, V. S.
21. Date of last examination—May-June, 1898.
22. Cows groomed? Yes, from appearance.
23. Amount, kind and quality of feed used—Meal, 3 quarts. Bran, 5 quarts. Wheat middlings, 1 to 2 quarts.
24. Cows pastured? Yes.

*Manure.*

25. How and where stored? Not stored.
26. How frequently removed? Every day.
27. Quantity of manure at time of this inspection—None.

*Utensils.*

28. How washed and dried? Hot soda water, then rinsed with pure water, then drained in open air.
29. Where are the utensils washed? In special room.
30. Any appliance for sterilizing cans, pails and dippers? Yes. Large boiler.
31. Bottles—how washed and dried? Same as other utensils.

*Collection of Milk.*

32. Quantity of milk produced daily? 80 to 90 quarts.
33. Are milkers' hands washed before milking? Yes.
34. Are clean garments put on? Yes.
35. Udders of cows cleaned? Yes. How? Rubbed with dry cloth.
36. When pail is full of milk what is done with it? Put on cooler.
37. Where does can stand? No can.
38. Is can kept covered? See 37.
39. Is milk cooled? Yes. How? Patent cooler and aerator.
40. How long after milking? Immediately.
41. To what temperature?.....
42. Is milk bottled? Yes.
43. How long after cooling? At once.
44. Where is milk bottled? In special room.
45. Where is milk stored? In ice-boxes.
46. How long is milk stored before being shipped? Not shipped.
47. Source of ice-supply. Artificial.
48. If shipped, to whom and where?.....

*Distribution.*

49. Temperature of milk when delivered to customers?.....
50. Quarts sold from cans? None.
51. Quarts sold in bottles? 25 to 30, in Montclair.
52. Ever run short? Yes.
53. If so, where is supply obtained? Of neighbors.
54. How many persons handle the milk? Two.
55. All in good health? Apparently.
56. Date of last sickness among persons on dairy premises?.....
57. Diseases?.....
58. Remarks.....

MARSHALL O. LEIGHTON,  
Inspector.

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

RECORD OF DAIRY INSPECTION.

May 20th, 1898.

NAME OF DAIRYMAN—R. Trieblecock (Owner).

ADDRESS—Upper Montclair.

TOWNSHIP—Richfield. COUNTY—Passaic.



*Stable.*

1. Size of stable—Barn, 35 by 23 by 30.
2. Area of stable—35 feet by 23 feet.....Cubic feet per cow.....
3. Stable well lighted? No.
4. Number and size of windows in stable.....
5. Material, construction and drainage of floor—Wood, leaky; no grades, no drainage.
6. Method and frequency of cleaning—Probably every day. Manure removed with shovel. Thrown out.
7. Floor ever washed? No.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? No.
9. Ever limewashed? Never.

*Water-Supply.*

10. Source of water-supply for watering stock—Spring on mountain. Only excellent feature of the dairy.
11. Distance of well from stable? No well.
12. Distance of well from manure pile.....
13. Distance of well from privy vault.....
14. Is well apparently liable to contamination?.....
15. Source of water-supply for washing utensils and cans.....
16. If from well, describe surroundings—Spring above mentioned.
17. Was sample taken for analysis?..... Marks.....

*Cattle.*

18. Number of cows..... Breed.....
19. State of health—Unknown.
20. Ever examined?..... By whom?.....
21. Date of last examination.....
22. Cows groomed? Not often.
23. Amount, kind and quality of feed used—Brewer's grains, bran and meal. Quantity indefinite.
24. Cows pastured? Yes.

*Manure.*

25. How and where stored? In stable yard.
26. How frequently removed? Every spring.
27. Quantity of manure at time of this inspection—About half of previous winter's accumulation.

*Utensils.*

28. How washed and dried? Scoured with soap and then rinsed in hot water.
29. Where are the utensils washed? On front stoop.
30. Any appliance for sterilizing cans, pails and dippers? No.
31. Bottles—how washed and dried? Same as other utensils.

*Collection of Milk.*

32. Quantity of milk produced daily? 55 quarts.
33. Are milkers' hands washed before milking? Yes.
34. Are clean garments put on? No.
35. Udders of cows cleaned? Yes. How? Washed when soiled or rubbed when dry.
36. When pail is full of milk what is done with it? Put in can.
37. Where does the can stand? On barn floor.
38. Is can kept covered? Yes.
39. Is milk cooled? Yes. How? Can is lowered into a well used for no other purpose.
40. How long after milking? About one-half hour.
41. To what temperature? 60°.
42. Is milk bottled? Yes.
43. How long after cooling? 14 hours.
44. Where is milk bottled? On front stoop.
45. Where is milk stored? Not stored in bottles.
46. How long is milk stored before being shipped?.....
47. Source of ice-supply.....
48. If shipped, to whom, and where?.....

*Distribution.*

49. Temperature of milk when delivered to customers? About 60°.
50. Quarts sold from cans? Yes, about 30.
51. Quarts sold in bottles? About 25.
52. Ever run short? Yes.
53. If so, where is supply obtained? At neighbors.
54. How many persons handle the milk? One.
55. All in good health? Yes.
56. Date of last sickness among persons on dairy premises?.....
57. Diseases?.....
58. Remarks—Poorly equipped, poorly managed. Milk poor and dirty.

M. O. LEIGHTON,  
Inspector.

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.  
RECORD OF DAIRY INSPECTION.

May 20th, 1898.

NAME OF DAIRYMAN—Geo. Taylor (Owner).  
ADDRESS—Cedar Grove.  
TOWNSHIP—Caldwell. COUNTY—Essex.

*Stable.*

1. Size of stable—58 x 14 x 7 feet.
2. Area of stable—5,684 feet. Cubic feet per cow—334.
3. Stable well lighted? No.
4. Number and size of windows in stable.....

5. Material, construction and drainage of floor—Entirely of wood. Drops water-tight. Outlet at one end for all liquid matter. No air space beneath.
6. Method and frequency of cleaning—Manure removed 20 feet each day. Lime and horse manure for deodorizer.
7. Floor ever washed? No.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? Yes, at present.
9. Ever limewashed? Yes.

*Water-Supply.*

10. Source of water-supply for watering stock—Brook in neighboring pasture, No apparent pollution.
11. Distance of well from stable—One-fourth mile.
12. Distance of well from manure pile.....
13. Distance of well from privy vault.....
14. Is well apparently liable to contamination? No.
15. Source of water-supply for washing utensils and cans—Well mentioned above.
16. If from well, describe surroundings—On knoll, 50 feet above brook, on side of hill 60 feet from house.
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of cows—17. Breed.....
19. State of health—One had pneumonia recently; remainder rugged.
20. Ever examined? Yes. By whom? Jas. McDonough, V. S.
21. Date of last examination—April 7th, 1898.
22. Cows groomed? Yes, when noticeably dirty.
23. Amount, kind and quality of feed used.....
24. Cows pastured? Yes, all day at present.

*Manure.*

25. How and where stored? In pile 20 feet from stable.
26. How frequently removed? At least once per month.
27. Quantity of manure at time of inspection—About two cubic yards.

*Utensils.*

28. How washed and dried? Scoured first with brush in hot water and soap, then rinsed in cool water.
29. Where are the utensils washed? In wash-room.
30. Any appliance for sterilizing cans, pails and dippers? No.
31. Bottles—how washed and dried? Brushed with bottle brush in soap solution, rinsed and then boiled.

*Collection of Milk.*

32. Quantity of milk produced daily? 120 quarts.
33. Are milkers' hands washed before milking? Owner says yes.
34. Are clean garments put on? Probably not.

35. Udders of cows cleaned? Yes. How? Rubbed with hands when not soiled; washed when soiled.
36. When pail is full of milk, what is done with it? Put into can.
37. Where does the can stand? In floor, front of cows.
38. Is can kept covered? No; a strainer is placed thereon.
39. Is milk cooled? Yes. How? As soon as milking is done it is put into ice-water tank.
40. How long after milking? 45 to 60 minutes.
41. To what temperature? About 40°.
42. Is milk bottled? Yes.
43. How long after cooling? 3 to 4 hours.
44. Where is milk bottled? In bottling house.
45. Where is milk stored? In boxes, bottled.
46. How long is milk stored before being shipped? 9 to 20 hours.
47. Source of ice-supply.....
48. If shipped, to whom, and where?.....

*Distribution.*

49. Temperature of milk when delivered to customers? About 50°.
50. Quarts sold from cans? None.
51. Quarts sold in bottles? 120.
52. Ever run short? No.
53. If so, where is supply obtained?
54. How many persons handle the milk? Three.
55. All in good health? Yes.
56. Date of last sickness among persons on dairy premises? Does not know.
57. Diseases?.....
58. Remarks—Good stock, poor stable, well managed, good milk.

M. O. LEIGHTON,

*Inspector.*

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

RECORD OF DAIRY INSPECTION.

July 20th, 1898.

NAME OF DAIRYMAN—C. H. Hoffman (Owner).  
 ADDRESS—Delivery through C. D. Van Idestine.  
 TOWNSHIP—W. Livingston. COUNTY—Essex.

*Stable.*

1. Size of stable—30 x 46 x 8 feet.
2. Area of stable—11,040 cubic feet. Cubic feet per cow—525.
3. Stable well lighted? Yes.
4. Number and size of windows in stable—6 windows, 30 x 30 inches.
5. Material, construction and drainage of floor—Wood floor. Tarred drops. Watertight. About 4 feet above ground. Drops drained to pipes.
6. Method and frequency of cleaning—Cleaned once per day at this season. Several times per day in winter.

7. Floor ever washed? No.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? Yes.
9. Ever limewashed? Yes; every two months.

*Water-Supply.*

10. Source of water-supply for watering stock—From well and springs in pasture.
11. Distance of well from stable—155 feet.
12. Distance of well from manure pile—150 feet.
13. Distance of well from privy vault—200 feet.
14. Is well apparently liable to contamination? No.
15. Source of water-supply for washing utensils and cans—Well above mentioned.
16. If from well, describe surroundings—Near road. Higher than buildings. 15 feet from dwelling.
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of cows—21. Breed—Grade Jersey and Holstein.
19. State of health—Excellent.
20. Ever examined? Yes. By whom? R. B. Smith, V. S.
21. Date of last examination—May, 1898.
22. Cows groomed? Yes.
23. Amount, kind and quality of feed used—Six quarts oats, meal and bran. Good quality fodder corn at present.
24. Cows pastured? Yes; all day in this season.

*Manure.*

25. How and where stored? In yard 10 feet from stable.
26. How frequently removed? Once per month.
27. Quantity of manure at time of this inspection—About 5 cubic yards. Were moving it at time of inspection.

*Utensils.*

28. How washed and dried? Washed with hot water, soda and soap. Then steamed. Dried by draining in open air under shed.
29. Where are the utensils washed? In shed.
30. Any appliance for sterilizing cans, pails and dippers? Large boiler for pails and dippers.
31. Bottles—how washed and dried? Same as above.

*Collection of Milk.*

32. Quantity of milk produced daily? 140 quarts.
33. Are milkers' hands washed before milking? Yes.
34. Are clean garments put on? Yes.
35. Udders of cows cleaned? Yes. How? By rubbing with cloth; washed if stained.
36. When pail is full of milk what is done with it? Pat in can.
37. Where does the can stand? In barn floor, 50 feet away.

38. Is can kept covered? Yes.
39. Is milk cooled? Yes. How? In ice tank, where cans are partly submerged.
40. How long after milking? Three-quarters of an hour, or as soon as done.
41. To what temperature? About 35°.
42. Is milk bottled? Yes.
43. How long after cooling? Mornings, 14 hours; nights, 2 hours.
44. Where is milk bottled? In Caldwell, at house.
45. Where is milk stored? In ice-boxes in Caldwell.
46. How long is milk stored before being shipped? 12 to 14 hours.
47. Source of ice-supply—From Passaic river.
48. If shipped, to whom and where? Not shipped.

*Distribution.*

49. Temperature of milk when delivered to customers? 40° to 55°.
50. Quarts sold from cans? 100.
51. Quarts sold in bottles? 50.
52. Ever run short? Yes.
53. If so, where is supply obtained? In Bloomfield.
54. How many persons handle the milk? Five.
55. All in good health? Yes.
56. Date of last sickness among persons on dairy premises? 1893.
57. Diseases? Whooping cough.
58. Remarks—A clean, wholesome dairy.

MARSHALL O. LEIGHTON,  
*Inspector.*

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

RECORD OF DAIRY INSPECTION.

July 20th, 1898.

NAME OF DAIRYMAN—Zenias Harrison (Owner).

ADDRESS—Roeland.

TOWNSHIP—Caldwell. COUNTY—Essex.

*Stable.*

1. Size of stable—65 x 18 x 6½.
2. Area of stable ..... Cubic feet per cow—381.
3. Stable well lighted? No.
4. Number and size of windows in stable—Three 30 x 14, three 30 x 36.
5. Material, construction and drainage of floor—Of wood, water-tight, wooden drops. Drains toward one end to ditches.
6. Method and frequency of cleaning—At this time of year, once per day. Shoveled and swept.
7. Floor ever washed? No.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? No.
9. Ever limewashed? No.

*Water-Supply.*

10. Source of water-supply for watering stock—Artesian well and pond.
11. Distance of well from stable—100 feet.
12. Distance of well from manure pile—130 feet.
13. Distance of well from privy vault—300 feet.
14. Is well apparently liable to contamination? No.
15. Source of water-supply for washing utensils and cans—Well above mentioned.
16. If from well, describe surroundings—At top of hill, below house, above stable.
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of cows—20. Breed.....
19. State of health—Good.
20. Ever examined? Yes. By whom? R. B. Smith, V. S.
21. Date of last examination—May, 1898.
22. Cows groomed? Yes.
23. Amount, kind and quality of feed used—Screenings, meal and bran.
24. Cows pastured? All day at present.

*Manure.*

25. How and where stored? Next to stable-yard.
26. How frequently removed? No regular time.
27. Quantity of manure at time of this inspection—About 10 cubic yards.

*Utensils.*

28. How washed and dried? Scoured in hot water and soda, then rinsed in clear hot water.
29. Where are the utensils washed? In wash-room.
30. Any appliance for sterilizing cans, pails and dippers—Large boiler for pails and dippers.
31. Bottles—how washed and dried? Same as other utensils.

*Collection of Milk.*

32. Quantity of milk produced daily?.....
33. Are milkers' hands washed before milking? Yes.
34. Are clean garments put on?.....
35. Udders of cows cleaned? Yes. How? Rubbed with clean dry cloth.
36. When pail is full of milk, what is done with it? Put in receiving can.
37. Where does the can stand? On stable floor.
38. Is can kept covered? Not always.
39. Is milk cooled? In spring. How? Carried down as soon as drawn.
40. How long after milking? As soon as all is done.
41. To what temperature?.....
42. Is milk bottled? Yes.
43. How long after cooling?.....
44. Where is milk bottled? In Montclair station.

45. Where is milk stored? In Montclair station.
46. How long is milk stored before being shipped? 10 to 24 hours.
47. Source of ice-supply? Pond above mentioned.
48. If shipped, to whom, and where? From Caldwell to Montclair, thence to Newark.

*Distribution.*

49. Temperature of milk when delivered to customers?.....
50. Quarts sold from cans?.....
51. Quarts sold in bottles? 40.
52. Ever run short? No.
53. If so, where is supply obtained?.....
54. How many persons handle the milk? Four.
55. All in good health? Yes.
56. Date of last sickness among persons on dairy premises? 1890.
57. Diseases? Typhoid fever.
58. Remarks.....

M. O. LEIGHTON,  
*Inspector.*

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

## RECORD OF DAIRY INSPECTION.

July 20th, 1898.

NAME OF DAIRYMAN—Jacob Rausch (Tenant).  
ADDRESS—Roseland.  
TOWNSHIP—Caldwell. COUNTY—Essex.

*Stable.*

1. Size of stable—18 x 20 x 10 and 18 x 20 x 8.
2. Area of stable..... Cubic feet per cow—360.
3. Stable well lighted? No.
4. Number and size of windows in stable—One, 30 x 30 inches.
5. Material, construction and drainage of floor—Wood, water-tight, drop-tarred, drain to side of stable.
6. Method and frequency of cleaning—Swept and shovelled every day at this season.
7. Floor ever washed? Yes.
8. Are sidewall, ceilings and ledges kept free from cobwebs and dust? Quite free.
9. Ever limewashed? Yes.

*Water-Supply.*

10. Source of water-supply for watering stock—Springs, well and brook.
11. Distance of well from stable—400 feet.
12. Distance of well from manure pile—400 feet.
13. Distance of well from privy vault—150 feet.
14. Is well apparently liable to contamination? No.

15. Source of water-supply for washing utensils and cans—Well above mentioned.
16. If from well, describe surroundings—In large yard (uncultivated), between house and road.
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of cows—15. Breed.....
19. State of health—Good.
20. Ever examined? Yes. By whom? R. B. Smith, V. S.
21. Date of last examination—May, 1898.
22. Cows groomed? Yes.
23. Amount, kind and quality of feed used.....
24. Cows pastured? Yes.

*Manure.*

25. How and where stored? Near stable.
26. How frequently removed? Every month.
27. Quantity of manure at time of this inspection—One-third cubic yard.

*Utensils.*

28. How washed and dried? Scoured in hot water and soda, then rinsed in boiling water.
29. Where are the utensils washed? In kitchen.
30. Any appliance for sterilizing cans, pails and dippers? No.
31. Bottles—how washed and dried? Same as cans, at Verona Station.

*Collection of Milk.*

32. Quantity of milk produced daily? 160 quarts.
33. Are milkers' hands washed before milking? Yes.
34. Are clean garments put on? Yes.
35. Udders of cows cleaned? Yes. How? Washed with sponge and wiped dry.
36. When pail is full of milk what is done with it? Put in can.
37. Where does the can stand? Outside of stable.
38. Is can kept covered? Yes.
39. Is milk cooled? Yes. How? In spring, one-quarter mile away.
40. How long after milking? Taken down immediately.
41. To what temperature?.....
42. Is milk bottled? Yes.
43. How long after cooling? Two to 14 hours.
44. Where is milk bottled? In Verona Station, bottling-room.
45. Where is milk stored? In Verona Station.
46. How long is milk stored before being shipped? Two to 12 hours.
47. Source of ice-supply—Passaic river.
48. If shipped, to whom, and where? C. W. Haight, Verona, N. J.

*Distribution.*

49. Temperature of milk when delivered to customers?.....
50. Quarts sold from cans? None.
51. Quarts sold in bottles? 160.
52. Ever run short? Yes.
53. If so, where is supply obtained? Of H. F. Backus & Co.
54. How many persons handle the milk? Six.
55. All in good health? Yes.
56. Date of last sickness among persons on dairy premises?.....
57. Diseases?.....
58. Remarks.....

MARSHALL O. LEIGHTON,  
Inspector.

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.  
RECORD OF DAIRY INSPECTION.

July 8th, 1898.

NAME OF DAIRYMEN—Wm. Small and E. O. Wettyn (Owners).  
ADDRESS—Cedar Grove.  
TOWNSHIP—Caldwell. COUNTY—Essex.

*Stable.*

1. Size of stable—35 x 18 x 8 feet.
2. Area of stable—5040. Cubic feet per cow—458.
3. Stable well lighted? Yes.
4. Number and size of windows in stable—Four, about 20 x 20 inches.
5. Material, construction and drainage of floor—Wood floor upon ground. Drains to middle, then conducted to yard.
6. Method and frequency of cleaning—Manure removed. Horse manure then put in as absorbent.
7. Floor ever washed? Yes.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? Yes.
9. Ever limewashed? Yes.

*Water-Supply.*

10. Source of water-supply for watering stock—Springs and brook.
11. Distance of well from stable—Well near stable not used.
12. Distance of well from manure pile—One-half mile.
13. Distance of well from privy vault—800 feet.
14. Is well apparently liable to contamination? No.
15. Source of water-supply for washing utensils and cans—Well.
16. If from well, describe surroundings—At foot of hill under bottling house.
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of cows—11. Breed.....
19. State of health—Excellent.
20. Ever examined? Yes. By whom? Dr. Jas. McDonough.
21. Date of last examination—May, 1898.
22. Cows groomed? Yes.
23. Amount, kind and quality of feed used—Meal, malt, sprouts and green corn, 8 quarts per day.
24. Cows pastured? Yes.

*Manure.*

25. How and where stored? In field.
26. How frequently removed? Every day.
27. Quantity of manure at time of this inspection—None.

*Utensils.*

28. How washed and dried? Scoured in hot water and soap powder, then rinsed and boiled.
29. Where are the utensils washed? In bottling house.
30. Any appliance for sterilizing cans, pails and dippers? No.
31. Bottles—how washed and dried? Brushed out in soap solution, then boiled.

*Collection of Milk.*

32. Quantity of milk produced daily? 140 quarts.
33. Are milkers' hands washed before milking? Yes.
34. Are clean garments put on? Yes.
35. Udders of cows cleaned? Yes. How? By rubbing with cloth.
36. When pail is full of milk what is done with it? Put in can.
37. Where does the can stand? Outside in tub of water.
38. Is can kept covered? Yes.
39. Is milk cooled? Yes. How? In tub above mentioned.
40. How long after milking? Immediately.
41. To what temperature?.....
42. Is milk bottled? Yes.
43. How long after cooling? Several hours.
44. Where is milk bottled? In bottling-house.
45. Where is milk stored? In same house.
46. How long is milk stored before being shipped? 12 to 24 hours.
47. Source of ice-supply—Artificial.
48. If shipped, to whom and where? Brought to Montclair and retailed.

*Distribution.*

49. Temperature of milk when delivered to customers?.....
50. Quarts sold from cans? 140.
51. Quarts sold in bottles? .....
52. Ever run short? No.
53. If so, where is supply obtained?.....

54. How many persons handle the milk? Two.
55. All in good health? Yes.
56. Date of last sickness among persons on dairy premises? July 1.
57. Diseases? Malaria.
58. Remarks.....

M. O. LEIGHTON,  
*Inspector.*

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

## RECORD OF DAIRY INSPECTION.

May 18th, 1898.

NAME OF DAIRYMAN—Fred Feerst (Owner).  
ADDRESS—Montclair, N. J.  
TOWNSHIP—West Orange. COUNTY—Essex.

*Stable.*

1. Size of stable—40 x 9 x 7 and 20 x 15 x 8.
2. Area of stable.....Cubic feet per cow—460.
3. Stable well lighted? No.
4. Number and size of windows in stable? .....
5. Material, construction and drainage of floor—Wood, built on ground, and drains to one end.
6. Method and frequency of cleaning—Manure shoveled every day, and sawdust spread out.
7. Floor ever washed? No.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? Yes.
9. Ever limewashed? Yes.

*Water-Supply.*

10. Source of water-supply for watering stock—Deep-seated spring and artesian well.
11. Distance of well from stable—600 feet.
12. Distance of well from manure pile—320 feet.
13. Distance of well from privy vault—400 feet.
14. Is well apparently liable to contamination? No.
15. Source of water-supply for washing utensils and cans—Same well.
16. If from well, describe surroundings—30 feet above house, in orchard.
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of cows—23. Breed.....
19. State of health—Two recently condemned and killed.
20. Ever examined? Yes. By whom? Dr. Fred Harrison.
21. Date of last examination—May, 1898.
22. Cows groomed? Yes.
23. Amount, kind and quality of feed used—Screenings, Indian meal and bran, 6 quarts.
24. Cows pastured? Yes.

*Manure.*

25. How and where stored? Near yard in heap.
26. How frequently removed? Once per month.
27. Quantity of manure at time this of inspection—6 cubic yards.

*Utensils.*

28. How washed and dried? Scoured in hot water and "Gold Dust," then rinsed and dried.
29. Where are the utensils washed? In bottling room.
30. Any appliance for sterilizing cans, pails and dippers? No.
31. Bottles—how washed and dried? Same, then boiled.

*Collection of Milk.*

32. Quantity of milk produced daily—100 quarts.
33. Are milkers' hands washed before milking? Yes.
34. Are clean garments put on? Yes.
35. Udders of cows cleaned? Yes. How? By washing, then rubbing dry.
36. When pail is full of milk what is done with it? Put in can.
37. Where does the can stand? Just outside door.
38. Is can kept covered? No.
39. Is milk cooled? Yes. How? Submerging in water and stirring.
40. How long after milking? Three-quarters of an hour.
41. To what temperature?.....
42. Is milk bottled? Yes.
43. How long after colling? As soon as cool.
44. Where is milk bottled? In bottling-house.
45. Where is milk stored? In bottles, iced.
46. How long is milk stored before being shipped? 14 to 30 hours.
47. Source of ice-supply—Artificial.
48. If shipped, to whom, and where?.....

*Distribution.*

49. Temperature of milk when delivered to customers?.....
50. Quarts sold from cans? 100.
51. Quarts sold in bottles? .....
52. Ever run short? Yes.
53. If so, where is supply obtained? H. F. Backus.
54. How many persons handle the milk? Three.
55. All in good health? Yes.
56. Date of last sickness among persons on dairy premises?.....
57. Diseases? .....
58. Remarks.....

M. O. LEIGHTON,  
*Inspector.*

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

## RECORD OF DAIRY INSPECTION.

September 30th, 1898.

NAME OF DAIRYMAN—J. H. Cadmus (Owner).  
ADDRESS—Caldwell.  
TOWNSHIP—Caldwell. COUNTY—Essex.

*Stable.*

1. Size of stable—30 x 17 x 7.
2. Area of stable—3,570. Cubic feet per cow—178.
3. Stable well lighted? Yes.
4. Number and size of windows in stable—One side all windows.
5. Material, construction and drainage of floor—Wood and earth. Slopes to drops, which drain at both ends.
6. Method and frequency of cleaning—Manure removed as well as possible. Rock plaster used.
7. Floor ever washed? No.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? No.
9. Ever limewashed? Yes.

*Water-Supply.*

10. Source of water-supply for watering stock—Running brook. No apparent pollution.
11. Distance of well from stable—300 feet.
12. Distance of well from manure pile—No pile.
13. Distance of well from privy vault—80 feet.
14. Is well apparently liable to contamination? No.
15. Source of water-supply for washing utensils and cans—Well above described.
16. If from well, describe surroundings.....
17. Was sample taken for analysis?..... Marks.....

*Cattle.*

18. Number of cows—20. Breed.....
19. State of health—Excellent.
20. Ever examined? Yes. By whom? Drs. Harrison and Smith.
21. Date of last examination—July, 1898.
22. Cows groomed? Yes.
23. Amount, kind and quality of feed used—Meal and bran.
24. Cows pastured? Yes.

*Manure.*

25. How and where stored? Not stored.
26. How frequently removed? Every 2 or 3 days.
27. Quantity of manure at time of this inspection—None.

*Utensils.*

28. How washed and dried? Scrubbed in hot soda water, rinsed and drained.
29. Where are the utensils washed? In wash-room.

30. Any appliance for sterilizing cans, pails and dippers? No.  
 31. Bottles—how washed and dried? Boiled in soda-water, scrubbed, then boiled in pure water.

*Collection of Milk.*

32. Quantity of milk produced daily? 150 to 160 quarts.  
 33. Are milkers' hands washed before milking? Yes.  
 34. Are clean garments put on? Yes.  
 35. Udders of cows cleaned? Yes. How? With sponge and dry cloth.  
 36. When pail is full of milk what is done with it? Poured through strainer into can.  
 37. Where does the can stand? In yard.  
 38. Is can kept covered? Yes.  
 39. Is milk cooled? Yes. How? In ice-water tank.  
 40. How long after milking? About one hour.  
 41. To what temperature? 38° to 44°.  
 42. Is milk bottled? Yes.  
 43. How long after cooling? Several hours.  
 44. Where is milk bottled? In bottling-house.  
 45. Where is milk stored? In bottling-house.  
 46. How long is milk stored before being shipped? 12 to 22 hours.  
 47. Source of ice-supply—Pond in vicinity.  
 48. If shipped, to whom, and where?.....

*Distribution.*

49. Temperature of milk when delivered to customers?.....  
 50. Quarts sold from cans? None.  
 51. Quarts sold in bottles? 150 to 160.  
 52. Ever run short? Yes.  
 53. If so, where is supply obtained? W. H. & R. S. Francisco.  
 54. How many persons handle the milk? Four.  
 55. All in good health? Yes.  
 56. Date of last sickness among persons on dairy premises? January, 1898.  
 57. Diseases? Cancer.  
 58. Remarks.....

M. O. LEIGHTON,  
*Inspector.*

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

RECORD OF DAIRY INSPECTION.

August 30th, 1898.

NAME OF DAIRYMAN—Geo. M. Canfield (Owner).  
 ADDRESS—Caldwell.  
 TOWNSHIP—Caldwell. COUNTY—Essex.

*Stable.*

1. Size of stable—40 x 150.  
 2. Area of stable.....Cubic feet per cow—600 to 700.  
 3. Stable well lighted? Yes.

4. Number and size of windows in stable—Twenty, 28 inches by 60 inches.  
 5. Material, construction and drainage of floor—Chert. Built upon ground. Drains into drops. Drops into cesspools.  
 6. Method and frequency of cleaning—Manure removed then "hosed" out.  
 7. Floor ever washed? Yes.  
 8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust—Yes.  
 9. Ever limewashed? No.

*Water-Supply.*

10. Source of water-supply for watering stock—Artesian well.  
 11. Distance of well from stable—300 feet.  
 12. Distance of well from manure pile—No pile.  
 13. Distance of well from privy vault—600 feet.  
 14. Is well apparently liable to contamination? No.  
 15. Source of water-supply for washing utensils and cans—Same.  
 16. If from well, describe surroundings—Driven through rock, next bottling-house.  
 17. Was sample taken for analysis?..... Marks.....

*Cattle.*

18. Number of Cows—40 to 50. Breed—Jersey, mainly.  
 19. State of health—Good.  
 20. Ever examined? Yes. By whom? Dr. Frederick Harrison.  
 21. Date of last examination—Every month.  
 22. Cows groomed? Yes.  
 23. Amount, kind and quality of feed used—Oats, corn, middlings, gluten feed and bran.  
 24. Cows pastured? Yes.

*Manure.*

25. How and where stored? In field.  
 26. How frequently removed? Every day.  
 27. Quantity of manure at time of this inspection—None.

*Utensils.*

28. How washed and dried? Scrubbed in hot soda water, rinsed twice.  
 29. Where are the utensils washed? In wash-room.  
 30. Any appliance for sterilizing cans, pails and dippers? Yes. Large steam chest.  
 31. Bottles—how washed and dried? Same as other utensils, then sterilized.

*Collection of Milk.*

32. Quantity of milk produced daily? About 400 quarts.  
 33. Are milkers' hands washed before milking? Yes.  
 34. Are clean garments put on? Yes.  
 35. Udders of cows cleaned? Yes. How? With sponge and towel.  
 36. When pail is full of milk what is done with it? Put in can.  
 37. Where does the can stand? Outside in receiving-house.  
 38. Is can kept covered? Yes.



39. Is milk cooled? Yes. How? Run over "Star cooler."  
 40. How long after milking? Immediately.  
 41. To what temperature? 40°.  
 42. Is milk bottled? Yes.  
 43. How long after cooling? Immediately.  
 44. Where is milk bottled? In bottling-house.  
 45. Where is milk stored? In ice-tank.  
 46. How long is milk stored before being shipped? 12 to 24 hours.  
 47. Source of ice-supply. Greenwood Lake.  
 48. If shipped, to whom and where?.....

*Distribution.*

49. Temperature of milk when delivered to customers? 50°.  
 50. Quarts sold from cans?.....  
 51. Quarts sold in bottles? 400 quarts.  
 52. Ever run short? No.  
 53. If so, where is supply obtained?  
 54. How many persons handle the milk? Four to six.  
 55. All in good health? Yes.  
 56. Date of last sickness among persons on dairy premises?.....  
 57. Diseases?.....  
 58. Remarks.....

MARSHALL O. LEIGHTON,  
*Inspector.*

**Sewerage** of towns proceeds but slowly, notwithstanding the well-established fact that the morbidity and mortality of a community is invariably improved by the construction of an efficient system of sewers. The first cost of these necessary works is the deterrent factor which restrains many municipalities from proceeding to build works which, when provided, add so much to the comfort and healthfulness of the inhabitants.

To be rid of the bother and expense attending the frequent excavation of cesspools, and to cease polluting the soil, should tempt every householder to break away from his conservative habit, at least in this particular.

The modern methods of sewage disposal enable every community, however situated, to adapt to its needs some one, or a combination of two or more of the various systems now in use for purifying waste fluids and rendering them innocuous.

TABLE 32—SHOWING PLACES IN NEW JERSEY HAVING PUBLIC WATER-SUPPLIES AND SHOWING WHICH OF THESE PLACES HAVE INTRODUCED SEWERS.

NAME OF PLACE.	County.	When introduced.	Separate or Combined.	Disposal.
Arlington	Hudson		Separate	Passaic river.
Asbury Park	Monmouth	1879	"	Ocean.
Atlantic City	Atlantic	1880	"	Tide water.
Atlantic Highlands	Monmouth		"	Tide water.
Bayonne	Hudson		Both	New York bay.
Beach Haven	Ocean		Combined	Tuckerton bay.
Belleville	Essex		"	Ocean.
Belmar	Monmouth		Separate	Delaware river.
Belvidere	Warren		Combined	"
Bergen Fields	Bergen		"	"
Beverly	Burlington		"	"
Blairstown	Warren		"	"
Bloomfield	Essex		Combined	Passaic river.
Beonton	Morris		"	"
Bordentown	Burlington		Combined	Delaware river.
Bound Brook	Somerset		Separate	Raritan river.
Breslin Park	Morris		"	"
Bridgeton	Cumberland		Under construction	Creek.
Burlington	Burlington		"	"
Camden	Camden	1860	Combined	Delaware river.
Cape May City	Cape May		"	Cape May creek.
Cape May C. H.	"		"	"
Carlstadt	Bergen		"	"
Carteret	Middlesex		"	"
Clayton	Gloucester		No sewers	"
Cliffside	Bergen		"	"
Clinton	Hunterdon		"	"
Clinton Township	Essex		"	"
Collingswood	Camden		"	"
Columbia Heights	Essex		"	"
Cranford	Union	1896	Separate	Rahway river.
Darlington	Monmouth		"	"
Deckertown	Sussex		No sewers	"
Delford	Bergen		No sewers	"
Dover	Morris		"	"
Dumont	Bergen		"	"
East Orange	Essex	1889	Separate	Passaic river.
East Rutherford	Bergen		"	"
Egg Harbor City	Atlantic		No sewers	"
Elizabeth	Union	1866	Combined	Elizabeth river and sound.
Englewood	Bergen	1887	Separate	Elizabeth creek.
Englewood Cliffs	"		"	"
Essex Fells	Essex		Separate	Purifying process.
Fairview	Bergen		"	"
Fanwood	Union		No sewers	"
Flemington	Hunterdon		"	Under construction.
Franklin Township	Essex		"	"
Freerhold	Monmouth	1892	Separate	Purifying process.
Garfield	Bergen		"	"
Glassboro	Gloucester		"	"
Glen Gardner	Hunterdon		No sewers	"
Glen Ridge	Camden		Separate	Delaware river.
Gloucester City	Camden	1889	"	"
Guttenberg	Hudson		"	"
Hackensack	Bergen	1871	Combined	Hackensack river.
Haddonfield	Camden		"	"
Harrison	Hudson		Combined	Passaic river.
Hasbrouck Heights	Bergen		"	"
Highlands, Navesink	Monmouth		No sewers	"
Hightstown	Mercer		"	"
Hoboken	Hudson		Combined	Hudson river.
Irvington	Essex		"	"
Jersey City	Hudson		Combined	"
Kearny	"		"	"
Keyport	Monmouth		"	"
Lakewood	Ocean		Separate	Purifying process.
Lambertville	Hunterdon		No sewers	"
Leonia	Bergen		"	"
Little Ferry	"		No sewers	"
Little York	Hunterdon		"	"
Lodi	Bergen		"	"
Long Branch	Monmouth	1885	Separate	Ocean.

TABLE 32—SHOWING PLACES IN NEW JERSEY HAVING PUBLIC WATER-SUPPLIES AND SHOWING WHICH OF THESE PLACES HAVE INTRODUCED SEWERS—CON.

NAME OF PLACE.	County.	When introduced.	Separate or Combined.	Disposal.
Longport	Atlantic			
Lorraine	Union		No sewers	
Madison	Morris		"	
Maple Shade	Burlington		"	
Maywood	Bergen		"	
Medford	Burlington		"	
Merchantville	Camden			
Metschen	Middlesex		No sewers	
Midland				
Millville	Cumberland			
Monmouth Beach	Monmouth		No sewers	
Montclair	Essex		Separate	Passaic river.
Moorestown	Burlington			
Morristown	Morris		Storm sewers	
Mount Holly	Burlington	1888	Separate	Rancocas creek.
Newark	Essex	1854	Combined	Passaic river.
New Barbours	Bergen		No sewers	
New Brunswick	Middlesex	1881	Combined	Raritan river.
Newtown	Sussex		No sewers	
North Bergen	Hudson			
North Plainfield	Somerset		No sewers	
Nutley				
Ocean City	Cape May			
Ocean Grove	Monmouth			
Orange City	Essex	1885	Separate	Ocean.
Palisades	Bergen			Passaic river.
Palmyra	Burlington			
Passaic City	Passaic		No sewers	
Peterson	"	1889	Separate	"
Pemberton	"	1868	Combined	"
Pennington	Burlington	1896	Separate	Rancocas creek.
Perth Amboy	Middlesex	1859	No sewers	
Phillipsburg	Warren		Combined	Sound.
Plainfield	Union	1896		Delaware river.
Princeton	Union	1896	Separate	Purifying process.
Rahway	Mercer	1896	"	
Raritan	Union	1867-74	Combined	Rahway river.
Red Bank	Somerset		No sewers	
Ridgefield	Monmouth		Under construction	
Ridgefield Park	Bergen		Separate	Selimens creek.
Riverside	"		No sewers	
Riverton	Burlington	1890		Delaware river.
Rockaway	Morris		No sewers	
Roselle	Union	1895	Separate	{ Creek to Staten Island sound.
Rutherford	Bergen		"	Hackensack river.
Salem City	Salem	1890	"	Creek.
Seabright	Monmouth		"	Shrewsbury river.
Sea Isle City	Cape May			
Somerville	Somerset		Separate	Raritan river.
South Amboy	Middlesex			"
South Orange	Essex			
Spring Lake	Essex			
Stockton	Monmouth		Under construction	
Summit	Camden		No sewers	
Tenafly	Union		Separate	Purifying process.
Trenton	Bergen		No sewers	
Union	Mercer	1889	Combined	Delaware river.
Union Township	Hudson			
Vailsburg	Essex		No sewers	
Vincetown	Burlington		"	
Vineland	Cumberland		"	
Wallington	Bergen			
Washington	Warren		Separate	Shabbecong brook.
Weehawken	Hudson			
Wenonah	Hudson			
Westfield	Gloucester		No sewers	
West Hoboken	Union	1896	Separate	Purifying process.
Westwood	Hudson			
Wildwood	Bergen		No sewers	
Woodbridge	Cape May		"	
Woodbury	Middlesex		Separate	Woodbridge creek.
Woodbridge	Gloucester			
Woodstown	Salem		No sewers	

**Cemeteries.**—Section 6 of the act approved March 25, 1885, provides that "it shall not be lawful to locate any new cemetery or burying ground, or to enlarge any cemetery or burying ground in this State, without the consent and approval of the municipal authorities and board of health of the city, township, town or borough in which it is proposed to locate or enlarge said cemetery or burying ground, upon application in writing for that purpose made; and in case of the refusal of the municipal authorities and local board of health to grant the same, then the person or persons making application as aforesaid may apply to the state board of health, which shall have power to reverse the decision of the local authorities and grant the application; and in case the local authorities grant the permit to locate or enlarge any cemetery or burial ground and the same shall be deemed objectionable by the inhabitants of the city, town, township or borough where it is proposed to locate, then ten citizen freeholders thereof may apply to the state board of health, which shall have power to reverse the decision of the local authorities and prohibit said location or enlargement; and it is herein specially provided, that all persons making application as aforesaid, for the location or enlargement of any cemetery, shall accompany the same with a descriptive map of the premises they propose to occupy, a copy of which shall be also filed in the office of the state board of health; and provided further, that nothing in this section contained shall apply to lands already purchased by any duly organized cemetery company for burial purposes."

Under the provision of this act thirty-two maps have been filed in the office of the State board of health. During the past year two applications have been made for the enlargement of cemeteries, both cemeteries being located in the same vicinity.

Following is the report of the committee of the board to which was referred the application from Grove church, New Durham.

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

GENTLEMEN:—The application dated February 18, 1898, made by the elders and deacons of Grove church, New Durham, township of North Bergen, county of Hudson, and filed with the State board of health, March 1, 1898, and which application requested the privilege of extending the cemetery, situated on lands adjoining the Grove church premises above mentioned, was referred to this committee for inquiry and report on April 12, 1898.

At the regular meeting of the State board of health held April 12, 1898, Rev. J. W. Gowen appeared before the board and verbally presented the reasons for granting the application for the enlargement of said cemetery. On the fifth day of May the cemetery grounds were inspected by officers of this board and

an appointment was made for the hearing by the standing committee on cemeteries, which hearing occurred on May 23, 1898. The hearing was held in the chapel of Grove church, corner Hudson boulevard and Church lane, and the following persons were present: M. F. Moylan, chairman township committee; Gustav Schlop, J. B. Branigan, Patrick Sullivan, members of the board of health. Mr. Henry Bell, one of the officers of Grove church, and the Rev. Mr. Gowen, pastor of Grove church, were also present. Mr. Moylan made the following statement: When the application for the enlargement of this cemetery was first received by the township committee it was laid over for consideration and very careful attention was given to all of the interests involved. It was our unanimous opinion, upon final consideration of this matter by the township committee, that it was impolitic and in opposition to the public interests to permit any enlargement of any cemetery already established, or to permit the establishment of any new cemetery anywhere in the township of North Bergen. The people who reside in the township are strongly opposed to the occupation of any more of the territory of the township by cemeteries, for they consider that too much ground in this vicinity has already been given up to burial purposes, and when it is considered that a large number of the persons whose bodies are buried here were residents of New York city or other distant places, it is seen that the provision which is proposed for additional burial purposes is unnecessary so far as our own citizens are concerned. North Bergen township has more land at present devoted to cemetery uses than all the rest of Hudson county. The cemetery business is conducted for the purposes of speculation. We now have seven cemeteries in the township, having a total area of — acres. The entire area of the township is fourteen square miles, nine square miles of which is meadow land, and much of the remaining ground-surface is rocky, and, like the meadow-land, unsuitable for either the erection of dwellings or for cemetery uses. In my opinion a majority of the residents of North Bergen township object to the enlargement or establishment of cemeteries.

Mr. Schlop said that he believed he represented a majority of the property owners of the township when he expressed strong objection to the enlargement and establishment of cemeteries. His objection was based entirely on general principles and did not apply any more to Grove cemetery than to any other, but he believed that it is unwise that North Bergen township, with its thickly-populated territory, should attempt to provide burial-places for persons dying in the great cities of New York, Jersey City and Hoboken. He said that it was the general view that the exemption from taxation enjoyed by cemeteries was unjust, and together with other property in the township, which is also exempt from taxation, it constituted a burden which ought not to be increased. The property which is now exempt in the township amounts to about three million dollars.

Mr. Branigan said that he objected to the enlargement of Grove cemetery because of the very large proportion of land which had already been given up to cemeteries in the township. He also stated that the ground-water in the vicinity of cemeteries is polluted and asserted that the well on his premises has been rendered dangerous for domestic uses because it was contaminated by drainage from a cemetery. He stated that in his judgment 99 per cent. of the citizens of the township object to the enlargement of this cemetery. Several

physicians have expressed the view that much of the sickness which prevails in this township is due to the cemeteries which are located here. He also stated that at the last election of township committeemen the principal campaign issue was based on the proposed enlargement of this cemetery and that the vote showed that the people were strongly opposed to any such enlargement.

Mr. Sullivan said that he objects to the enlargement of the cemetery because, he believes, in such objection, he represents the views of his constituents. His objection does not apply particularly to Grove cemetery, but to all cemeteries in the township. The township committee believed when it took action on the application of the Grove church consistory that it was obeying the will of the people in refusing to grant the extension and enlargement of Grove cemetery which was requested.

Mr. Henry Bell stated in reply to a question that no fund is provided to keep the cemetery in order. A deed in fee-simple is given to every purchaser of a lot. The cemetery is kept in order by the voluntary act of the church officers.

Rev. Mr. Gowen presented at considerable length the arguments in favor of the enlargement of the cemetery, setting forth the facts relating to its origin, history and gradual enlargement. His argument in favor of granting the request contained in the application rests mainly upon the statement that no damage would be done to the values of property in the vicinity, and that the owners of property in the immediate neighborhood of the cemetery did not object to the proposed enlargement.

In view of the foregoing statements, and after personal inspection of Grove church cemetery and the surrounding property, including the proposed addition, the undersigned respectfully recommend that the action of the board of health of the township of North Bergen, and the township committee of said township, in refusing to consent to the proposed extension of said cemetery, shall be sustained.

JOHN A. GITHENS,  
E. R. O'REILLY, M. D.

Trenton, N. J., July 8, 1898.

The report of the committee was concurred in by the board.

In the case of the Weehawken Cemetery Company, which made application for the enlargement of the cemetery under their control, the committee reported as follows:

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

GENTLEMEN—An appeal, dated June 22d, 1898, and signed by seventeen persons, residents of the township of North Bergen, setting forth objections against the extension of Weehawken cemetery, situated in said township, and also another communication, dated July 12th, 1898, addressed to the State board of health, protesting against the enlargement of the said Weehawken cemetery, and signed by eleven persons, having been received by the State board of health, and placed in the hands of this committee for such investigations as may in the judgment of the committee be deemed necessary, we

desire to present the following facts: A letter dated July 18th, 1898, and signed by A. Klesick, was received by the State board of health, accompanied by a map showing the proposed enlargement of the said Weehawken cemetery.

A letter, dated August 13th, 1898, addressed to the State board of health, and signed by Emil J. Foerch, township clerk and secretary of the board of health of the township of North Bergen, states that "permission has been granted by the township committee and by the local board of health of North Bergen to the Weehawken Cemetery Company to enlarge their cemetery in accordance with diagram shown on map filed by said cemetery company."

Inspections were made by officers of the State board of health, July 29th and August 8th, of the said Weehawken cemetery, and the lands which it is proposed to join to said cemetery, and it has been learned that the cemetery herein referred to is located in North Bergen township, and it is chartered under the name "Weehawken Cemetery," but a portion of the cemetery lands is also spoken of as the Palisade Weehawken cemetery, and this latter title is sometimes used to designate the whole of Weehawken cemetery. The charter is dated 1869. The extension or addition which it is proposed to make to the cemetery was recently purchased, and the deed was to have been transferred July 27th, 1898. The application for the extension of the cemetery having been granted by the township committee and by the local board of health of North Bergen, the appeal under consideration is directed against the action of these local authorities. We find that the cemetery referred to has been sold in lots to various purchasers during the last nineteen years, and that no restrictions have been placed upon lot-owners requiring that the cemetery grounds shall be kept in good order, and that no fund has been reserved from the proceeds of the sale of lots for the permanent maintenance of the cemetery property. The ownership of the unsold lands is vested in a stock company, and certain bonded indebtedness is still unpaid. At the present time there is an average of one burial per day, and during last year there were 365 burials. An examination of the cemetery grounds shows that a considerable portion of the lots are neglected and uncared for, grass and weeds have been allowed to grow up, and there is evidence that the neglected lots have been abandoned by the former owners and their successors.

The disregard of the laws of the State relative to the burial of bodies in Weehawken cemetery led the authorities of the township to bring to the attention of the court of chancery in 1885 the facts relating to the violation of the law, showing that the depth of interments in many cases was less than the distance required by law, and on August 17th, 1885, an injunction was issued restraining the cemetery company from further violation of the law in this particular. We find that the extension or addition which it is proposed to join to the cemetery is about 153 feet in width and 625 in length, and extends along the northerly boundary of the cemetery. It was stated by the vice-president of the association that this extension is needed to enable the cemetery company to continue to sell lots, otherwise the cemetery must soon be closed, as nearly all available lands within the cemetery inclosure which can be used for burial purposes have already been sold. All of the petitioners who have signed the appeal reside within one half-mile of the cemetery, and a number of them dwell within a much shorter distance of the same.

We view the request of the Weehawken Cemetery Company for an extension of the Weehawken cemetery as similar in nearly all respects to the request recently acted upon by this board relating to the enlargement of the Grove church cemetery, located only about one-quarter of a mile away, and the same questions arise for consideration in this case that were discussed and acted upon in the case of the Grove church cemetery, and we feel that the same principle which guided this board in refusing to consent to the enlargement of the Grove church cemetery should also guide in dealing with the questions presented in the case of the Weehawken cemetery. We therefore advise that the decision of the local authorities shall be reversed, and that the enlargement of the said Weehawken cemetery shall be prohibited.

Accompanying this report will be found the following papers: (1) The appeal dated June 22d, 1898. (2) The appeal dated July 12, 1898. (3) The letter, dated July 18th, 1898, signed by A. Klesick for the Weehawken Cemetery Company, accompanied by a map showing the proposed extension of the Weehawken cemetery. (4) A letter, dated August 13th, 1898, signed by Emil Foerch, clerk local board of health and township committee of North Bergen. (5) A letter, dated August 8th, 1898, and signed by Charles Pinnell. (6) A newspaper clipping. (7) A report of a special committee of the township committee of North Bergen, including a report of the result of the investigation of the manner in which interments are made in the several cemeteries located in North Bergen township, and also including a copy of the order of the court of chancery enjoining the Weehawken Cemetery Company from certain methods of burial.

Respectfully submitted,

JOHN A. GITHENS,  
EDWARD R. O'REILLY,  
*Committee.*

Trenton, N. J., August 10th, 1898.

The report of the committee was received, but final action in this case was deferred until January 10, 1899. Nine of the persons who signed the petition requesting the State board of health to review the action of the local authorities in granting the application for the extension of this cemetery, presented written statements expressing their wish to withdraw their signatures from the petition. The matter was referred to Corbin & Corbin, attorneys, and the following letter of advice was received.

JERSEY CITY, N. J., October 18, 1898.

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

DEAR SIR.—I have examined the papers in the matter of the proposed enlargement of the Weehawken cemetery in the township of North Bergen.

Section 6 of the Supplement of 1885 to the Cemetery act (G. S. 355, Sec. 33) provides that where the local authorities grant a permit to locate or enlarge any cemetery, the State board shall have power to reverse the decision of the local authorities; and in the same section it is provided that ten citizen-free-

holders of the town or township may apply to the State board of health to exercise this power.

Whether the State board of health can exercise this power without application of freeholders is not entirely clear. Assuming that an application is necessary to give jurisdiction, the first question is, whether the ten citizens must all sign the same written application. In my opinion this is not necessary. If each of ten qualified citizens should make a separate application that would be sufficient.

In the case before the board it appears that two written applications have been presented, each signed by more than ten citizen-freeholders, but that written withdrawals have been sent by some of these signers to the board, which in effect have reduced the number to less than ten on each of the two applications. If there remain on both applications ten citizen-freeholders of the township who have not withdrawn, the application is sufficient.

The second inquiry is whether, after a sufficient application for reversal has once been presented, it is competent for the signers to take away the jurisdiction of the State board to reverse by giving to the board written notice of withdrawal of objections.

In such a case, where final action has been taken by the board on the application, it is clearly too late to withdraw. How far a withdrawal is permissible, after the board has taken charge of the matter and procured a report from an inspector, is not free from doubt.

The jurisdiction of the board is conferred, not so much for the benefit of the applicants as for the public, and it might very well be held that the applicants are given no control over the action of the board, except to set it in motion.

The board should fix a day for hearing, and give notice to the cemetery company and to the applicants before taking final action on the application.

Yours very truly,

CHARLES L. CORBIN.

**Contagious Diseases of Animals.**—No extensive outbreak of contagious disease among animals has occurred in New Jersey during the past year. Tuberculosis has continued to spread, as usual, from cow to cow in the dairy herds in many parts of the State, and hog cholera has appeared in limited areas, one individual in Cumberland county having lost over one hundred head. A few cases of actinomycosis were brought to the notice of the board.

A localized epidemic of vaccina appeared in Essex county in July and August, and proved interesting because of the rarity of this disease in the United States. About five hundred or six hundred cattle were affected by the disease, which ran a short course, developing the typical lesion on the udder and thighs. The disease was first recognized by R. B. Smith, D. V. S., of Montclair, and afterward the diagnosis was confirmed by W. J. Coates, M. D., D. V. S., lecturer on diseases of animals in the American Veterinary College, New York, and by Dr. A. H.

Doty, Quarantine Officer of the port of New York. Dr. W. Runge, of Newark, also expressed the view that the disease was vaccina.

Following is a letter stating the views of Prof. Coates:

AMERICAN VETERINARY COLLEGE,  
HOSPITAL DEPARTMENT.

139 & 141 WEST 54TH STREET.

A. Lioutard, M. D. V. M., Medical Director.

W. J. Coates, M. D., D. V. S., Chief Surgeon.

NEW YORK, May 21, 1898.

This is to certify, that on May 16th, at the request of the New Jersey State Board of Health, and in company with Drs. Mitchell and Hunt of said board, I examined the cows of the Fairfield Dairy Farm at Caldwell, N. J., especially those which were marked and set aside by Drs. Smith and Runge, and found said cows in various stages of the disease called vaccina (cowpox), some with papules, others with vesicles and pustules, and many in the desquamative stage. Also examined three cows which had been vaccinated on the udder with the lymph of cowpox, and these three cases simulated the lesion found on the udders of the cows affected.

W. J. COATES, M.D., D.V.S.

At a meeting of the Monmouth County Agricultural Society, held September 3d, 1898, it was, by resolution, ordered that the secretary should request the State board of health to take action, when the next outbreak of hog cholera shall occur, to stamp out the scourge. The following reply was made:

OFFICE OF THE BOARD OF HEALTH  
OF THE STATE OF NEW JERSEY.  
TRENTON, September 14th, 1898. }

Mr. D. A. Vandevere, Secretary Board of Agriculture, Freehold, N. J.:

DEAR SIR—Yours of September 6th received, together with newspaper clipping, and we are pleased to learn that the farmers of Monmouth county are preparing to prevent the spread of hog cholera.

You are of course aware that no remedial measures have heretofore been found effectual for the cure of animals once affected by this disease, but there seems now to be reason to believe that the application of the serum treatment for the prevention as well as the cure of this affection may work a revolution in the near future in dealing with this ailment.

A recent communication from the Bureau of Animal Industry, Washington, D. C., states that the amount of hog cholera serum available for use has thus far been insufficient to meet the demands of those who desire to employ it, but it is believed that an ample supply will soon be ready, and we shall then be anxious to begin its use in New Jersey.

At the present time the only known measure which can be depended upon to prevent the spread of hog cholera is the separation of the infected animals from those which have not been attacked by the disease nor exposed to the infection. The owner of the animals can himself conduct this quarantine or isolation, and we find that all thrifty farmers promptly apply this means to

prevent losses which would attend the mingling of the sick with those which had not been attacked, and it is necessary to introduce official control only in the cases of neglectful hog owners.

Very respectfully,

HENRY MITCHELL, *Secy.*

A considerable trade seems to have recently sprung up in the purchase, slaughter and sale of tuberculosis cows. This disreputable business is carried on by parties who shield themselves behind the statement that they "did not know the animal was sick," and as the carcasses are, almost without exception, sent to markets outside of the State, information concerning the transaction is rarely obtained from the health officers of New Jersey. The diseased animals are generally shipped from some rural point, and the township authorities often give no heed whatever to cases of this nature when the carcass is not offered for sale within the local jurisdiction.

The State board of health takes prompt action to enforce the payment of the penalty for the violation of the law whenever the facts and evidence will secure a conviction, but no inspection service is maintained by the State to seize and condemn all carcasses unfit for food, and the detection of diseased meat is not often undertaken by local health officers except in a few cities.

The following letter indicates the trying position in which the farmer is placed by the knowledge that he has tuberculous animals in his herd:

———— N. J., June 7, 1898.

*H. Mitchell, M. D., Sec. State Board of Health, Trenton, N. J.*

DEAR SIR:—I am a practicing veterinarian, and was called about Jan. 1st, 1898, to visit a cow belonging to a dairyman who runs a retail milk wagon in a neighboring town, having a very fine herd of grade Jerseys and Guernseys, said to be worth an average of about \$75 a head. This herd numbers twenty-five animals. The cow referred to I found suffering from a very severe type of tuberculosis. I slaughtered her, holding post-mortem examination, which confirmed the diagnosis. I then made a very careful physical examination of balance of herd, finding three more which were affected with the disease and were killed. The remaining cattle were very fat and in every way in fine condition. I visited the herd a number of times during the next three months, finding everything straight, when last Saturday I was again called to visit another cow which I found affected in like manner. I killed her this afternoon and made post-mortem examination, confirming diagnosis.

The owner of this herd is solely dependent on his dairy for his support. If this disease becomes general he will lose his farm and his all. This place is one of the best and finest in our county, and the trouble came through a cow purchased some eighteen months since in Camden county. What would you

advise me do in the premises? I had a long talk with the owner to-day, and he stated that if this thing became known, he might as well quit business at once, as competition was so great in his business that if the other dealers in milk heard of his misfortune they would use it for their own gain. He is very careful as regards cleanliness and would under no circumstances sell a drop of milk from a diseased cow. I suggested to him to try the tuberculin test, but he would not listen to it unless it could be done privately. Can tuberculin be procured through your board to be used privately? Please advise me also in reference to the best method of disposing of the carcasses. During the past nine months I have condemned and slaughtered six other animals with this trouble. I am satisfied that very few herds in our county are exempt, and the dairy interests have a dull prospect. ————— V. S.

The following reply was made to the foregoing letter:

OFFICE OF THE BOARD OF HEALTH  
OF THE STATE OF NEW JERSEY,  
TRENTON, June 14th, 1898. }

Dr. —————:

DEAR SIR—The questions presented in your letter of June 7th are full of interest from a sanitary point of view. Under the law approved May 22d, 1894, bovine tuberculosis is placed in the hands of a special commission, and, unlike other communicable diseases affecting animals, this disease does not come under the control of this board.

All persons who are familiar with the tendency of the times must realize that a popular demand is bound to be created for clean milk from healthy cows, and unquestionably the day is not distant when the revolution which has already begun in the milk business will be fully accomplished, and cleanliness in taking the milk, cleanliness in the storage, transportation and delivery of milk, will be the rule, instead of the exception, as at present.

The communicability of tuberculosis from animal to animal and to man is now so well understood that it is incautious, to say the least, for an owner of cattle to add to his herd a cow which has not been tested by the use of tuberculin, and it is equally careless to house or stable cows in infected buildings, or under conditions where insufficient light and air are provided.

Tuberculin cannot be procured through this board, but a letter to the secretary of the tuberculosis commission, Trenton, will probably bring the information which you desire.

Yours, truly,

HENRY MITCHELL,  
*Secretary.*

TABLE 33.—CONTAGIOUS DISEASES OF ANIMALS REPORTED BETWEEN OCTOBER 8, 1897, AND OCTOBER 17, 1898.

When reported.	Owner's Name and Address.	Disease.	By Whom Reported.	Action Taken.
Oct. 9, 1897	Edward Greene, Newark.	Glanders.	Dr. W. Runge.	Animal destroyed.
17	John Anderson, 181 Pacific St., Newark.	"	"	"
19	Winder Truck Co. (Jersey City), Hilton.	"	"	"
20	Edmund Bros., 24 Eighth Ave., Newark.	"	"	"
21	Mr. Atwood, Hopewell.	"	"	"
Nov. 12	South Branch.	Hog Cholera.	Dr. Hurley.	290 animals died.
13	Randolph Page, Provost St., Jersey City.	"	Dr. W. Runge.	290 animals died.
14	Edmund Bros., 24 Eighth Ave., Newark.	Glanders.	Dr. W. Runge.	Malignant. No case.
15	A. C. Co., 100 Pine St., Newark.	"	Dr. W. Runge.	Animal destroyed.
Feb. 3, 1898	U. S. Express Stables, Jersey City.	"	Dr. W. Runge.	"
8	George Terrell, 379 Pine St., Newark.	"	Dr. W. Runge.	"
9	Mr. Speck, 34 Grace St., Jersey City.	"	Dr. W. Runge.	"
24	E. S. Davidson, Harrisonville.	"	Dr. E. A. Smith.	"
25	Bound Brook.	"	Dr. Benjamin.	"
April 1	E. S. Davidson, Harrisonville.	Pluro-pneumonia.	Dr. Benjamin.	No case found.
9	H. S. Halsey & Co., Bridge St., Newark.	Tuberculosis.	Owens.	Animal destroyed.
12	J. T. Dietrick, Orange, 14 and Fourteenth St., Newark.	Glanders.	Dr. Chandler.	"
17	J. B. Simpson, Sixteenth and Fourteenth St., Newark.	"	Dr. Runge.	"
27	Dairies in Caldwell Township.	"	Dr. Runge.	"
May 2, 1899	A. B. Freeman, Monticton.	Vaccinia.	Drs. Smith and Runge.	Isolation.
7	U. S. Express, Jersey City.	Glanders.	Dr. Runge.	No case found.
7	U. S. Express, Hoboken.	"	Dr. Mathews.	Animal destroyed.
12	"	"	Dr. Dixon.	"
26	"	"	Dr. Dixon.	"
June 6	"	"	Dr. Dixon.	"
6	James Smith, Marvinville.	Tuberculosis.	Mr. Benjamin.	"
8	Geo. Diabrough.	"	Board of Health.	"
15	"	"	Dr. Voorhees.	Referred to Tuberculosis Commission.
15	Mr. Hosen, Paterson.	Glanders.	Dr. A. S. Baldwin.	Animal destroyed.
22	Mr. Hosen, Paterson.	Tuberculosis.	Owner.	Referred to Tuberculosis Commission.
Aug. 9	Gardner Johnson, Stockton.	Glanders.	Owner and Dr. Harker.	No case found.
11	Ferdinand Hill, 699 Springfield Ave., Newark.	"	Dr. Runge & Tucker.	Animal destroyed.
11	Schubert, Lyons Farms.	"	Dr. Runge & Tucker.	"
11	Schubert, Lyons Farms.	"	Dr. Runge & Tucker.	"
Oct. 1	Mearns, Hooker & Son, 250 Passaic Av., Harrison.	"	Dr. Runge.	"
27	"	"	Dr. Runge.	"

Glanders cases examined. 86  
 Animals destroyed. 34  
 No disinfectants reported. 2  
 Hog cholera losses reported. 200

Institutions.—Following is a list of the most important public institutions in New Jersey devoted to the care or custody of the dependent and criminal classes:\*

TABLE 34.—INSTITUTIONS, INCLUDING HOSPITALS, ARRANGED BY COUNTIES AND SANITARY DISTRICTS.

COUNTIES.	SANITARY DISTRICT.	NAME OF INSTITUTION AND ADDRESS.
Atlantic	Egg Harbor Township	County Almshouse, Smith Landing.
	Hamilton Township	County Jail, Mays Landing.
	Englewood	Englewood Hospital, Englewood.
Bergen	Hackensack	County Jail, Hackensack.
	Midland Township	Tri-Township Almshouse, Oradell.
Burlington	Northampton Township	County Hospital, Mount Holly.
	"	County Jail, Mount Holly.
Camden	Pemberton Township	County Insane Asylum, Pemberton.
	"	Cooper Hospital, Camden.
Cape May	Gloucester Township	County Jail, Camden.
	"	County Almshouse, Blackwood.
Cumberland	Middle Township	County Insane Asylum, Blackwood.
	"	County Almshouse, Cape May Court House.
Essex	Bridgeton	County Jail, Cape May Court House.
	Hopewell Township	County Jail, Bridgeton.
Hunterdon	"	County Almshouse, Bridgeton.
	Vineland	Institution for Feeble-Minded Women, Vineland.
Mercer	"	N. J. Home for the Education and Care of Feeble-Minded Children, Vineland.
	Belleville Township	Township Almshouse, Belleville.
Newark	Bloomfield Township	Township Almshouse, near Bloomfield.
	Caldwell	County Penitentiary, Caldwell.
New Jersey	Millburn	Township Almshouse, Millburn.
	Montclair	Township Almshouse, Montclair.
Orange	Newark	County Insane Asylum, Newark.
	"	County Jail, Newark.
Passaic	"	German Hospital, Newark.
	"	Newark City Almshouse, Newark.
Union	"	Newark City Hospital, Newark.
	"	St. Barnabas' Hospital, Newark.
Windsor	"	St. Michael's Hospital, Newark.
	Orange	Memorial Hospital, Orange.
Sussex	Orange City	County Almshouse, Orange.
	South Orange	Township Almshouse, Vailsburg.
Trenton	Verona	Newark City Home, Verona.
	East Greenwich	County Almshouse, Clarksboro.
Warren	"	County Insane Asylum, Clarksboro.
	Woodbury	County Jail, Woodbury.
Atlantic City	Bayonne	Bayonne Hospital, Bayonne.
	Hoboken	St. Mary's Hospital, Hoboken.
Camden	Jersey City	Christ Hospital, Jersey City.
	"	County Almshouse, Snake Hill.
Camden	"	County Insane Asylum, Snake Hill.
	"	County Jail, Jersey City.
Camden	"	County Penitentiary, Snake Hill.
	"	Jersey City Hospital, Snake Hill.
Camden	St. Francis Hospital	St. Francis Hospital, Snake Hill.
	County Jail	County Jail, Flemington.
Camden	Hamilton Township	Township Almshouse, Clover Hill.
	Hopewell Township	Township Almshouse, Hamilton Square.
Camden	Princeton Township	Township Almshouse, Hopewell.
	Ewing Township	Township Almshouse, Princeton.
Camden	"	New Jersey State Hospital, Trenton.
	"	State Industrial School for Girls, Trenton.
Camden	Hopewell Township	County Workhouse, Trenton.
	Trenton	County Jail, Trenton.
Camden	"	Mercer Hospital, Trenton.
	"	Municipal Hospital, Trenton.

\* Errors or omissions in this table will be corrected in future reports, if persons observing such inaccuracies will kindly bring them to the attention of this board.

TABLE 34.—INSTITUTIONS, INCLUDING HOSPITALS, ARRANGED BY COUNTIES AND SANITARY DISTRICTS—CON.

COUNTIES.	SANITARY DISTRICT.	NAME OF INSTITUTION AND ADDRESS.
Mercer	Trenton	New Jersey State Prison, Trenton.
"	"	St. Francis Hospital, Trenton.
"	"	Trenton City Almshouse, Trenton.
"	"	Trenton City Hospital, Trenton.
Middlesex	Monroon Township	State Reformatory, Jamesburg.
"	New Brunswick	County Jail, New Brunswick.
"	"	John Wells Memorial Hospital, New Brunswick.
"	North Township	New Brunswick Almshouse, New Brunswick.
"	Perth Amboy	Perth Amboy City Almshouse, New Brunswick.
"	Piscataway Township	Township Almshouse, Stilton.
"	Woodbridge Township	Township Almshouse, Menlo Park.
Monmouth	Freehold, Town	County Jail, Freehold.
"	Holmdel Township	Township Almshouse, Holmdel.
"	Long Branch	Memorial Hospital, Long Branch.
"	Neptune Township	Township Almshouse, New Bedford.
"	"	Isolation Hospital, Asbury Park.
"	Red Bank	Isolation Hospital, Red Bank.
Morris	Boonton	County Almshouse, Boonton.
"	Hanover Township	State Asylum for the Insane, Morris Plains.
"	Morristown	All Souls Hospital, Morristown.
"	"	County Jail, Morristown.
Ocean	Dover Township	County Jail, Toms River.
Passaic	Passaic City	Passaic City Almshouse, Passaic.
"	Paterson	County Insane Asylum, Paterson.
"	"	County Jail, Paterson.
"	"	Ladies' Hospital, Paterson.
"	"	Paterson City Almshouse, Paterson.
"	"	Paterson General Hospital, Paterson.
"	"	Paterson Isolation Hospital, Paterson.
"	"	St. Joseph's Hospital, Paterson.
Salem	Pilesgrove	County Almshouse, Woodstown.
"	"	County Insane Asylum, Woodstown.
"	Salem City	County Jail, Salem.
Somerset	Bridgewater Township	Township Almshouse, Somerville.
"	Franklin Township	Township Almshouse, Middlebush.
"	Hillsboro Township	Township Almshouse, Neshanic.
"	Montgomery Township	Township Almshouse, near Harlington.
"	Somerville Township	County Jail, Somerville.
Sussex	Frankford	County Almshouse, Branchville.
"	Newton	County Jail, Newton.
Union	Elizabeth	County Jail, Elizabeth.
"	"	Elizabeth City Almshouse, Elizabeth.
"	"	Elizabeth Small-Pox Hospital, Elizabeth.
"	Plainfield	Muhlenberg Hospital, Plainfield.
"	Rahway	Rahway City Almshouse, Rahway.
Warren	Bevidere	County Jail, Bevidere.
"	Hope Township	County Almshouse, Townsbury.

**Scope of the Work of the State Board of Health.**—The laws assign to the State board of health the following departments of inquiry and investigation or executive action:

1. Classification, registration and tabulation of certificates of marriages, births and deaths.
2. Sanitary supervision over cars, boats and other vehicles in which persons or chattels are transported through the State.
3. Investigation of local outbreaks of disease.
4. Investigation of nuisances, needs for drainage and neglect of sanitary laws.

5. Investigation of the sanitary condition of school-houses, tenements, manufactories, workshops and public buildings, and also inquiries concerning conditions affecting the health of persons confined or employed in such buildings.

6. Investigations concerning the sources of sickness and mortality, the effects of locality, employment and circumstances on the public health.

7. Prevention of the spread of contagious diseases of animals.

8. Prevention of the sale of contaminated milk.

9. Receiving and recording reports of communicable diseases.

10. Supervision over the administration of maritime quarantine.

11. Supervision over the management of the State bacteriological laboratory.

12. The detection of the practice of adulterating foods.

13. The prevention of the sale of dangerous kerosene oil.

14. The prevention of the sale of impure or inert vaccine virus, antitoxine or other animal products used for remedial or prophylactic purposes.

15. The control of the establishment and extension of cemeteries.

**Sanitary Legislation.**—During the legislative session of 1897 thirty bills having relation to the public health were introduced—seventeen in the house and thirteen in the senate—and at the beginning of the session of 1898 a new standing committee on public health was constituted in each branch. In 1898 thirty-six bills, more or less closely related to sanitary questions, were presented. A list of the titles of these bills will be found under "Circulars and Laws."

In response to an inquiry, William M. Lanning, Esq., says: "In my judgment, section 1 of chapter CCLX of the laws of 1895 practically supersedes section 26 of the act of March 31, 1887. I do not regard section 26 as having any force, except in the case of a contagious or infectious disease not mentioned in the act of 1895 and not declared under the act of 1895 by the State board of health to be preventable and specially dangerous to the public health. Such a construction of these two sections I suppose leaves section 26 of the act of March 31st, 1887, almost without any force whatever.

"In answer to the question, 'Can women serve as members of local boards of health?' I reply that I know of no provision in the health law excluding them, except that in townships the local board must be



composed of the township committee and the township assessor, all of whom, under our laws, must be men. The physician appointed by the township committee, so far as I see, may be a woman."

**Bacteriological Laboratory.**—The laboratory for bacteriological diagnosis, conducted under the supervision of the State board of health, has established sixty-six depots or repositories for mailing cases throughout the State, and during the past year 284 persons have availed themselves of the facilities afforded by the institution. During the year ending September 1st, 1898, specimens were examined for diagnosis as follows: Diphtheria 579, tuberculosis 483, typhoid fever (blood) 149, malaria 4, gonorrhoea 20. A statement showing the work performed in the laboratory is presented in the report of the director, B. Meade Bolton, M.D.

The application made about one year ago to the postmaster-general for a modification of the provisions of the order issued February 5th, 1896, relating to the construction of the mailing-package used for transmitting specimens of diseased tissues through the mail, was referred by the post-office department to the supervising surgeon general of the Marine Hospital service, and no action has yet been taken by that bureau in regard to the application. The improvement in the construction of the mailing-case (for description see Annual Report of N. J. State Board of Health for 1897, page 22), which was suggested would render the package much stronger than the one at present in use, and for conveying dry specimens the packages could be much lighter, and consequently they would require less postage.

The delay in taking action in reference to the application referred to has caused much inconvenience in purchasing supplies for the laboratory, for until the question is disposed of, only small quantities of mailing-cases are furnished from time to time, whereas larger orders could be placed at better rates.

**Classification and Registration of Vital Statistics.**—At a meeting of the State board of health held April 12th, 1898, the advisability of adopting a new system of classification of causes of death, which shall admit of more convenient comparison with other States and countries, was considered, and doubtless before the beginning of the statistical year 1900-1901 modifications of the methods now employed for both the classification and registration of deaths will be inaugurated. The system of registration at present employed does not

provide for frequent tabulation of the recorded facts, and therefore the value of the statistics in showing to local health officers and the public the prevalence of disease is much diminished. Under the proposed method of registration it is intended to make a monthly transcript of the records to show deaths from all epidemic diseases, and also from certain other prominent causes of death.

Soon after the war revenue act became operative the following letter was sent to the Attorney-General:

OFFICE OF THE BOARD OF HEALTH  
OF THE STATE OF NEW JERSEY.  
TRENTON, July 27th, 1898. }

Hon. Samuel H. Grey, Atty.-Genl., Trenton, N. J.:

DEAR SIR—We are receiving inquiries from clergymen and local registrars of vital statistics in relation to placing revenue stamps on certificates of marriage. Will you have the kindness to inform this bureau concerning the requirement of the law in this particular?

Will you also please to inform us if it is necessary to place revenue stamps on the certified copies of certificates issued by this office?

Very respectfully,

HENRY MITCHELL, Secy.

The reply of the attorney-general inclosed a copy of an opinion, dated June 30th, 1898, addressed to the Hon. Geo. B. Swain, State Treasurer, from which the following extract is made:

"It has been repeatedly held by the State and Federal courts that the taxing power of the Federal government cannot be used to impose burdens upon the administration or the instrumentalities of government in the several States. In *McCullough vs. Maryland*, 4 Wheat., 316, Chief Justice Marshall used this language: 'The power to tax involves the power to destroy; the power to destroy may defeat and render useless the power to create. There is a plain repugnance in conferring on one government the power to control the constitutional measures of another.' The Federal government can no more interfere with the operations of State government by any system of taxation upon its governmental action or the instrumentality by which the government is administered, than could the State government exercise its power of taxation over the instruments or persons engaged in the administration of the government of the United States.

"In *Dobbins vs. Commissioners of Erie*, 16 Peters, 435, 447, the Supreme Court of the United States said, speaking of the power of taxation possessed and exercised by a State: 'When taxation by a State acts upon the instruments, emoluments and persons which the United States may use and employ as necessary and proper means to execute its sovereign power, the power of taxation by the State is restrained. The same principle was recognized by the Supreme Court of the United States in the case of *Collector vs. Day*, where the salary of a judicial officer of a State was attempted to be taxed under a Federal statute. 'In this case the supremacy of the general government cannot be

maintained. The two governments, State and Federal, are upon an equality. (11 Wall., 125, 126.) Judge Nelson, in the course of his opinion in that case, used this language: 'Any government whose means employed in conducting its operations, if subject to the control of another and distinct government, can only exist at the mercy of that government.' (11 Wall., 127.) And in the case of *Veazie Bank vs. Fenno*, 8:1 Wall., 533, 547, in which the taxing power of the Federal government was maintained, Chief Justice Chase uses this language: 'It may be admitted that the reserved rights of the State, such as the right to pass laws, to give effect to the laws through executive action, to administer justice through the courts and to employ all necessary agencies for the legitimate purposes of State government, are not proper subjects of the taxing power of Congress.'

"In the case of the *United States vs. Railroad Co.*, 17 Wall., 322, 327, Justice Hunt, in delivering the opinion of the court, says: 'The right of the States to administer their own affairs through legislative, executive and judicial departments in their own manner and through their own agencies, is conceded. \* \* \* \* This carries with it an exemption of those agencies and instruments from the taxing power of the Federal government. If they may be taxed lightly, they may be taxed heavily. If justly, oppressively.'

There are a number of decisions of the State courts of a similar character, but I think it may be assumed that there is no question but that the Federal government is without power to tax the State governments, or any of the instrumentalities or governmental agencies of the State governments."

In conformity with the foregoing views, no revenue stamps have been attached to the return of vital statistics, certified copies of births, marriages and deaths, nor to any other papers and documents issued by the bureau of vital statistics and by the State board of health.

The following letter has been sent to physicians who were reported by local registrars to be remiss in relation to the duties imposed by the registration law:

M. D.

July 22d, 1898.

N. J.

DEAR DOCTOR—We are informed that in numerous instances you have omitted to send certificates of birth within thirty days after the confinement, and we wish to ask your attention to the great desirability of prompt reports.

The interests of the child, the parents and the State are all promoted by accurately recording and preserving the facts stated in the certificate, and if the records are to command public confidence, they should be full and complete.

This bureau is entrusted under the law with the registration of the certificates, and we trust that you will cheerfully assist us by at once sending to the local registrar of vital statistics certificates of all of the births which have occurred in your practice to date, and that hereafter you will report them within thirty days, as the law requires.

Very respectfully,

HENRY MITCHELL,  
Med. Supt. Vital Statistics.

Communications have been sent to city clerks, assessors, in townships and all other officers whose duty it is to receive and transmit returns of births, still-births, marriages and deaths, requesting them to inform the bureau of vital statistics of every instance within their knowledge where a birth is not reported by the attending physician or by the parent. It is estimated that returns are at present received as follows: Births, 90%; marriages, 99%; deaths, 100%.

TABLE 35—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 COLUMN SHOWING HOW MANY MARRIAGES WERE OF NON-RESIDENTS.

YEAR.	Marrriages.	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..	8,100	24,292	19,125	1,475	.....
" " " 1881..	8,336	24,268	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..	9,343	25,189	23,906	1,732	.....
" " " 1886..	12,838	27,332	22,923	1,494	2,572
" " " 1887..	15,639	28,016	24,566	1,580	4,332
" " " 1888..	16,574	29,034	27,479	1,739	4,475
" " " 1889..	15,962	30,407	26,778	1,859	4,072
" " " *1890..	15,954	31,770	28,773	1,819	4,187
" " " 1891..	15,847	30,023	29,179	1,809	3,411
" " " 1892..	16,572	32,726	33,016	1,848	3,767
" " " 1893..	17,627	34,639	30,924	1,892	4,073
" " " 1894..	16,690	35,108	30,355	2,022	3,881
" " " *1895..	16,537	33,198	30,901	1,933	3,282
" " " 1896..	18,774	33,006	31,315	2,033	4,132
" " " 1897..	18,171	31,595	29,822	2,031	4,090
" " " 1898..	13,664	34,687	28,033	2,083	.....
<b>Totals.....</b>	<b>272,697</b>	<b>586,458</b>	<b>611,613</b>	<b>34,517</b>	<b>46,274</b>

\* Census figures are in heavy type.

Grand total.....	1,425,285
Yearly average.....	71,264
Year ending June 30th, 1898.....	78,467

TABLE 36—NUMBER OF CERTIFICATES OF BIRTHS, MARRIAGES, DEATHS AND STILL-BIRTHS RECEIVED AND RECORDED DURING THE TWENTY YEARS ENDING JUNE 30TH, 1898, COMPARED WITH THE NUMBER RECEIVED DURING THE LAST STATISTICAL YEAR, ALSO THE NUMBER OF SEARCHES AND CERTIFIED COPIES MADE DURING THE YEAR ENDING JUNE 30TH, 1898.

	Total number of certificates recorded during the twenty years ending June 30, 1898.	Number of certificates recorded during the year ending June 30, 1898.	Increase over previous year.	Decrease from previous year.	Number of searches made during the year ending June 30, 1898.	Number of certified copies issued during the year ending June 30, 1898.	Number of searches in pension cases during the year ending June 30, 1898.
Births.....	586,438	34,687	3,092		331	170	218
Marriages.....	272,697	13,664		4,507	468	233	308
Deaths.....	531,612	28,033		1,789	808	508	464
Still-Births.....	34,517	2,083	52		0	0	0
Totals.....	1,425,245	78,467			1,637	911	990

Very respectfully,  
**HENRY MITCHELL,**  
 Secretary.

## SUMMARY OF REPORTS FROM LOCAL BOARDS OF HEALTH.

The usual memorandum reminding local health officers of the provisions of the law requiring that an annual report shall be sent to the State board of health not later than October 15, has this year been prepared separately for townships and for municipalities, as follows :

BOARD OF HEALTH OF THE STATE OF NEW JERSEY, }  
 TRENTON, September 1st, 1898. }

### To Local Boards of Health :

Section thirty-seven of the act approved March 31st, 1887, reads as follows :  
 37. *And be it enacted*, That the local board of health of every township, city, borough, town, and other municipality, shall, on or before the first day of October in each year, in addition to other reports required, prepare an annual report of the condition of the public health within the limits of its jurisdiction, stating therein any special cause for the deterioration of health or of hazard thereto, and shall therein answer any inquiries which may have been addressed to such local board by the state board of health, and such local board shall forward a copy of such report to the state board of health on or before the fifteenth day of October in each year.

*The act approved June 15th, 1895, requires that the annual report of the State Board of Health shall be completed one month earlier than heretofore. Local boards are therefore urgently requested to forward their reports to us as early as October 1st, if possible.*

Local boards are requested to include in their reports replies to the accompanying inquiries.

The State Board of Health desires to publish a comprehensive abstract of the reports of local boards, to show what degree of progress each sanitary district is making in the promotion and protection of the public health, and to this end local boards are requested to make a clear statement of the needs and sanitary defects of their districts, as well as to record the local hygienic advancement and give an account of official duties performed.

Very respectfully,  
**HENRY MITCHELL, M. D.,**  
 Secretary.

Municipalities.

ANNUAL REPORT  
OF THE  
LOCAL BOARD OF HEALTH OF

1. ....  
(Name of sanitary district.)

County of.....for the year ending October 1st, 1898.

2. Names and addresses of the members and officers:

NAMES.	ADDRESSES.
.....President.	.....
.....Member.	.....
....."	.....
....."	.....
....."	.....
....."	.....
.....Secretary.	.....
.....Inspector.	.....
....."	.....
....."	.....
.....Attorney.	.....

3. Estimated population.....  
4. Total number of dwellings.....  
5. Births and deaths:  
(a) Total number of births during year ending June 30, 1898.....  
(b) Total number of deaths during year ending June 30, 1898.....  
(c) Number of deaths under one year.....

6. Communicable diseases:

NAMES OF DISEASES.	Number of cases reported.	Number of Deaths.	Number of houses infected.	Number of outbreaks confined to the first house.
Diphtheria.....	.....	.....	.....	.....
Membranous Croup.....	.....	.....	.....	.....
Scarlet Fever.....	.....	.....	.....	.....
Typhoid Fever*.....	.....	.....	.....	.....
Small-pox.....	.....	.....	.....	.....
Varicoid.....	.....	.....	.....	.....

\*If typhoid fever has occurred, please state the origin of each case.

7. Do physicians promptly report communicable diseases?.....  
8. Water Supply: (a) Source.....  
(b) Sources of pollution.....  
(c) Average daily quantity used during the year.....  
(d) Number of dwellings connected.....  
(e) Have any extensions been made?.....  
(f) Improvements recommended.....

9. Sewerage: (a) Number of miles now in use.....  
(b) Number of premises connected with the sewers.....  
(c) Is the sewer system working satisfactorily?.....  
(d) How many premises have been connected during the past year?.....  
(e) Improvements recommended.....  
10. Garbage: (a) How is it stored, collected, transported and disposed of?.....  
(b) Is garbage collected under contract?.....  
(c) Frequency of removal.....  
(d) Number of vehicles, horses and men employed in garbage service.....  
(e) Cost of garbage removal for calendar year 1897.....  
(f) Is garbage, rubbish and ashes removed under supervision of the board of health?.....  
(g) Disposal of garbage.....  
(h) Is collection, removal and disposal of garbage conducted without creating nuisance?.....  
(i) Total number of cubic yards of garbage removed during year.....  
11. Rubbish and Ashes: (a) Disposal of rubbish and ashes.....  
12. Excreta: (a) Is control exercised over the location and construction of privy vaults and cesspools?.....  
(b) Disposal of night soil.....  
(c) Are abandoned wells used for cesspools?.....  
(d) Number of privy vaults in use.....  
13. Stables: (a) Number of stables.....  
(b) Is construction of stable floors and manure receptacles controlled by ordinance?.....  
14. Slaughter-houses: Any nuisances caused by these establishments?.....  
15. Nuisances: (a) Number investigated during the year.....  
(b) Number abated.....  
(c) Number of prosecutions for failure to abate nuisances.....  
(d) Offensive trades.....  
16. Food inspection: (a) Is the act of March 31, 1887, relating to the sale of impure foods, enforced?.....  
(b) Is the act of April 23, 1897, and the supplement of April 21, 1898, regulating the sale of milk, enforced?.....  
(c) Is a record kept of all persons engaged in the sale of milk?.....  
(d) Is a milk inspector employed?.....  
(e) Was the spread of disease traced in any case to the sale of contaminated milk?.....  
(f) Is there any regular inspection of milk depots and dairy premises?.....  
(g) Have any instances of food adulteration come to your knowledge?.....  
(h) Please communicate fully the facts concerning any cases of disease caused by polluted water, defective ventilation, over-crowding, or other forms of poisoning.....



- 13. Nuisances: (a) Number investigated during the year.....
- (b) Number abated.....
- (c) Number of prosecutions for failure to abate nuisances.....
- (d) Offensive trades.....
- 14. Food inspection:
- (a) Is the act of March 31, 1887 (section 12, sub-section 1), relating to the sale of impure foods, enforced?.....
- (b) Is the act of April 23, 1897, and the supplement of April 21, 1898, regulating the sale of milk, enforced?.....
- (c) Is there a regular inspection of dairy premises?.....
- (d) Is the water-supply of every dairy premises known to be pure?.....
- (e) Has the spread of disease, in any case, been traced to the use of infected or contaminated milk?.....
- (f) Have any instances of milk adulteration come to your knowledge?.....
- (g) Is a milk inspector regularly employed?.....
- 15. Diseases of animals: Please report any cases of diseases of animals which occurred.....
- 16. Ice: Is the cutting and sale of ice controlled by action under the provisions of the act of March 18, 1885, and the supplement of March 8, 1888?.....
- 17. Vaccination: Is vaccination generally practiced in your district?.....
- 18. Disinfection: Is your board equipped with efficient apparatus for cleansing infected buildings?.....
- 19. Isolation hospital: Has your board provided satisfactory facilities for isolating cases of the dangerous infectious diseases?.....
- 20. House-to-house inspections:
- (a) Does your board conduct house-to-house inspections at stated intervals?.....
- (b) Is any record kept of sanitary inspections?.....
- 21. Suits at law: Has any law suit been brought by your board for the enforcement of health laws or ordinances? If so, please report so much of the case or cases as may be useful for the guidance of other boards.....
- 22. New constructions: Has any water-works, sewerage system, hospital, disinfecting plant, garbage furnace or other sanitary apparatus or institution been established, enlarged or extended?.....
- 23. Meetings: How many meetings have been held by the board during the year?.....

Signature, official title and P. O. address of the person filling out this report.

.....  
 .....  
 .....

ATLANTIC COUNTY.

TOWN OF ABSECON.

MEMBERS AND OFFICERS--E. C. Bales, Daniel Walters, Jr., Japhet Adams, Bakeley Rieley, J. A. Mitchell, Jos. Smith; John R. Steelman, Secretary; E. H. Madden, M.D., Inspector.

Total number of dwellings in the town, 135. Number of births, 11; number of deaths, 12. No communicable diseases have been reported. No sewers. No public water-supply. Garbage is not collected under public supervision. No slaughter houses in the town. Vaccination is generally practiced, the epidemic of small pox which occurred several years ago having drawn the attention of the people of this community to the value of the protection afforded by this operation. Two meetings have been held by this board.

CITY OF ATLANTIC CITY.

MEMBERS AND OFFICERS--Wm. F. Koenke, M. D. Youngman, M.D, Arthur H. Stiles, Elwood H. Johnson, Thomas McDevitt, Wm. F. Clark; Wm. B. Loudenslager, Secretary; Aaron Hinkle, Inspector; A. T. Glenn, Clerk; Wm. F. Clevenger, Attorney.

Births reported, 476; deaths, 370; deaths under one year, 120. Communicable diseases were reported as follows: Diphtheria, 21; scarlet fever, 13; typhoid fever, 38. The water-supply, which is obtained from artesian sources, springs and Absecon creek, is supplied to about 3,700 premises, and the daily average quantity used during the winter season was 1,409,435 gallons. During the month of August the daily quantity pumped was 4,673,975 gallons. About 35 miles of sewers are now in use in the city, there being 4,300 connections, 300 of which were constructed during the past year. Garbage is collected under contract. The cost for removal during the calendar year 1897 being \$6,000. Collections are made daily and disposal is by cremation. Rubbish and ashes are disposed of by dumping on low-lying lots. Excreta is removed from the few privy vaults which are in use and converted into compost. Over 500 notices requiring abatement of nuisances were served. Twenty-two prosecutions were instituted for the enforcement of ordinances in nuisance cases. Meetings are held by the board every two weeks.

## ATLANTIC COUNTY—Continued.

## BUENA VISTA TOWNSHIP.

MEMBERS AND OFFICERS—Christian A. Gross, Landisville; Geo. A. Drake, Cedar Lake; Chas. Kohler, Buena; Alfred Pennock, Assessor, Buena; Douglas Reed, Secretary, Buena.

The following hamlets are located in the township—Buena, Richland, Mill May, Newtonville, Folsom, Landisville, Downstown, Minatola. One slaughter-house is located in the township, conducted by Mr. Eckhart, near Folsom.

## EGG HARBOR CITY.

MEMBERS AND OFFICERS—George F. Breder, Theo. H. Boysen, M. D., Wm. Mueller, Henry G. Regensburg; V. P. Hofmann, Secretary.

There are about 300 dwellings in the city. Births reported, 44, and 20 deaths, 4 of which were under one year. An extensive outbreak of measles occurred during the year; 98 cases having been reported. Twelve nuisances were abated. Twelve meetings were held.

## EGG HARBOR TOWNSHIP.

MEMBERS AND OFFICERS—Samuel A. Smith, English Creek; Walter Fifield, Bakersville; John A. Blackman, Steelmanville; Samuel C. Edmunds, Linwood; A. R. Vickers, Secretary and Assessor, Bakersville; Enoch Higbee, Attorney, Somers Point.

Bakersville and Steelmanville each have about 250 population; Scullville, 300; English Creek, 400; McKee City, 200; Risleytown, 100. Total number of dwellings in township, about 400. One fatal case of membranous croup occurred. Three nuisances were abated. Six meetings were held.

## GALLOWAY TOWNSHIP.

MEMBERS AND OFFICERS—H. Filling, Pomona; C. B. Somers, Oceanville; Joseph Lippincott, Port Republic; E. H. Madden, M.D., Absecon; F. W. Somers, Assessor and Secretary, Oceanville.

Fourty-four births were reported and 18 deaths. One meeting was held.

## ATLANTIC COUNTY—Continued.

## HAMILTON TOWNSHIP.

MEMBERS AND OFFICERS—L. B. Corson, W. N. Norcross, A. B. Crowell, Jos. Hammill, Assessor; M. H. Morse, Secretary; W. C. Wales, M.D.; Charles F. Abbott, Attorney. All of Mays Landing.

Births reported, 53; deaths reported, 34; deaths under one year, 9. Communicable diseases were reported as follows: Diphtheria, 2; scarlet fever, 1; typhoid fever, 5. One meeting was held during the year.

## HAMMONTON TOWNSHIP.

MEMBERS AND OFFICERS—Alex. Sutton, Daniel Ballard, Wm. Cunningham, John C. Anderson, Edward North, M.D., J. Louis O'Donnell, Secretary and Assessor.

Births reported, 123; deaths reported, 104; deaths under one year, 19. Sixteen cases of diphtheria were reported, 8 of which died. One case of scarlet fever and 3 cases of typhoid fever were also reported. Four meetings were held.

## MULLICA TOWNSHIP.

MEMBERS AND OFFICERS—Alex. J. McKeon, Pleasant Mills; Chas. Saalman, Egg Harbor City; Jno. D. Carver, Elwood; W. W. Phillips, Assessor, Elwood; John T. Irving, Secretary.

Elwood has 425 population, Pleasant Mills 90, Nesco 200, Weekstown 50, Agricultural 113. Births reported, 25; deaths reported, 10. One complaint was investigated and the nuisance was abated. One meeting was held.

## BOROUGH OF PLEASANTVILLE.

MEMBERS AND OFFICERS—Lewis H. Barrett, Richard Risley, Pardon R. Adams, Samuel Bartlett, Frank Rienar; John Sanders, Secretary; R. M. Sooy, M. D., Inspector.

There are about 300 dwellings in the borough. One case of diphtheria and two of typhoid fever were reported. Both of the typhoid cases were traced to polluted well-water. Monthly meetings

ATLANTIC COUNTY—Continued.

were held by the board. The following is the form of notification-blank prepared by the local board of the borough of Pleasantville and distributed to the physicians practicing in the vicinity :

*Board of Health of Pleasantville, N. J.*

.....189

The following is an extract from section 1 of chapter 260, 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 inspector 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.

BOROUGH OF SOUTH ATLANTIC CITY.

MEMBERS AND OFFICERS—Chas. Boggs, David B. Cristine, Josiah Norcross, Joseph Walch ; Chas. Hart, Secretary.

There are about 40 dwellings in the borough.

WEYMOUTH TOWNSHIP.

MEMBERS AND OFFICERS—P. W. Flanagan, Tuckahoe ; Andrew Campbell, Tuckahoe ; Robert L. Barringer, Risley ; Bernard M. Godfrey, Secretary and Assessor, Tuckahoe.

There are about 300 dwellings in the township.

BERGEN COUNTY.

BOROUGH OF ALLENDALE.

MEMBERS AND OFFICERS—Godfrey Pettis, M.D. ; Peter D. Rapelje, S. W. Brainard, John A. Mallinson, Martin H. Blauvelt, G. G. Smith, borough clerk ; J. W. De Yoe, attorney, Paterson.

Births, 5 ; total deaths, 4 ; deaths under one year, 1. Six meetings were held by the board.

BOROUGH OF BERGENFIELDS.

MEMBERS AND OFFICERS—Conrad Fricke, Howard Demerest, John J. Huyler, Fred. Brushacker, H. W. Vanderbeck, secretary ; J. E. Pratt, M.D., inspector.

Total number of dwellings, 106 ; number of births, 4 ; number of deaths, 3 ; number of deaths under one year, 1. One case of diphtheria and 2 cases of scarlet fever were reported. About 30 dwellings are connected with the public water-supply, which is obtained from the Hackensack river. The remaining dwellings obtain water from domestic wells. No sewers have been constructed. Three meetings were held by the board.

BERGEN TOWNSHIP.

MEMBERS AND OFFICERS—Alfred Hany, Wood Ridge ; Peter Lafald, Wood Ridge ; Conrad Kemmerer, Wood Ridge ; Frank Greuter, Secretary, Wood Ridge ; August Richter, M.D., Inspector, Carlstadt.

BOROUGH OF BOGOTA.

MEMBERS AND OFFICERS—A. G. Munn, Peter Bogert, Jr., Mr. Mannington, Mr. Walters, Peter F. Hopper, Secretary ; Wm. Hopper, Inspector.

Total number of dwellings, 64 ; number of deaths, 5 ; number of deaths under one year, 5. A public supply of artesian well-water is furnished to 52 dwellings in the borough, and a daily average of 4,600 gallons is pumped. About one mile of sewer pipes has been laid and 31 premises have been connected with the same. Thirty-



## BERGEN COUNTY—Continued.

four stables are in use in the borough. One meeting was held by the board. The well supplying water for public uses is 190 feet in depth. The following is an analysis:

HOBOKEN, November 5th, 1895.

## CERTIFICATE OF WATER ANALYSIS.\*

From whom received, Bogota Water Co. No. 2135.  
When received, October 30th. Title of Label, Bogota Water.  
Source of Sample, Well 175 feet; bored 155 feet through rock.  
Color, None. Limpid. Taste, Pleasant. Smell, None.

## DATA OBTAINED BY ANALYSIS:

	Parts in 100,000.	Grains per Gallon.
I. Free ammonia.....	0.001	0.0006
II. Albuminoid ammonia.....	0.001	0.0006
III. Oxygen required to oxidize organic matter.....	0.048	0.028
IV. Nitrites.....	Trace	
V. Nitrates.....	1.23	0.72
VI. Chlorine.....	0.588	0.34
VII. Total hardness.....	8.00	4.66
VIII. Permanent hardness.....	2.00	1.17
IX. Temporary hardness.....	6.00	3.49
X. Total solids.....	11.88	6.94
XI. Mineral matter.....	8.98	5.25
XII. Organic and volatile matter.....	2.90	1.69
XIII. Other data, when required for judgment.....	.....	.....

The mineral matter consists chiefly of carbonate of lime, sulphate of lime and sodium chloride. It gives a lively, palatable taste to the water. No copper, lead or other poisonous or injurious metals are present. Only a faint trace of iron.

## INTERPRETATION OF RESULTS:

This water is pure, wholesome and of superior quality.  
It contains almost no albuminoid ammonia, free ammonia or oxidizable organic matter.

The trace of nitrites and the large amount of nitrates are derived from the subterranean deposits, and in this case show nothing unfavorable to the character of the water.

The only drawback is that it is (as is usually the case with well-waters) somewhat harder than surface-waters, like the supply from the Hackensack river. But it is not hard enough to interfere with its use for washing and in laundries or boilers. You are to be congratulated on securing such good water.

Signed, ALBERT R. LEEDS, Ph.D.,  
Professor of Chemistry, Stevens Institute of Technology.

\* NOTE—The U. S. gallon is taken at 58,331.95 grains.

## BERGEN COUNTY—Continued.

## BOROUGH OF CARLSTADT.

MEMBERS AND OFFICERS—Frank Dunworth, Henry Kreiling, Jr., Charles Lonz, Christian Keimbrenner, Herman Foth; Secretary, Earnest F. Sickenberger.

Total number of dwellings, about 600; births reported, 70; deaths, 39; deaths under one year, 9. One case of diphtheria, 29 of scarlet fever and 1 of typhoid fever occurred. The typhoid fever case was traced to sources outside of the borough limits. About 300 dwellings are connected with the public water-supply, and cisterns are depended upon mainly by the remaining population. Eighteen complaints were investigated and 12 nuisances were abated. Fifteen meetings were held.

## BOROUGH OF CLIFFSIDE.

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

There are 110 dwellings in the borough. Births reported, 6; deaths, 14; 1 death under 1 year. Three nuisances were abated. Five meetings were held.

## BOROUGH OF DUMONT.

MEMBERS AND OFFICERS—O. G. Russell, S. F. Bogert, W. H. Voorhis; J. E. Pratt, M. D., Secretary.

No meetings were held.

## BOROUGH OF EAST RUTHERFORD.

MEMBERS AND OFFICERS—C. H. Coe, W. E. Ogden, M. D., A. De Vries; P. A. Jeanaret, Inspector; J. J. McGolrick, Secretary.

Births reported during year, 35; deaths reported during year, 37. Two cases of contagious diseases were reported, as follows: Typhoid fever, 1; scarlet fever, 1. Both of these cases are believed to have originated outside the borough limits.

## BERGEN COUNTY—Continued.

## CITY OF ENGLEWOOD.

MEMBERS AND OFFICERS—S. J. Demarest, H. Birtwistle, D. L. Barrett, J. W. Proctor, M.D., C. Lydecker, Jr., Secretary; C. Sweeney, Inspector; R. P. Wortendyke, Attorney.

Births reported, 72; deaths reported, 90. The following cases of contagious diseases were reported: Diphtheria, 7; scarlet fever, 14; typhoid fever, 2. The public water-supply is obtained from the Hackensack river. About 1,500 dwellings are connected with the supply. Garbage is collected by voluntary service. Fifteen meetings were held by the board.

## BOROUGH OF ENGLEWOOD CLIFFS.

MEMBERS AND OFFICERS—Wm. B. Dana, Englewood; A. Dean, M.D., Fort Lee; M. Chester, Fort Lee; E. C. Dillingham, Fort Lee; John G. Ropes, Secretary, Fort Lee.

The total number of dwellings in borough is fifty. Two nuisances were abated. Two meetings were held.

## BOROUGH OF FAIRVIEW.

MEMBERS AND OFFICERS—M. S. Ayers, G. F. Fahrenholtz, T. Henly, C. Ledon, H. F. Eggbert, F. H. Wendell, A. Grimm, Geo. A. Storms, Secretary; Samuel Wright, Attorney.

Number of dwellings, 175; births reported, 11; deaths reported, 11; deaths under one year, 5. Communicable diseases reported—diphtheria, 1; scarlet fever, 3.

Seven complaints were investigated during the year, and three nuisances were abated.

The class of nuisances which has given most annoyance to the board is that resulting from the casting of waste fluids upon the ground—house-owners frequently preferring to dispose of filthy water in this way instead of constructing cesspools into which to discharge such material. The drainage from dwellings is often conducted into the street gutter, causing filthy accumulations and giving rise to offensive

## BERGEN COUNTY—Continued.

odors. Some attention has been given to an improvement in the filling of sunken lots. At present these pieces of land receive the water from adjoining lots, which becomes stagnant, and therefore objectionable. Draining these lands would cost more than they are worth.

Fourteen meetings were held by the board.

## FRANKLIN TOWNSHIP.

MEMBERS AND OFFICERS—John P. Smith, Crystal Lake; Albert Lozier, Campgaw; Daniel M. Houten, E. W. Hanneton, M.D.; Inspector N. Y. K. of C., Oakland; John W. Ackerman, Assessor and Secretary, Oakland.

The following is a list of the unincorporated communities in the township: Oakland, population about 400; Wyckoff, population about 400; Campgaw, population about 200; Midland Park, population about 200; Crystal Lake, population about 200. Nineteen births were reported, 26 deaths. Four cases of diphtheria were reported, 5 cases of scarlet fever and 1 case of typhoid. No slaughter-houses are located in the township. One nuisance was abated. Three meetings were held.

## BOROUGH OF GARFIELD.

MEMBERS AND OFFICERS—Geo. S. Davenport, W. B. Hepworth, David Dwyer, Joseph Charett, P. J. Scandan, Secretary; Jacob Schwitzer, Inspector; A. D. Sullivan, Attorney.

Total number of dwellings is estimated to be about 1,200. Six cases of diphtheria and 8 cases of scarlet fever were reported. About half of the dwellings in the borough are connected with the public water-supply, which is obtained from artesian wells. Fifty complaints were received and over twenty nuisances were abated. Monthly meetings were held by the board.

## CITY OF HACKENSACK.

MEMBERS AND OFFICERS—Chas. Conklin, E. S. Emmons, R. G. Wool, Lemuel Lozier, W. P. Amerman, Geo. A. DeLoynes, A. E. Conklin, Secretary; Robt. Ballagh, Inspector; Frederick Holm, M.D., Inspector.

BERGEN COUNTY—*Continued.*

The following cases of contagious diseases were reported: Diphtheria 66, with 9 deaths; scarlet fever 22, with 1 death; typhoid fever, 2 cases. It is estimated that the sewers now in use in Hackensack are about eight miles in length. Garbage is collected under a voluntary arrangement and is dumped on the meadows. Sixty-six complaints were received during the year and all nuisances found to exist were abated. An ordinance has been adopted regulating the sale of milk. Twelve meetings were held by the board.

The following is a report of an inspection of the Bergen county jail, situated in the city of Hackensack, dated June 16, 1898:

"A few general improvements are noticeable in the cleanliness and management of the institution. Heretofore the prisoners have been allowed the privilege of the corridors, and the floors and walls were always in a somewhat filthy condition. On account of the attempted escape of one or two prisoners the system of locking the inmates in their cells has been adopted, only an hour or two being allowed the prisoners for exercise each day. As a result of this the corridors are now in a cleanly condition, the walls have been whitewashed, and the improvement in every way is noticeable as soon as one enters the door. The bath-room which heretofore has been in an unsatisfactory condition was fairly clean, but better fixtures should replace those which are at present old and somewhat worn. The only objectionable feature at present is the pail system, which could be very much improved by the introduction of some better form of pail and a systematized method of daily cleaning."

## HARRINGTON TOWNSHIP.

MEMBERS AND OFFICERS—Ward Varien, Closter; George E. Tooker, Demarest; Garrett Durie, Closter; Lewis B. Parsell, Closter; Wm. J. Demarest, Assessor and Secretary, Norwood.

Number of dwellings in township, about 725. Hamlets are located in the township as follows: Demarest, 500; Closter, 1,200; Norwood, 500; Northvale, 350; Alpine, 350; Haworth, 300. Births reported, 51; deaths reported, 45; deaths under one year, 11. Two cases of diphtheria were reported. Three meetings were held by the board.

## BOROUGH OF HASBROUCK HEIGHTS.

MEMBERS AND OFFICERS—Frank S. Flagg, E. L. D. Hester, A. K. Goodrich, Joseph S. Valentine; John G. Martin, Secretary; Wm. Lasker, M. D., Inspector.

BERGEN COUNTY—*Continued.*

Number of dwellings in borough, about 260. Number of births reported, 19; of deaths, 5; deaths under one year, 1. One case of diphtheria was reported and also one of typhoid fever. Thirteen meetings were held by the board.

## HILLSDALE TOWNSHIP.

MEMBERS AND OFFICERS—Edmund L. Greenin, Hilledale; Geo. H. Seaman, River Vale; Sanford Bogert, Hilledale; John A. Storms, Secretary.

Number of dwellings, 500. Four cases of diphtheria, one of membranous croup and six of typhoid fever have been reported. This township has been in existence since April 19th, and the board of health has held five meetings.

## HOHOKUS TOWNSHIP.

MEMBERS AND OFFICERS—James Devine, Mahwah; Wm. H. Pulis, Ramseys; Samuel May, Ramseys; C. P. DeYoe, M.D., Ramseys; John Ackerman, Assessor and Secretary, Wyckoff; Jacob J. Young, Inspector.

Total number of dwellings, about 550. Births reported, 51; deaths reported, 47; deaths under one year, 11. Two meetings were held.

## BOROUGH OF LITTLE FERRY.

MEMBERS AND OFFICERS—George Soll, John Clausen, Sr., Chas. Heuer, Abram Woods, Secretary; H. C. Elsing, M.D., Inspector.

Births reported, 54; deaths reported, 16; deaths under one year, 13. One case of scarlet fever was reported, but it is believed that other cases of communicable diseases may have occurred, because it is known that the physicians of the locality do not uniformly report all cases of this nature. One suit at law was brought by the board for the abatement of a nuisance due to an open ditch containing stagnant water, and the court decided that the nuisance might be abated by filling the ditch. Eighteen meetings were held.

## BERGEN COUNTY--Continued.

## BOROUGH OF LEONIA.

MEMBERS AND OFFICERS—M. M. Fullarton, P. A. Newell, H. D. Van Zandt, J. T. Wyckoff, C. H. Eaton; H. M. Thomson, Secretary and Registrar.

Total number of dwellings, 260; eight births, ten deaths and one death under 1 year were reported. One case of scarlet fever occurred. Twelve nuisances were abated. Fifteen meetings were held.

## BOROUGH OF LODI.

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

There are about 500 dwellings in the borough. Fifty-two births were reported, twenty deaths and five under one year. Six cases of diphtheria, ten of scarlet fever and one case of typhoid fever were reported. Four complaints were received and four nuisances were abated. Twelve meetings were held by the board.

## LODI TOWNSHIP.

MEMBERS AND OFFICERS—John Shultz, Little Ferry; Herman Schmidt, Woodridge; Chas. Kienzly, Little Ferry; Julius Pries, Woodridge.

Total number of dwellings in township, 90. Three meetings were held.

## BOROUGH OF MAYWOOD.

MEMBERS AND OFFICERS—Philip Thoma, Gustav Jaeger, D. S. Price, Chas. Schmincke; F. T. May, Secretary.

Number of dwellings, 75; deaths reported, 3; births reported, 5. Two cases of diphtheria occurred. Extensions of the water mains have been made during the last year. Four meetings were held.

## BERGEN COUNTY—Continued.

## BOROUGH OF MIDLAND PARK.

MEMBERS AND OFFICERS—Thomas Holt, John Klopman, Wortendyke; John L. Guyre, Wortendyke; Jacob Leenas, Secretary, Wortendyke; Henry Diephuis, Midland Park.

Dwellings in borough, 231; total births, 32; deaths, 24. Five cases of diphtheria and one of membranous croup were reported. Two nuisances were abated. Six meetings were held.

## MIDLAND TOWNSHIP.

MEMBERS AND OFFICERS—David H. Hopper, Hackensack; John G. Zabriskie, Arcola; John W. Winters, Oradell; Nicholas G. Hopper, Assessor and Secretary, Ridgewood; Wm. L. Vroom, M. D., Ridgewood.

Total number of dwellings, 236; births reported, 21; deaths reported, 29; deaths under one year, 2. One meeting was held.

## ORVIL TOWNSHIP.

MEMBERS AND OFFICERS—Harvey Springstead, Waldick; H. L. Hopper, Waldick; Abram T. Demarest, Hohokus; Jas. A. Osborn, Inspector; J. W. De Yoe, M. D.

Births reported, 36; deaths reported, 14. Four meetings were held.

## OVERPECK TOWNSHIP.

MEMBERS AND OFFICERS—M. Leinweber, J. W. De Groat, Hugh Innis, Carl Hallberg, Secretary; H. C. Elsing, M.D., all of Bidgefield Park.

Five cases of scarlet fever were reported. Twelve nuisances were abated. Seven meetings were held.

## BOROUGH OF PARK RIDGE.

MEMBERS AND OFFICERS—H. C. Neer, M.D., A. H. Barkerding, Henry Strohsahl, Emil Frahn, William Parks, W. D. Woodley, Secretary.

BERGEN COUNTY—*Continued.*

Number of dwellings in borough, 252; births reported, 30; deaths, 25; deaths under one year, 6. Five cases of typhoid fever were reported. The disease is believed to have been contracted in Westwood. One nuisance was abated. Two meetings were held.

## BOROUGH OF RIDGEFIELD.

MEMBERS AND OFFICERS—Gen. Alexander Shaler, E. Robinson, B. F. Underwood, M.D., M. A. Lemm, Secretary; S. G. Wright, Attorney.

There are about 100 dwellings in the borough. Five births were reported, and three deaths, all of which were under one year. Ten cases of scarlet fever and one of typhoid fever occurred. About 50 dwellings are connected with the public water-supply. There is about  $1\frac{1}{2}$  miles of sewers in the borough and 47 dwellings have sewer connections, five of which were connected during the past year. Garbage is collected under public contract, sixty dollars having been paid during the year. Collections are made daily from June 15th to October 15th. One nuisance was abated. Fourteen meetings were held.

## RIDGEFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Samuel Mabie, John A. Brandt, Julius M. Dubois; Chas. Corker, Secretary; Joseph Hüger, M.D., Inspector. All of Fort Lee.

Births reported, 57; deaths reported, 55—including 10 deaths under one year. Four cases of diphtheria were reported. Three nuisances were abated, and one suit was brought for penalty for failure to abate nuisance. Eighteen meetings were held.

## BOROUGH OF RIVERSIDE.

MEMBERS AND OFFICERS—Henry P. Stoney, Cherry Hill; Joseph H. Weston, Cherry Hill; Carl Hille, River Edge; Frederick H. Crum, River Edge; J. V. B. Veorhis, Secretary; G. H. McFadden, Hackensack; Milton Demarest, Attorney, Hackensack.

BERGEN COUNTY—*Continued.*

There are about 100 dwellings in the borough. Number of births reported, 9; deaths, 4. One case of diphtheria was reported. Four meetings were held.

## TEANECK TOWNSHIP.

MEMBERS AND OFFICERS—P. I. Ackerman, Hackensack; Jonathan Hawkins, Secretary, Englewood.

Total number of dwellings in township, about 150. One case of typhoid fever was reported, which was said to have originated in Jacksonville, Fla. One nuisance was abated.

## BOROUGH OF TENAFLY.

MEMBERS AND OFFICERS—J. J. Haring, M. D., S. G. Clarke, F. L. Colver, Richard Delahanty; J. B. W. Lansing, M. D., Secretary; E. W. Wakelee, Attorney.

Births reported, 19; deaths, 18; deaths under one year, 5. Several complaints were investigated and the nuisances discovered were abated. Monthly meetings were held by the board.

## UNION TOWNSHIP.

MEMBERS AND OFFICERS—Charles R. Searle, Lyndhurst; David Machette, Avondale; James McKenna, Kingsland; Dr. W. E. Trautwein, Lyndhurst; Thomas E. Buckley, Secretary, Lyndhurst; James Stinson, Lyndhurst; Henry Kehoe, Rutherford.

Lyndhurst and Kingsland each have about 600 inhabitants; River road has about 300. Total number of dwellings in township, 325. Three cases of diphtheria, two of scarlet fever and one of typhoid fever were reported. The typhoid case was traced to sources outside of the township. Two nuisances were abated. Twelve meetings were held.

BERGEN COUNTY—*Continued.*

## BOROUGH OF WOODCLIFF.

MEMBERS AND OFFICERS—Wm. English, Woodcliff; John H. Wortendyke, Woodcliff; G. J. Ackerman, Park Ridge; C. E. Felton, Hillsdale; David H. Tice, Saddle River; G. J. Wortendyke, Woodcliff, Secretary.

Total number of dwellings, 98. Four births and 6 deaths were reported. One case of diphtheria occurred. One meeting was held.

## BOROUGH OF WOODRIDGE.

MEMBERS AND OFFICERS—Joseph H. Schmitt, Edward C. Lirovano, Freeman Rohde, Wm. H. White, Secretary; Henry W. Ostrouskie.

Number of dwellings in borough, 123. Births reported, 8; deaths, 6; deaths under 1 year, 2. Cases of diphtheria reported, 2; scarlet fever, 1. Twenty-six houses are supplied with water from the Hackensack Water Company, and the water mains have been extended 800 feet during the past year. Five nuisances were abated. Twenty-two complaints were investigated. It is estimated that about 75 per cent. of the residents of Woodridge are protected by vaccination. Ten meetings were held.

## BURLINGTON COUNTY.

## BASS RIVER TOWNSHIP.

MEMBERS AND OFFICERS—John D. Sooy, Wading River; George F. Cramer, New Gretna; Ellis Mathis, New Gretna; John Cary, M.D., Lower Bank; A. E. Mathis, Assessor and Secretary, New Gretna.

## CITY OF BEVERLY.

MEMBERS AND OFFICERS—J. J. Currie, M.D., Chas. H. Peart, Geo. H. Smith, Reuben S. Hains, Wm. K. Vanskiver, C. F. Richardson, Inspector; B. F. Soby, M.D., Secretary.

BURLINGTON COUNTY—*Continued.*

Total number of dwellings in city, 500. Number of births, 37; number of deaths, 41. Communicable diseases were reported as follows: Scarlet fever, 6; typhoid fever, 1. Water-supply is obtained from the Delaware river and from domestic wells. No public sewers have been constructed, but a few houses are provided with drains which empty into the Delaware river. Refuse is collected by individual arrangement, but no regularity exists in the frequency of collection and removal. About thirty stables are in use in the city. Twenty-six nuisances were investigated. Eighteen meetings were held.

## BEVERLY TOWNSHIP.

MEMBERS AND OFFICERS—Wm. T. Boggs, Beverly; Robert Stuart, Beverly; W. W. Weiler, Delanco; H. K. Weiler, M.D., Delanco; Jos. B. Carter, Assessor and Secretary, Delanco.

There are about 400 dwellings in the township. Births reported, 18; deaths, 12; deaths under one year, 4. One nuisance was abated. Four meetings were held.

## CITY OF BORDENTOWN.

MEMBERS AND OFFICERS—Dr. L. D. Tebo, Edwin L. Thompson, Samuel E. Burr, G. B. Raymond, R. S. Bankle, Wm. H. Shipp, M.D., Secretary; H. N. Jobs, Inspector.

The city contains about 700 dwellings. Number of deaths, 73; number of deaths under 1 year, 8. Communicable diseases were reported as follows: Diphtheria, 22; scarlet fever, 4; typhoid fever, 18. The public water-supply is connected with 345 dwellings and about 350,000 gallons of water are used daily. The source of the water-supply remains unchanged. About one mile of sewers has been constructed. About 600 privy vaults are in use. Nuisances reported, 61; abated, 50. Fifteen meetings were held by the board during the year.

BURLINGTON COUNTY—*Continued.*

## BORDENTOWN TOWNSHIP.

MEMBERS AND OFFICERS—J. H. Longstreet, Milton W. Cox, R. S. Tatum, Wm. Warrack, Secretary; V. W. Macfarland, M.D., Inspector.

There are 120 dwellings in the township. Complaint is made of a bone-boiling establishment conducted by P. F. Nefie, but no steps have been taken by the local board to abate the nuisance. Meetings are held monthly.

## CHESTERFIELD TOWNSHIP.

MEMBERS AND OFFICERS—W. H. Foulks, Chesterfield; Charles E. Wallace, Chesterfield; E. M. Ridgway, Crosswicks; Newton H. Chaffee, M.D., Chesterfield; Charles B. Holloway, Assessor and Secretary, Chesterfield.

The following hamlets are located in the township: Sykesville, population about 100; Chesterfield, population about 115; Crosswicks, population about 316. Total number of dwellings in township about 285. Births reported, 9. One slaughter-house is located in the township, near Crosswicks, conducted by Willett Satterthwait. Hog cholera prevailed extensively in the township during the last three months of 1897, but no cases have occurred since then. Two meetings were held during the year.

## CHESTER TOWNSHIP.

MEMBERS AND OFFICERS—Charles Collins, Joseph Stokes, M.D., George Brock, Benj. Rogers, Secretary; F. G. Stroud, Inspector.

Number of dwellings, 965; number of births reported, 93; number of deaths reported, 63; number of deaths under one year, 19.

Communicable diseases reported: Diphtheria, 5; scarlet fever, 9; typhoid fever, 1; measles, 7. Water for the public supply of Moorestown is obtained from Pensauken creek, the average daily quantity pumped being about 125,000 gallons. About 375 dwellings are connected with the water mains. No sewerage system has thus far been introduced in Moorestown. Garbage collection is conducted

BURLINGTON COUNTY—*Continued.*

by voluntary service, the removal being about once a week. About 500 privy vaults are in use in Moorestown, and it is estimated that there are 300 stables located there. Fifty complaints were investigated, and all nuisances which were found to exist were abated. Four meetings were held by the board.

## CINNAMINSON TOWNSHIP.

MEMBERS AND OFFICERS—Clayton Conrow, Cinnaminson; Isaac Eval, Palmyra; Howard Taylor, Riverton; I. D. Janney, M.D., Inspector, Cinnaminson; Timothy Morton, Secretary, Parry; Wm. Lippincott, Attorney.

One case of typhoid fever occurred in the township.

## DELRAN TOWNSHIP.

MEMBERS AND OFFICERS—Franklin Murphy, Bridgeboro; John P. Brown, Bridgeboro; Samuel J. Painter, Bridgeboro; A. E. Conrow, M.D., Moorestown; Daniel A. Kendall, Assessor and Secretary, Riverton; G. M. Bacon, Attorney, Camden.

There are about 183 dwellings in the township. Eighteen births were reported, 10 deaths, 3 of which occurred in children under one year of age. One slaughter-house, managed by D. R. Ludlow, is located in Bridgeboro. Two meetings were held by the board.

## EASTAMPTON TOWNSHIP.

MEMBERS AND OFFICERS—Henry Githens, Southville; Prentice Comegys, Southville; J. M. Reeve, Southville; Geo. W. Craig, Assessor and Secretary, Southville; Samuel Caley, M.D., Mt. Holly; M. E. Matlack, Attorney, Mt. Holly.

Unionville has 150 inhabitants. Total dwellings in township 121. Thirty nuisances were abated. Three meetings were held.

## BURLINGTON COUNTY—Continued.

## EVESHAM TOWNSHIP.

MEMBERS AND OFFICERS—B. F. EVANS, W. J. EVANS, J. W. POWELL, P. V. B. STROUD, M. D., Secretary; R. H. LEEDS, Assessor. All of Marlton.

Dwellings in township, about 600. Eight births and 7 deaths were reported. There are two slaughter-houses located in the township near Marlton. Three meetings were held.

## BOROUGH OF FIELDSBOROUGH.

MEMBERS AND OFFICERS—Joseph V. Carter, Wm. I. Leonard, August Zeller, John Mealey, Inspector; Wm. Leatherbury, Secretary.

One hundred and four dwellings are located in the borough. Twelve births, 3 deaths and 1 death under one year were reported. Five cases of typhoid fever occurred. Five meetings were held by the board.

## FLORENCE TOWNSHIP.

MEMBERS AND OFFICERS—Charles Bowne, Dr. Baird, Wm. Kimball; John Kale, Assessor; John Adams, Secretary—all of Florence.

Total number of dwellings, about 400. Forty-eight births and 27 deaths were reported. Thirty-five cases of diphtheria were reported, with 5 deaths; 3 cases of membranous croup, with 1 death. The board held four meetings.

## MANALAPAN TOWNSHIP.

MEMBERS AND OFFICERS—Joseph C. Sutphen, Tennent; Daniel S. Aumack, Englishtown; Elijah M. Reid, Smithburg; A. T. Applegate, M. D., Englishtown; S. C. Bowne, Assessor, Tennent; G. B. Conover, Secretary, Englishtown; Samuel O. Cowart, Attorney, Freehold.

Milhurst has a population of about 60; Tennent, 40, and Taylors Mills, 55. Dwellings in township, 354. Births reported, 21; deaths, 22; number of deaths under one year, 1. Six cases of typhoid fever were reported, which were traced to a polluted well. One complaint was received and one nuisance abated. Two meetings were held by the board.

## BURLINGTON COUNTY—Continued.

## MANSFIELD TOWNSHIP.

MEMBERS AND OFFICERS—John B. Burtis, Georgetown; George Black, Columbus; John H. Day, Kinkora; G. W. H. Calver, M. D., Inspector, Columbus; Thomas A. Keeler, Assessor and Secretary, Columbus.

Columbus has 525 inhabitants; Kinkora 50, Georgetown 40, and Mansfield 80. Births reported, 19; deaths reported, 9; deaths under 1 year, 5. One case of scarlet fever was reported. There are three slaughter-houses in this township as follows: One near Columbus, managed by Robert B. Kerlin; one on Main street, Columbus, managed by Howard W. Parker, and one at Mansfield Square, conducted by Allen B. Shinn. One meeting was held.

## MEDFORD TOWNSHIP.

MEMBERS AND OFFICERS—J. Reeve, R. S. Braddock, M. D., L. L. Sharp, M. D.; William M. Potts, Assessor; J. Reeve, Secretary.

Medford has a population of 1,000. Total number of dwellings in township, 470. Number of births reported, 27; number of deaths reported, 30; number of deaths under one year, 7. Three slaughter-houses are located in the township as follows: One near Medford, managed by Benjamin J. Mingius, and two others near Medford, managed by John B. Lamb. Forty houses were inspected during the year. Water-mains have been extended. Two meetings were held.

## MOUNT LAUREL TOWNSHIP.

MEMBERS AND OFFICERS—Richard G. Dudley, Moorestown; Robert T. Evans, Masonville; William A. Wilkins, Masonville; William L. Martin, M. D., Rancocas; William P. Lippincott, Secretary and Assessor; O. L. Borton, Attorney.

The following hamlets are located in the township: Mount Laurel, population about 75; Fellowship, 100; Hartford, 125; Masonville, 150; Centerton, 50, and Colemantown, 50. Total number of dwellings in township, 500. One meeting was held by the board.



## BURLINGTON COUNTY—Continued.

## NORTHAMPTON TOWNSHIP.

MEMBERS AND OFFICERS—A. A. Anderson, T. L. Akins, Chas. Cowperthwait; M. H. Gervin, Secretary and Assessor; R. H. Parsons, M. D.; S. A. Atkinson, Attorney, all of Mount Holly.

Total number of dwellings in township, 2,040; number births reported, 75; number deaths reported, 150; cases of diphtheria reported, 9; scarlet fever, 19; typhoid fever, 4. Average daily quantity of water used in Mount Holly, 260,000 gallons; number of dwellings connected with the water-mains, 800. About three miles of sewers are in use, with which 100 premises are connected, five of them having been connected during the past year. About 50 complaints received by the board. Fifteen meetings were held by the board.

## PALMYRA TOWNSHIP.

MEMBERS AND OFFICERS—R. L. Temple, James Russell, Henry Kersmith, L. L. Sharp, M. D.; F. Blackburn, Secretary and Assessor.

Number of dwellings, about 550; births reported, 34; deaths, 31; deaths under one year, 5. One case of scarlet fever was reported. Twenty nuisances were abated. Twelve meetings were held by the board.

## BOROUGH OF PEMBERTON.

MEMBERS AND OFFICERS—J. P. Seaman, Leon Gable, Wm. H. Heisler, A. L. Johnson, Geo. Reily, Andrew Rorbach, James S. Thomas.

Total number of dwellings in the borough, 200. No meetings were held. No organization, the names given being of the mayor and council.

## RIVERSIDE TOWNSHIP.

MEMBERS AND OFFICERS—Edward Schwabenland, Alois Hemmerle, Xaver Walter, Wm. T. Stecher, Secretary; Emma P. Weeks, M.D., Inspector.

## BURLINGTON COUNTY—Continued.

One case of diphtheria, one of membranous croup and three of typhoid fever occurred. Four nuisances were investigated and abated. Six meetings were held.

## BOROUGH OF RIVERTON.

MEMBERS AND OFFICERS—J. C. S. Davis, C. C. Reinhard, A. J. Briggs, W. C. Wilson, Alex. Marcy, Jr., M.D., Secretary; Samuel Belden, Attorney, Bordentown.

Three cases of diphtheria and one of typhoid were reported. About 200 dwellings are connected with the public water-supply, the average quantity pumped daily being about 75,000 gallons. One and one half miles of sewers are in use. Twelve meetings were held.

## SPRINGFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Henry D. Rue, Wrightstown; Thomas L. Asay, Jacksonville; John A. Hancock, Columbus; Aaron H. Burtis, Secretary, Mt. Holly; Chas. K. Chambers, Attorney, Mt. Holly.

Only two returns of births were received by the recorder of vital statistics of this township. Ten deaths were reported, three of which were under one year. One death occurred from typhoid fever. Four meetings were held.

## WASHINGTON TOWNSHIP.

MEMBERS AND OFFICERS—J. W. Sooy, Green Bank; J. L. Williams, Wading River; T. R. Halloway, Jenkins; John E. Carey, M.D., Lower Bank; A. E. Koster, Secretary and Assessor, Green Bank.

One case of typhoid fever was reported. One meeting was held.

## WESTAMPTON TOWNSHIP.

MEMBERS AND OFFICERS—Samuel E. Rogers, Mt. Holly; Stewart McFarland, Jr., Mt. Holly; Amos Evans, Rancocas; W. L. Martin, M.D., Rancocas; H. B. Haines, Assessor and Secretary, Rancocas; Samuel A. Atkinson, Attorney, Mt. Holly.

Total number of dwellings in township, 250.

BURLINGTON COUNTY—*Continued.*

## WOODLAND TOWNSHIP.

MEMBERS AND OFFICERS—Victor Ritzendollar, Chatsworth; Chas. H. Pittman, Browns Mills; Constant LeDuc, South Park; Geo. Bozarth, Secretary and Assessor, Chatsworth.

There are about 80 dwellings in the township. Eight births and four deaths were reported, there being one death under one year. No meetings were held.

## CAMDEN COUNTY.

## CITY OF CAMDEN.

MEMBERS AND OFFICERS—H. F. Middleton, M.D., Wm. D. Moslander, M.D., S. G. Bushey, M.D., J. W. Fithian, M.D., Chas. Watson, R. H. Gaskill, Henry H. Davis, M.D., Eugene B. Roberts, Secretary; John F. Leavitt, M.D., Inspector; Henry B. Francis, Inspector; Jos. A. Starr, Inspector; J. Willard Morgan, Attorney; J. O. George, D.V.S., Meat Inspector.

There are about 13,500 dwellings in the city. Local record shows that during the year ending June 30th, 1898, 1,204 births were reported; 1,189 deaths occurred, 303 of which were children under one year. Communicable diseases were reported as follows: Diphtheria 167, with 35 deaths; membranous croup 25, with 17 deaths; scarlet fever 211, with 10 deaths; typhoid fever 165, with 14 deaths. The average quantity of water used daily during the past year is 16,000,000 gallons. Nearly all dwellings are connected with the public water-mains. Only a few houses in the outlying portions of the city depend upon surface wells.

There are forty-two miles of sewers in the city, with which about 8,000 houses are connected. Five hundred and twenty-one new sewer connections have been made during the past year. Garbage is collected under contract three times in each week. It is transported in covered vehicles to the crematory and incinerated. Four wagons are employed in this service. The total quantity of garbage collected and removed during the year was 1,800 tons. Rubbish and ashes are disposed of by dumping upon low-lying lots. About 5,000 privy vaults are still in use in the city. Night soil is collected and transported

CAMDEN COUNTY—*Continued.*

beyond the city limits. It is estimated that there are 500 stables in the city. Eight hundred and fourteen complaints were investigated and 752 nuisances were abated. One suit for penalty for failure to abate a nuisance was brought by the board. Two other suits were brought by the board, one for violation of the sanitary code relating to plumbing and one for the sale of impure food. Fourteen meetings were held by the board.

## CENTRE TOWNSHIP.

MEMBERS AND OFFICERS—Abram E. Rowand, Chews Landing; Howard M. Haines, Haddon Heights; Samuel Brown, Snow Hill; J. H. Jackson, Secretary, Magnolia; Oran A. Wood, M.D., Inspector, Magnolia; Francis D. Wheeler, Attorney, Mt. Ephraim.

Number of dwellings in township, 510. Five deaths occurred from typhoid fever. Two meetings were held during the year.

## BOROUGH OF CHESILHURST.

MEMBERS AND OFFICERS—Charles G. Heacock, Lemon Kohout, James Morrison, James Collins, John H. Clark; Jacob T. Humphries, Secretary.

There are 104 dwellings in the borough.

## DELAWARE TOWNSHIP.

MEMBERS AND OFFICERS—John A. Meredith, Haddonfield; Samuel K. Matlack, Haddonfield; Wm. T. Lippincott, Moorestown; Wm. B. Graff, Haddonfield; W. B. Jennings, M. D., Secretary and Inspector, Haddonfield.

Two meetings were held by the board.

## GLOUCESTER TOWNSHIP.

MEMBERS AND OFFICERS—Chas. H. Jenkins, Kirkwood; Albert J. Driver, Kirkwood; Wm. M. Godfray, Blackwood; Jas. L. Hurf, M. D., Inspector, Blackwood; Wm. T. Gibbs, Assessor and Secretary, Clementon; Chas. King Attorney, Kirkwood.

## CAMDEN COUNTY—Continued.

The following hamlets are situated in the township. Blackwood, population about 500; Clementon, population about 400; Magnolia, population about 200; Kirkwood, population about 300; Lindenwold, population about 300; Laurel Spring, population about 200; Chews Landing, population about 300; Grenloch, population about 150; Ariel, population about 100. Total number of dwellings in township, about 700. Births reported, 58; deaths reported, 77 (including those at alms house); deaths under one year, 12. Three cases of diphtheria were reported, with two deaths. There are six slaughter-houses located in the township, with the following owners: Geo. B. Lewis, Blackwood; James N. Willits, Blackwood; Firth Bros., Chews Landing; Wm. Kammer, Lindenwold; D. N. Brad-dock, Lindenwold; Samuel Firth, Grenloch. Twelve meetings were held by the board.

## BOROUGH OF HADDONFIELD.

MEMBERS AND OFFICERS—Wm. J. Boning, Edward B. Ansten, Chas. H. Hillman, W. B. Jennings, M.D., Inspector; Lawrance Glover, M.D.; Wm. H. Harrison, Secretary; Chas. R. Stevenson, Attorney.

Number of dwellings about 553. Births reported, 52; deaths reported, 66; deaths under 1 year, 9. Communicable diseases were reported as follows: Diphtheria, 39; membranous croup, 1; scarlet fever, 2; typhoid fever, 1 (township included). Garbage is collected and removed by volunteer collector, but ashes are removed by the borough authorities. Twenty complaints were investigated and all nuisances found to exist were abated. Twelve meetings were held.

## BOROUGH OF MERCHANTVILLE.

MEMBERS AND OFFICERS—D. H. Bartine, J. W. Marcy, M.D., A. A. Moses, F. W. Kleinz, G. C. Mick, W. B. Stewart, Secretary; Wm. H. Lewis.

There are about 310 dwellings in the borough. Fifty-eight births were reported, and 35 deaths. One case of scarlet fever and 2 cases of typhoid fever occurred. The average quantity of water pumped daily is 20,000 gallons. About 50 complaints were received during the year. Monthly meetings were held by the board.

## CAMDEN COUNTY—Continued.

## TOWN OF STOCKTON.

MEMBERS AND OFFICERS—W. E. Hancock, D. E. Todd, Arthur Truman, Chas. Irle, William R. Neff, Secretary; H. H. Sherk, M.D., Inspector; Jonas Miller, Attorney.

Number of dwellings in the town, 1,600. Births reported from January 1st to June 30th, 1898, 80; deaths for same period, 54. Thirteen cases of diphtheria, 1 of membranous croup, 5 of scarlet fever and two of typhoid fever occurred. A system of sewers is now under construction. The collection of garbage is performed by contract for six months, from May to November, for an annual cost of \$260; one man and one vehicle being employed in the work. Disposal of garbage is by distribution to piggeries outside of town limit. Complaints investigated, 40; nuisances abated, 35. Eight meetings were held.

## WATERFORD TOWNSHIP.

MEMBERS AND OFFICERS—Milford A. Bittle, Lewis V. Wills, Samuel P. Mitten M. D. Beckley, Assessor and Secretary; Dr. F. O. Stem, Inspector; Chas. I. Wooster, Attorney. All of Berlin.

Total number of dwellings, 612. Births reported, 97; deaths, 52. An effort is being made to make the local board of health more efficient.

## WINSLOW TOWNSHIP.

MEMBERS AND OFFICERS—Joseph G. Strock, Cedar Brook; Enoch Cordrey, Elm; George Ware, Sickleville; M. Birdsall, Secretary and Assessor.

Wilton, Welton and Winslow have each about 150 inhabitants. Number of dwellings in township about 1,000. Two meetings were held.

## CAPE MAY COUNTY.

## CITY OF CAPE MAY.

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

The law requiring reports of communicable diseases is not complied with. A sewerage system is being considered. Twenty meetings were held by the board.

## DENNIS TOWNSHIP.

MEMBERS AND OFFICERS—Charles E. Foster, South Seaville; Seth L. Hand, Dennisville; Joseph L. Springer, Belle Plain; Eugene Way, M.D., Dennisville; Leaming M. Rice, Jr., Assessor and Secretary, Dennisville.

Woodbine has 600 inhabitants; Eldora, 150; Belle Plain, 150; East Creek, 100; Dennisville, 600; South Dennis, 300; South Seaville, 250; Ocean View, 150; Clermont, 100; dwellings in township, 600. There is one slaughter-house at Woodbine, managed by Max Potashnick, and one at Dennisville, managed by Stiles Bros. One nuisance was abated. Two meetings were held.

## MIDDLE TOWNSHIP.

MEMBERS AND OFFICERS—V. N. Errickson, Dias Creek; Luther M. Swain, Swainton; Charles Ross, Cape May Court House; Julius Way, M. D., Cape May Court House; Stillwell H. Townsend, Assessor and Secretary, Cape May Court House.

Goshen has 500 population; Dias Creek, 300; Green Creek, 400; Cape May Court House, 700; Swainton, 300; Rio Grande, 300. Total number dwellings, 600. Four slaughter-houses are located in the township, two at Cape May Court House, one at Rio Grande, and one at Dias Creek. Two meetings were held.

## CAPE MAY COUNTY—Continued.

## LOWER TOWNSHIP.

MEMBERS AND OFFICERS—George Dickinson, Erma; Daniel Schellinger, Fishing Creek; Amasa B. Walters, Cold Spring; Wilson A. Lake, M. D., Cape May Court House; William C. Rutherford, Secretary and Assessor, Cold Spring; J. S. Leaming, Attorney, Cape May City.

The following hamlets are located in the township: Rio Grande, population 150; Fishing Creek, 200; Cold Spring, 300; Bay Side, 300; Cape May Point, 200; Swantown, 250. Number of dwellings in township, about 300. Two slaughter-houses are located in the township. One nuisance was abated. Seven meetings were held.

## UPPER TOWNSHIP.

MEMBERS AND OFFICERS—Theophilus Corson, Tuckahoe; Anthony B. Smith, Beesley's Point; Belford E. Smith, Tuckahoe; Randolph Marshall, M. D., Tuckahoe; Albert G. Corson, Assessor, Palermo; Jesse T. Young, Secretary, Beesley's Point.

Tuckahoe has about 350 inhabitants; Marshallville, 150; Petersburg, 200; Beesley's Point, 175; Palermo, 175, and Seaville, 200. Number of dwellings in township, 368. Births reported, 17; deaths, 13. Three meetings were held.

## OCEAN CITY.

MEMBERS AND OFFICERS—B. T. Abbott, N. B. Smith, Charles Edwards; W. Lake, Secretary; Jesse Conover, Inspector; A. B. Eadicott, Attorney.

Number of dwellings, 450; births reported, 39; deaths reported, 10; deaths under one year, 3. Artesian wells of an average depth of 775 feet furnish water to the city. About two miles of sewers are in use in the city and 230 premises are connected therewith; fifty connections were made during the past year.

## BOROUGH OF SEA ISLE CITY.

MEMBERS AND OFFICERS—C. H. Clouting, G. F. Rachor, H. A. De Roshe; N. Davis, M. D., Inspector; John Crouse, Secretary.

CAPE MAY COUNTY—*Continued.*

There are about 350 dwellings in the borough. Number of births, 4; deaths, 4; one death under one year. One case of scarlet fever occurred. Garbage is collected at an expense of \$50 per month, and it is disposed of by dumping on meadows; it is removed twice each week during the summer and once in two weeks during the winter. Two nuisances were abated. Monthly meetings are held by the board.

## BOROUGH OF WEST CAPE MAY.

MEMBERS AND OFFICERS—Thomas H. Hughes, Frank Newkirk, Chas. Swain, Edward Phillips; L. S. Eldredge, Secretary; Spencer W. Barnett, Inspector; Samuel F. Eldredge, Attorney.

There are two hundred houses in the borough. Births reported, 4; deaths, 4; two under one year, 1. Four cases of diphtheria were reported. One suit was brought to abate a nuisance. Seven meetings were held.

## CUMBERLAND COUNTY.

## CITY OF BRIDGETON.

MEMBERS AND OFFICERS—Alfred S. Sharp, Wm. Souder, Ellsmore Stites, M. D., Jacob G. Streets, M.D., Wm. H. Ballenger, Chas. E. Bellows, Jesse C. Davis; Clarence M. DuBois, Secretary.

The President makes the following report: It is much more pleasing, and indeed at times it may be policy, to laud the healthfulness of our city, and to emphasize its good points, which are legion, than to draw attention to its defects. But it strikes me that these things are so apparent when they exist that it is unnecessary to call attention to them. As a board of health it is our business to look rather upon the unpleasant side of things and give them the prominence they deserve for the purpose of disposing of or correcting them, and in doing this we are entirely within the domain of our duty, however painful it may be.

The first thing I shall mention in the absence of any apparent likelihood of a system of sewerage, which of course is in this city para-

CUMBERLAND COUNTY—*Continued.*

mount in importance, will be our water-supply. This question has been much discussed by the public within the past few months. I shall not recall to your minds the many unpleasant incidents connected with our battle for health in relation to polluted wells, but suffice it to say there has been much done to secure the closure of dangerous wells, and the people have been aroused. The subject of drainage is being studied, much to the public advantage. Naturally there are many who insist upon what they term their rights, even though they be filthy habits of casting slops on the ground near wells. Persons may force us to use more stringent measures, but we will have to await future developments.

It may be unpleasant to those in charge of our public water works to hear, and disagreeable to us as a people to know, that defects exist, but it is true and we are forced to mention it. I refer particularly to the sewer pipe stretching from the Ferracute Machine Works across our plant, together with the drainage from the east side of S. East Avenue, and unless the sewer pipe mentioned is carefully watched and prevented from leaking, and unless the drainage from S. East Avenue is prevented from running to within a few feet of our city well, and there saturating and contaminating the soil surrounding it, we will be in constant danger.

My attention has been called to the trash lots of the city, and particularly that one situated on Lincoln street, between Atlantic and Fayette streets. A more unsightly affair could not well be placed within our city limits.

It seems to me absurd for this board to order an annual cleaning up of the properties of our city, and then deposit the accumulation upon one or a few vacant lots within our city limits. The people in these localities are justified in complaining.

Slaughter-houses are said to be operating contrary to our city ordinance. This matter has been mentioned a number of times, but the complainants do not care to be known in the case. It seems to me, however, that formal complaints are unnecessary; if this board is made cognizant of a nuisance, it is our business to investigate and abate it. I would advise that our ordinance be enforced upon this line and that our inspector proceed at once to inspect every slaughter-house in the city.

CUMBERLAND COUNTY—Continued.

Experiments have shown that infection may be communicated by ingestion of tuberculous material, and it has been conclusively demonstrated that tuberculous milk is infective. Statistics show that ten to fifteen per cent. of the dairy stock in the eastern States is tuberculous, and the danger of infection from this source, in children, is therefore a very urgent one.

The subject of vaccination is worthy of our consideration, for it is being neglected in our city. If we were to follow the example of some of our sister cities upon this line we might wait until we have a few cases of small-pox, and in this way test the immunity of the vast number of children unvaccinated in this city. I think however it would be wise to insist upon this procedure as a means of prophylaxis.

The Secretary writes: During the year there has been a decrease of nearly 39 per cent. in the number of contagious diseases reported as compared with the previous year.

There has, however, been a marked decrease in the number of contagious diseases, with the exception of typhoid fever, which had an increase of 27 per cent. over the previous year. There were eight fatal cases of that disease, as against one the year before.

The following diseases have been reported to the Secretary:

Measles .....	23	cases reported, 2 deaths.
Scarlet Fever.....	24	" " "
Typhoid Fever.....	48	" " 8 deaths.
Diphtheria.....	15	" " 1 "
Croup.....	1	" " 1 "
Erysipelas.....	1	" " 1 "
Cerebro Spinal Meningitis.....	1	" " 1 "

Total cases reported, 113.

The list of deaths is as follows:

Marasmus .....	8
Erysipelas.....	1
Septicæmia.....	1
Typhoid Fever.....	8
Diphtheria.....	1
Croup.....	1
Diarrhœa (disease of children) .....	18
Consumption, male.....	11
Consumption, female.....	15
Acute lung disease.....	19
Brain and nervous disease of children.....	12

CUMBERLAND COUNTY—Continued.

Adult brain and spinal disease.....	30
Disease of heart and circulation.....	17
Kidney and Bladder Disease.....	11
Digestive and Intestinal Diseases.....	12
Cancer .....	7
Accidental deaths.....	6
Unclassified deaths.....	3
Old age.....	3
Rheumatism.....	1
Measles.....	2
Cerebro-spinal Meningitis.....	1
Pityriases Rubra .....	1
Stillborn.....	7

Total deaths, 196.

Death rate, allowing for an estimated population of 14,000, is 14 per thousand, being lower than for several years past.

The ages of persons dying during the year are as follows:

Stillborn.....	7
Under 1 year .....	14
From 1 year to 5 years .....	15
From 5 years to 20 years.....	13
From 20 years to 60 years.....	53
Over 60 years .....	67

Dr. D. R. Streets, the medical inspector, reports as follows:

Dr. M. K. Elmer, who was your medical inspector from April 1st, 1897, to November 18, 1897, says:

"I herewith send you, as requested, a report of the examinations made for the Board of Health from July to November 18, 1897, as follows:

- "Samples of well-water examined, 23.
- "Number reported as unfit for use, 14.
- " " " poor " " 5.
- " " " good " " 4.

"Properties inspected by order of the board, 9.

"Most of those found unfit for use were from open wells in the poorer class of tenement houses, with every evidence of surface drainage and filth reaching the water directly. If these wells, or any others found impure, were thoroughly cleaned out and the surroundings put in proper condition, it would be interesting to know how many would show that the water was good, or at least that the springs were not at fault, and how long they would remain so. This could only be determined by careful inspection and test examinations at stated intervals.

"It would also show to what extent the soil has become saturated and how much is due to bad hygienic surroundings."

## CUMBERLAND COUNTY—Continued.

Dr. Ellsmore Stites, who was physician from Nov. 18, 1897, to April 7, 1898, reports as follows:

"I beg leave to report that while physician to the Board of Health, I visited thirty-four properties and analyzed the water from four hundred wells.

"The inspection of properties was made with the view of determining whether those particular wells should be permanently closed, taking into consideration their surroundings, the grade of property and so forth.

"I may say only a few were ordered closed.

"I found only twenty-four of the four hundred wells examined that I considered free from sewage contamination, which you see is a very small percentage. After this experience with well-water I am led to the opinion that most of our well-water in the thickly populated portion of our town is contaminated."

Consulting the records in the Superintendent's office at the Bridgeton Water Works, I find that sixty-three of these wells have been abandoned and filled up and city water introduced. Two more were filled by the inspector, and I have been unofficially informed of a number that have been cleaned out, but as no samples of water from these wells have been presented for analysis, I am unable to state what effect said cleaning has had upon the water of said wells. The inspector, Mr. Bellows, informs me that among the four hundred properties he inspected fifty-six were using water from both wells and the hydrants, using well-water for drinking purposes during the summer months only, and that when their attention was called to the impurity of the well-water and the danger therefrom, that nearly all of these fifty-six wells were at once abandoned and the wells either filled up or boarded over. It would be interesting to know what effect cleaning these wells would have upon the water; but considering the expense attending the experiment and the uncertainty of the results, and the unanimity of opinion among sanitarians that a well once contaminated is always contaminated, I should advise you to hold fast to the conclusions you came to six or eight months ago, that is, that the only safe way to treat wells found to be impure is to have them filled at once, excepting only those which, upon inspection, showed some very apparent source of contamination which could easily be removed and permanently avoided.

The sanitary inspector reports that during the year 62 houses have been placarded for contagious diseases.

The majority of the complaints received during the year have been the result of our present inefficient modes of sewerage.

## CUMBERLAND COUNTY—Continued.

The most important work undertaken has been the house to house inspection of private wells for the purpose of discovering local sources of pollution.

In the investigation of typhoid fever cases reported to the board it was observed that, in nearly all the cases, water from private wells was used, which water, upon examination, was found unfit for drinking purposes; and the surroundings of the wells in a large majority of the cases were found very unsanitary.

Owing to the large number of typhoid fever cases reported to the board, and the opinion that the disease was due to polluted water from private wells, a resolution was adopted at the September meeting instructing the inspector to make a house-to-house inspection of the entire city. In making this canvass 976 wells were found to exist. Each well was carefully inspected as to the condition of the soil surrounding well, drainage, distance from well to cesspool or privy, slope of ground and condition of well-curb and pump-trough. Memoranda were made of owner of property, the street and number, and a complete record kept in book-form.

The result of this inspection has been a general cleansing by property-owners of all the wells of the city, and much defective drainage has been corrected. Only in a few instances have property-owners refused to comply with the board's orders. Throughout the city, wells are being constantly abandoned and replaced by the public water-supply.

Four hundred samples of well-water were obtained and chemical analysis made, resulting in nearly all being found unfit for drinking purposes.

The important subject of garbage collection and disposal should receive more attention by this board than heretofore. From early in April I have received complaints of swill-barrels overflowing and appeals have been made to me to send garbage collectors, which I am unable to do under present conditions. Sec. 45 of our Code requires householders to have garbage removed twice a week, from April 1st to November 1st, but not one in fifty comply with this rule, and to my mind it is impossible to enforce it. Furthermore, it is more than should be required of our citizens. All cities in our State, of the population of Bridgeton, have a system of collection and disposal of

## CUMBERLAND COUNTY—Continued.

garbage, the expense of which is met by the municipality. But as the expense of perfecting a system could not be accomplished with the present appropriation, I would recommend to the board that our Conference committee be requested to bring the matter to the attention of City Council, and in any event let us relieve the people of this nuisance, by some system, however crude, before the end of another year.

The cleansing of privies and cesspools as now performed, being collected by scavengers at night, dipped out and carried away in box wagons, is very unsatisfactory and it is to be hoped that before another year some improvement will be made in this line of work.

In my report of last year I called the board's attention to the large number of children of school age that were unvaccinated, but up to the present time this important matter has been given but little attention.

The school census of this year shows a total of 3,295 children of school age, with 2,001 unvaccinated. Conditions are therefore ripe for the general prevalence of small-pox.

The general health law authorizes boards of education, school trustees or other bodies having control of the public schools to prohibit the school attendance of any unvaccinated child and to decide how far revaccination shall be required. The apathy shown in the matter is surprising, when the large mortality is considered, as well as the simple manner by which protection can be secured. I would recommend that the board offer, once each year, free vaccination to all who are unable to pay for this service.

Bridgeton is in a satisfactory sanitary condition, barring the waste-water nuisance.

The streets and lanes are comparatively clean and every effort is made on the part of a large majority of our citizens to keep them so. The health of the city is excellent.

## DEERFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Pierce A. Krespack, Rosenhayn; Chas. Brooks, Finley Station; James Hand, Seeley; Chas. C. Phillips, M. D., Secretary, Deerfield street; Elijah R. Parvin, Assessor, Deerfield street.

Hamlets are located in the township as follows: Rosenhayn, estimated population, 500; Carmel, estimated population, 250; Deer-

## CUMBERLAND COUNTY—Continued.

field street, estimated population, 120. There are about 700 dwellings in the township. Number of births reported, 54; number of deaths reported, 32; number of deaths under 1 year, 5. Three cases of diphtheria occurred, all of which were fatal. The physicians who reside in the township uniformly report all cases of contagious diseases which occur in their practice, but cases which are treated by physicians living outside of the township are not reported, and the local board is not often informed of their existence unless death occurs. Four slaughter-houses are operated in the township, as follows: One located near Bridgeton is conducted by James Mitchell; another near Bridgeton is managed by Daniel Souder; one near Deerfield street is managed by Thos. M. Tice, and another in Deerfield street by Henry Hitchner. One complaint was investigated and one nuisance abated. Five meetings were held by the board.

## DOWNE TOWNSHIP.

MEMBERS AND OFFICERS—R. H. Lanning, Newport; Chas. T. Sheppard, Newport; Nathaniel Love, Dividing Creek; A. F. Glanden, M. D., Newport; Willis A. Stites, Assessor, Newport; Geo. R. Butcher, Secretary, Dividing Creek.

Newport is estimated to contain 600 inhabitants; Dividing Creek, 350. Total number of dwellings in township, 500. Two cases of typhoid fever were reported. A slaughter-house in Dividing Creek is conducted by Ellsworth Chance. One meeting was held by the board.

## FAIRFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Geo. B. Williams, James K. Lamont, John E. Ogden, James B. Mulford, Assessor; E. H. Whitticar, Secretary—all of Fairton; James Ware.

Number of dwellings in township, 450. One slaughter-house is maintained at Fairton and it is managed by James A. Whitticar.



## CUMBERLAND COUNTY—Continued.

## GREENWICH TOWNSHIP.

MEMBERS AND OFFICERS—Geo. W. Sloan, Isaac D. Brown, William H. Glaspey, S. M. Snyder, M. D.; Morris Bacon, Assessor and Secretary. All of Greenwich.

Greenwich having a population of about 450 and Springtown a population of 250, are situated in the township. Births reported, 27; deaths reported, 28. One case of scarlet fever occurred. One slaughter-house is located in the township, on Main street, in the village of Greenwich; it is conducted by A. E. Wheaton. One meeting was held.

## HOPEWELL TOWNSHIP.

MEMBERS AND OFFICERS—J. G. Dare, Seeley; H. W. Davis, Shiloh; James F. Glaspey, Bridgeton; Walter Minch, Assessor and Secretary, Shiloh.

Shiloh has 250 inhabitants and Roadstown about 100. Total number of dwellings in the township, 362. One case of diphtheria was reported. Two slaughter-houses are located in the vicinity of the city of Bridgeton, one being managed by H. D. Powell and the other by G. H. Barth.

## LANDIS TOWNSHIP.

MEMBERS AND OFFICERS—O. H. Adams, M.D., Joseph Hadsell, D. H. Burge, A. W. Outhauk; Richard Johnson, Assessor and Secretary.

There are about 900 dwellings in the township. Forty-six births were reported; 62 deaths; deaths under one year, 6. Ten cases of typhoid fever were reported. Only one slaughter-house is located in the township, and thus far this establishment has not caused complaint. Two meetings have been held.

## LAWRENCE TOWNSHIP.

MEMBERS AND OFFICERS—H. O. Newcomb, E. Bateman, M.D.; J. D. Mulford, F. M. Bateman, M.D.; H. S. Long, Secretary. All of Cedarville.

Hog cholera has prevailed to a considerable extent, one individual having lost over 100 animals. The board held no meetings.

## CUMBERLAND COUNTY—Continued.

## MAURICE RIVER TOWNSHIP.

MEMBERS AND OFFICERS—J. B. Lee, Delmont; Jeremiah Smith, Leesburg; Isaac McGann, Port Elizabeth; Henry Reeves, Secretary and Assessor, Leesburg.

Delmont has about 100 inhabitants, Port Elizabeth, 400; Bricksboro, 100; Dorchester, 300; Leesburg, 700; Heislerville, 300; Delmont, 300.

## CITY OF MILLVILLE.

MEMBERS AND OFFICERS—Edward Conover, Silas C. Smith, Richard Radcliffe, Wm. G. Champion, J. W. Wade, M.D.; L. H. Hogate, Secretary; Frank Bullock, Inspector.

Births, 205; deaths, 144; deaths under 1 year, 20. Communicable diseases were reported as follows: Diphtheria, 2; scarlet fever, 9; typhoid fever, 8. Average daily quantity of water supplied to the city is 350,000 gallons. About 600 dwellings are connected with the water-mains. Garbage and rubbish are collected and disposed of by voluntary collectors. Twelve complaints were made to the board and all nuisances discovered were abated. Six meetings were held by the board.

## STOW CREEK TOWNSHIP.

MEMBERS AND OFFICERS—H. E. Hoffman, Shiloh; J. H. Willis, Roadstown; E. H. Sheppard, Roadstown; E. S. Fogg, M.D., Shiloh; Chas. D. Fogg, Assessor, Shiloh; J. H. Fogg, Secretary, Shiloh.

Number of dwellings in township, about 500. Births reported, 22; deaths, 10; deaths under one year, 4. Two cases of diphtheria were reported. One meeting was held.

## BOROUGH OF VINELAND.

MEMBERS AND OFFICERS—Walter Foulkes, Robt. Pond, I. D. Eilenberg, Frank C. Flood; N. P. Marvel, Inspector; Wheaton Berault; John S. Halsey, M. D., Secretary.

CUMBERLAND COUNTY—*Continued.*

Number of dwellings in the borough is about 1,200; births reported, 108; deaths, 54; deaths under 1 year, 6. Eight cases of diphtheria, three of membranous croup, two of scarlet fever, and four of typhoid fever were reported. Average daily quantity of water used 400,000 gallons. Ten nuisances were abated. One suit was brought for the abatement of a nuisance which resulted in a judgment in favor of the board of health. An inquiry was made in response to a request from the local board of Vineland into the sanitary condition of the dairies supplying milk to this borough.

January 21st, 1898.

*Henry Mitchell, M. D., Sec. State Board of Health:*

SIR—In compliance with your directions, I have made an inspection into the condition of the dairies supplying milk to Vineland, N. J., and respectfully submit the following report:

About twelve hundred quarts of milk are sold daily in the borough of Vineland, nearly all of which is produced on twenty-one near-by dairies. A local ice-cream and milk dealer obtains his supply from Whiteker's Creamery, Roadstown, N. J. The dairies are mostly small, having from four to sixteen head of cattle, and, as a rule, each dairyman delivers his own product to the consumer.

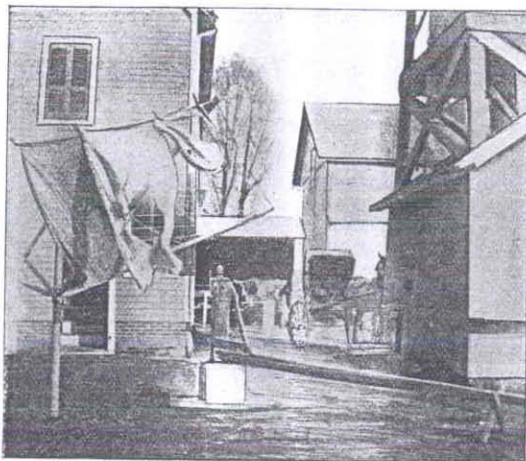
Eight dairies and one milk depot were inspected by me at this time, and while the cattle were well fed and housed, there was a deplorable lack of cleanliness on many of the dairy premises, both in and around the cow-stables, and no attention whatever is given to procuring a water-supply free from pollution.

In fact, the dairyman's attention seems never to have been drawn to the danger to life and health that are liable to arise through a contaminated milk-supply, and they appear to be imbued with the idea that all a dairy inspector could possibly be interested in is the commercial value of the milk—i. e., how much milk solids does it contain? On several dairies where the morning's milk had all been shipped, the dairyman offered and insisted that I should permit him to have a cow milked in my presence, that I might test the milk with a lactometer.

On some of these dairies the dung is removed from the stables and stored in large quantities on the outside of the stable, oftentimes separated from the cows only by a board partition, where it is left to remain from three to twelve months. Great value is placed on the manure by the dairymen in this vicinity, and I was informed by the proprietor of one of the best dairies inspected, that the manure which his cows made during the twelve months was worth as much to him for raising certain farm products as was the milk produced from his fine herd of fourteen Jersey cows.

In some of the dairies inspected the cows are curried before milking, and the udders and tits are dry-rubbed, but the work is performed by the same person

## CUMBERLAND COUNTY—Continued.



The Well has a Power Pump; the Cesspool has a Hand Pump.

who does the milking, and no washing of the hands or change of garments is made between the operation of cleaning and milking. The milker is generally one of the regular farm-hands, and when milking-time comes he leaves his work of carting manure, or whatever it may be, and proceeds without further preparation to the milking.

In reply to my question to a milker, asking him if he ever changed his garments or put on a fresh gown before milking, he replied that if he had on his good clothes he changed them for his old garments before performing milking.

The milking is done in open pails, and in most cases the milk is poured from the pail when full into cans which are kept standing in or near the stable door. In some instances milk-coolers are used and the milk is cooled and canned, ready for delivery to consumers, in the stable where it is milked, the air often-times being heavily impregnated with offensive odors emanating from manure-heaps and pig-pens.

On one dairy premises twelve cows and calves were kept in an enclosure in the cow-stable. There was about one cubic yard of manure in this pen. In another part of the same room some six or eight hogs were kept in a filthy and offensive pen. On another small dairy a hog pen was situated just outside of the stable door, the stable walls forming one side of the hog-pen.

The proprietor stated that the hog-pen was kept there for convenience in throwing the manure from the cow-stalls into the hog-pen to be worked over by the hogs, thereby increasing its value as a fertilizer. About three cubic yards of this offensive manure was being removed from the hog-pen at the time of my inspection.

But little milk is sold in bottles in this market. One dairy only was inspected where the entire product was bottled. No dairy was found with any facilities for sterilizing cans and utensils by the use of steam. The washing of pails, cans and bottles is usually performed at the kitchen sink, where they are rinsed and placed and afterward taken to the open air to dry.

On one dairy premises, otherwise having the general appearance of being well kept, a leaching cesspool was located within fifteen feet of the well. This well is five years old, and it is said to be forty-six feet deep.

Another well, about eighteen feet distant, which furnished the water-supply previous to the construction of the well first mentioned, was found to be dry. It was stated that this well went dry soon after the sinking of the last well. This being the case, it would seem that inasmuch as the new well robbed the old well of water, the cesspool, being nearer, would surely furnish its quota to the new supply.

On another dairy premises the water for watering the stock is taken from a well situated beneath the stable-floor, not more than sixteen feet distant from a pile of manure which is removed but twice a year. The water-supply for washing the cans and utensils on this premises is taken from a dug well beneath the kitchen floor, with a drain-pipe from the kitchen sink discharging waste fluids upon the surface of the ground not more than eight feet distant from the well.

## CUMBERLAND COUNTY—Continued.

These filthy fluids run over the surface of the ground for a distance of fifteen or twenty feet.

On the back stoop directly over this pool of slops, the milk cans and utensils are placed after washing to air and dry.

A detailed report on each dairy inspected is attached.

Respectfully submitted,

D. C. BOWEN.

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

RECORD OF DAIRY INSPECTION.

January 21st, 1898.

NAME OF DAIRYMAN—S. F. BOWEN (Tenant—Owner).

ADDRESS—Vineland, N. J.

TOWNSHIP—Landis. COUNTY—Cumberland.

*Stable.*

1. Size of stable—40 x 50 feet.
2. Area of stable—About 1,800 cubic feet. Cubic feet per cow—1,050.
3. Stable well lighted? Yes.
4. Number and size of windows in stable—.....
5. Material, construction and drainage of floor—Cement concrete laid level.
6. Method and frequency of cleaning—Floor kept sprinkled with sawdust.
7. Floor ever washed? No.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? No.
9. Ever limewashed? No.

*Water-Supply.*

10. Source of water-supply for watering stock—Well.
11. Distance of well from stable—Beneath stable.
12. Distance of well from manure pile—About 30 feet.
13. Distance of well from privy vault—No vault.
14. Is well apparently liable to contamination? Yes.
15. Source of water-supply for washing utensils and cans—Well.
16. If from well, describe surroundings—Well beneath building recently erected.
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of cows—Twelve. Breed—Grade.
19. State of health—Apparently good.
20. Ever examined? No. By whom?.....
21. Date of last examination—.....
22. Cows groomed?.....
23. Kind and quality of feed used—Grain and silo.
24. Cows pastured?.....

## CUMBERLAND COUNTY—Continued.

*Manure.*

25. How and where stored? In vault adjoining stable, also in hog-pen, located in stable building.
26. How frequently removed?.....
27. Quantity of manure at time of this inspection—About 4 cubic yards.

*Utensils.*

28. How washed and dried? Washed at kitchen sink and dried in open air.
29. Where are the utensils washed? At house.
30. Any appliance for sterilizing cans, pails and dippers? No.
31. Bottles—how washed and dried? None.

*Collection of Milk.*

32. Quantity of milk produced daily?.....
33. Are milkers' hands washed before milking? No.
34. Are clean garments put on? No.
35. Udders of cows cleaned? No. How?.....
36. When pail is full of milk what is done with it? Poured into cans.
37. Where does the can stand? In stable.
38. Is can kept covered? No.
39. Is milk cooled? Cream is separated by separator and skimmed milk fed to stock.
40. How long after milking?.....
41. To what temperature?.....
42. Is milk bottled? No.
43. How long after cooling?.....
44. Where is milk bottled?.....
45. Where is milk stored? Cream stored and churned.
46. How long is milk stored before being shipped?.....
47. Source of ice-supply—.....
48. If shipped, to whom and where? Not shipped.

*Distribution.*

58. Remarks—No milk sold from this dairy; made into butter.

D. C. BOWEN,  
Inspector.

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

RECORD OF DAIRY INSPECTION.

January 21st, 1898.

NAME OF DAIRYMAN—Wm. H. Bagnell (Tenant—Owner).

ADDRESS—Vineland, N. J.

TOWNSHIP—Landis. COUNTY—Cumberland.

## CUMBERLAND COUNTY—Continued.

*Stable.*

1. Size of stable—28 x 32 feet. (Basement.)
2. Area of stable—8,720 cubic feet. Cubic feet per cow—420.
3. Stable well lighted? Yes.
4. Number and size of windows in stable—Nine, 12 x 30 inches.
5. Material, construction and drainage of floor—Cement concrete well laid; no drainage.
6. Method and frequency of cleaning—Floor kept sprinkled with sawdust and daily cleaned.
7. Floor ever washed? No.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust?.....
9. Ever limewashed? Yes.

*Water-Supply.*

10. Source of water-supply for watering stock—Well.
11. Distance of well from stable—175 feet.
12. Distance of well from manure pile—200 feet.
13. Distance of well from privy vault—No vault.
14. Is well apparently liable to contamination? No.
15. Source of water-supply for washing utensils and cans—Same as above.
16. If from well, describe surroundings—Well is located in yard, 8 feet from house.
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of cows—16. Breed—Jersey.
19. State of health—Apparently good.
20. Ever examined? Yes. By whom? Dr. S. S. Cole, V. S.
21. Date of last examination—Recently.
22. Cows groomed? So claimed.
23. Amount, kind and quality of feed used—Grain.
24. Cows pastured? 12.

*Manure.*

25. How and where stored? In barnyard adjoining stable.
26. How frequently removed?.....
27. Quantity of manure at time of this inspection—About 25 loads.

*Utensils.*

28. How washed and dried? Washing of utensils performed in kitchen at dwelling and placed in open air to dry.
29. Where are the utensils washed? .....
30. Any appliance for sterilizing cans, pails and dippers? No.
31. Bottles—how washed and dried? None.

## CUMBERLAND COUNTY—Continued.

*Collection of Milk.*

32. Quantity of milk produced daily—100 quarts.
33. Are milkers' hands washed before milking?.....
34. Are clean garments put on? No.
35. Udders of cows cleaned?..... How?.....
36. When pail is full of milk what is done with it? Poured into can.
37. Where does the can stand? In barn above basement.
38. Is can kept covered? No.
39. Is milk cooled? Yes. How? By setting cans in pails of well-water and stirring.
40. How long after milking? Directly.
41. To what temperature? Of well water.
42. Is milk bottled? No.
43. How long after cooling?.....
44. Where is milk bottled?.....
45. Where is milk stored? On back porch, out of doors.
46. How long is milk stored before being shipped? Over night.
47. Source of ice-supply—None.
48. If shipped, to whom, and where?.....

*Distribution.*

49. Temperature of milk when delivered to customers?.....
50. Quarts sold from cans? All; 100 quarts.
51. Quarts sold in bottles? None.
52. Ever run short? Yes.
53. If so, where is supply obtained? Buy from Bowls.
54. How many persons handle the milk?.....
55. All in good health?.....
56. Date of last sickness among persons on dairy premises?.....
57. Diseases?.....
58. Remarks—Wind-mill attached to pump forces water into tank in hay-loft over stable.

D. C. BOWEN,  
*Inspector.*

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

RECORD OF DAIRY INSPECTION.

January 21st, 1898.

NAME OF DAIRYMAN—Cuno Becker (Owner).

ADDRESS—Vineland, N. J.

TOWNSHIP—Landis. COUNTY—Cumberland.

*Stable.*

1. Size of stable—About 24 x 24 feet.
2. Area of stable—About 3,700 cubic feet. Cubic feet per cow—453.
3. Stable well lighted? Yes.

## CUMBERLAND COUNTY—Continued.

4. Number and size of windows in stable.....
5. Material, construction and drainage of floor—Board floor, constructed so that cattle stand on elevated platform.
6. Method and frequency of cleaning—Droppings removed with shovel daily.
7. Floor ever washed? No.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust—No.
9. Ever limewashed? Yes.

*Water-Supply.*

10. Source of water-supply for watering stock—Driven well.
11. Distance of well from stable—About 100 feet.
12. Distance of well from manure pile—About 100 feet.
13. Distance of well from privy vault—No vault.
14. Is well apparently liable to contamination?
15. Source of water-supply for washing utensils and cans—Same source as for stock.
16. If from well, describe surroundings—Well about 15 feet distant from house and about 10 feet from leaching cesspool.
17. Was sample taken for analysis? Yes. Marks—V No. 1.

*Cattle.*

18. Number of Cows—8. Breed—Grade.
19. State of health—Good.
20. Ever examined? No. By whom?.....
21. Date of last examination.....
22. Cows groomed? No.
23. Amount, kind and quality of feed used—Meal, bran, middlings and oil-meal.
24. Cows pastured?.....

*Manure.*

25. How and where stored? On wooden floor on outside of stable.
26. How frequently removed? Weekly.
27. Quantity of manure at time of this inspection.....

*Utensils.*

28. How washed and dried? Washed with soap and water, wiped with towel and placed in open air.
29. Where are the utensils washed? At sink in dwelling.
30. Any appliance for sterilizing cans, pails and dippers? No.
31. Bottles—how washed and dried? None used.

*Collection of Milk.*

32. Quantity of milk produced daily? 48 quarts.
33. Are milkers' hands washed before milking? No.
34. Are clean garments put on? No.

## CUMBERLAND COUNTY—Continued.

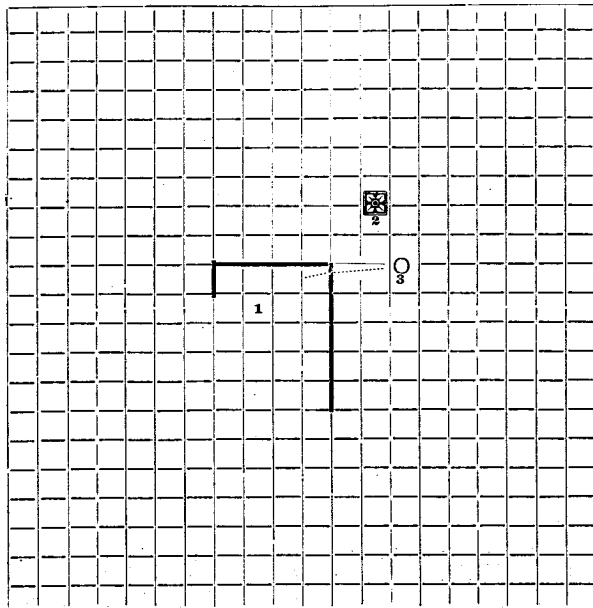
35. Udders of cows cleaned? Yes. How? Sometimes rubbed with milkers' hands.
36. When pail is full of milk what is done with it? Poured in can.
37. Where does the can stand? In stable (grain-room).
38. Is can kept covered? No.
39. Is milk cooled?.....How? No appliance for cooling.
40. How long after milking?.....
41. To what temperature?.....
42. Is milk bottled? No.
43. How long after cooling?.....
44. Where is milk bottled?.....
45. Where is milk stored?.....
46. How long is milk stored before being shipped? Not stored.
47. Source of ice supply? None.
48. If shipped, to whom, and where?.....

*Distribution.*

49. Temperature of milk when delivered to customers?.....
50. Quarts sold from cans? Forty-eight.
51. Quarts sold in bottles? None.
52. Ever run short? Yes.
53. If so, where is supply obtained? Bought from other dealers.
54. How many persons handle the milk? Two.
55. All in good health? Yes.
56. Date of last sickness among persons on dairy premises?.....
57. Diseases?.....
58. Remarks—The well is said to be a driven well 48 feet deep. It is near a leaching cesspool.

D. C. BOWEN,  
Inspector.

CUMBERLAND COUNTY—Continued.



- 1. Dwelling.
- 2. Wind mill tank and well.
- 3. Cesspool with pump. When cesspool is full its contents are pumped out on ground.

BOARD OF HEALTH OF THE STATE OF NEW JERSEY.

RECORD OF DAIRY INSPECTION.

January 21st, 1898.

NAME OF DAIRYMAN—Elmer Bump (Owner).  
 ADDRESS—Vineland, N. J.  
 TOWNSHIP—Landis. COUNTY—Cumberland.

*Stable.*

- 1. Size of stable—35 x 35.
- 2. Area of stable—14,700 cubic feet. Cubic feet per cow—1,050.
- 3. Stable well lighted? Yes.

CUMBERLAND COUNTY—Continued.

- 4. Number and size of windows in stable.....
- 5. Material, construction and drainage of floor—Cement concrete graded to center drain.
- 6. Method and frequency of cleaning—Kept clean and sprinkled with saw-dust.
- 7. Floor ever washed?.....
- 8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? Fairly so.
- 9. Ever limewashed? Yes.

*Water-Supply.*

- 10. Source of water-supply for watering stock—Well in open space between barn and house.
- 11. Distance of well from stable—About 50 feet.
- 12. Distance of well from manure pile—About 125 feet.
- 13. Distance of well from privy vault—No vault.
- 14. Is well apparently liable to contamination? No.
- 15. Source of water-supply for washing utensils and cans—Same well as above described.
- 16. If from well, describe surroundings.....
- 17. Was sample taken for analysis? No. Marks.....

*Cattle.*

- 18. Number of cows—14. Breed—Jersey and Holstein.
- 19. State of health—Apparently good.
- 20. Ever examined? No. By whom?.....
- 21. Date of last examination.....
- 22. Cows groomed? Kept clean.
- 23. Amount, kind and quality of feed used—Mixed grains.
- 24. Cows pastured?.....

*Manure.*

- 25. How and where stored? In especially constructed enclosures about 30 feet distant from stable.
- 26. How frequently removed? During spring and summer.
- 27. Quantity of manure at time of this inspection.....

*Utensils.*

- 28. How washed and dried? Washed at sink in dwelling and placed in open air to dry.
- 29. Where are the utensils washed?.....
- 30. Any appliance for sterilizing cans, pails and dippers? No.
- 31. Bottles—how washed and dried? No bottles used.

## CUMBERLAND COUNTY—Continued.

*Collection of Milk.*

32. Quantity of milk produced daily? About 60 quarts.
33. Are milkers' hands washed before milking? Yes.
34. Are clean garments put on? No.
35. Udders of cows cleaned? Yes. How? Dry rubbing.
36. When pail is full of milk what is done with it? Poured into cans.
37. Where does the can stand? Outside of stable.
38. Is can kept covered? With cloth strainer.
39. Is milk cooled? Yes. How? On cooler in summer.
40. How long after milking? Immediately.
41. To what temperature? Of air in winter and well-water in summer.
42. Is milk bottled? No.
43. How long after cooling?.....
44. Where is milk bottled?.....
45. Where is milk stored?.....
46. How long is milk stored before being shipped? Over night.
47. Source of ice-supply—None.
48. If shipped, to whom, and where? Vineland.

*Distribution.*

49. Temperature of milk when delivered to customers?.....
50. Quarts sold from cans?.....
51. Quarts sold in bottles?.....
52. Ever run short?.....
53. If so, where is supply obtained?.....
54. How many persons handle the milk?.....
55. All in good health?.....
56. Date of last sickness among persons on dairy premises?.....
57. Diseases?.....
58. Remarks.....

D. C. BOWEN,  
*Inspector.*

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

## RECORD OF DAIRY INSPECTION.

January 21st, 1898.

NAME OF DAIRYMAN—J. F. CORSON (Tenant—Owner).

ADDRESS—Vineland, N. J.

TOWNSHIP—Landis. COUNTY—Cumberland.

*Stable.*

1. Size of stable—About 14x16 feet.
2. Area of stable—1792 cubic feet. Cubic feet per cow—448.
3. Stable well lighted? Yes.
4. Number and size of windows in stable.....

## CUMBERLAND COUNTY—Continued.

5. Material, construction and drainage of floor—Board floor; no drainage.
6. Method and frequency of cleaning—Cows stood in dirty stalls with flanks matted with dung.
7. Floor ever washed? No.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? No.
9. Ever limewashed? No.

*Water-Supply.*

10. Source of water-supply for watering stock—Well.
11. Distance of well from stable—About 75 feet.
12. Distance of well from manure pile—About 90 feet.
13. Distance of well from cesspool—About 30 feet.
14. Is well apparently liable to contamination?.....
15. Source of water-supply for washing utensils and cans—Well beneath dwelling.
16. If from well, describe surroundings—Drain pipe from kitchen sink passes near well and discharges into leaching cesspool about 30 feet distant.
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of cows—Four. Breed—Jerseys.
19. State of health—Good.
20. Ever examined? No. By whom.....
21. Date of last examination.....
22. Cows groomed? No; but sadly in need of it.
23. Amount, kind and quality of feed used.....
24. Cows pastured?.....

*Manure.*

25. How and where stored? Adjoining stable building.
26. How frequently removed?.....
27. Quantity of manure at time of this inspection—A large pile (about 15 or 20 cubic yards).

*Utensils.*

28. How washed and dried? Washed at kitchen sink.
29. Where are the utensils washed?.....
30. Any appliance for sterilizing cans, pails and dippers? No.
31. Bottles—how washed and dried? None.

*Collection of Milk.*

32. Quantity of milk produced daily? 35 quarts.
33. Are milkers' hands washed before milking?.....
34. Are clean garments put on?.....
35. Udders of cows cleaned? No. How?.....



## CUMBERLAND COUNTY—Continued.

36. When pail is full of milk what is done with it?.....
37. Where does the can stand?.....
38. Is can kept covered? No.
39. Is milk cooled? Yes. How? By stirring in open cans.
40. How long after milking? Directly.
41. To what temperature?.....
42. Is milk bottled? No.
43. How long after cooling?.....
44. Where is milk bottled?.....
45. Where is milk stored?.....
46. How long is milk stored before being shipped?.....
47. Source of ice-supply.....
48. If shipped, to whom and where?.....

*Distribution.*

49. Temperature of milk when delivered to customers?.....
50. Quarts sold from cans? 35.
51. Quarts sold in bottles? None.
52. Ever run short?.....
53. If so, where is supply obtained?.....
54. How many persons handle the milk?.....
55. All in good health?.....
56. Date of last sickness among persons on dairy premises?.....
57. Diseases?.....
58. Remarks—Cows very dirty and stabled in dirty stalls.

D. C. BOWEN,  
*Inspector.*

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

## RECORD OF DAIRY INSPECTION.

January 21st, 1898.

NAME OF DAIRYMAN—John V. Nostrand (Owner).  
ADDRESS—Vineland, N. J.  
TOWNSHIP—Landis. COUNTY—Cumberland.

*Stable.*

1. Size of stable.....
2. Area of stable..... Cubic feet per cow.....
3. Stable well lighted? Yes.
4. Number and size of windows in stable.....
5. Material, construction and drainage of floor—Wooden floor; no drainage.
6. Method and frequency of cleaning—Manure frequently removed with shovel and fork.
7. Floor ever washed? No.
8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? No.
9. Ever limewashed? No.

## CUMBERLAND COUNTY—Continued.

*Water-Supply.*

10. Source of water-supply for watering stock—Well.
11. Distance of well from stable—Beneath stable.
12. Distance of well from manure pile—About 10 feet.
13. Distance of well from privy vault—No vault.
14. Is well apparently liable to contamination? Yes.
15. Source of water-supply for washing utensils and cans—Well.
16. If from well, describe surroundings—Box privy and open drain within 12 feet of well.
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of cows—2. Breed—Grade.
19. State of health—Good.
20. Ever examined? No. By whom?.....
21. Date of last examination.....
22. Cows groomed? No.
23. Amount, kind and quality of feed used.....
24. Cows pastured?

*Manure.*

25. How and where stored? In hog-pen adjoining stable.
26. How frequently removed? At long intervals.
27. Quantity of manure at time of this inspection—About 14 cubic yards.

*Utensils.*

28. How washed and dried?.....
29. Where are the utensils washed?.....
30. Any appliance for sterilizing cans, pails and dippers?.....
31. Bottles—how washed and dried?.....

*Collection of Milk.*

32. Quantity of milk produced daily?.....
33. Are milkers' hands washed before milking?.....
34. Are clean garments put on?.....
35. Udders of cows cleaned?..... How?.....
36. When pail is full of milk what is done with it?.....
37. Where does the can stand?.....
38. Is can kept covered?.....
39. Is milk cooled?..... How?.....
40. How long after milking?.....
41. To what temperature?.....
42. Is milk bottled?.....
43. How long after cooling?.....

CUMBERLAND COUNTY—*Continued.*

44. Where is milk bottled?.....
45. Where is milk stored?.....
46. How long is milk stored before being shipped?.....
47. Source of ice-supply.....
48. If shipped, to whom, and where?.....

*Distribution.*

49. Temperature of milk when delivered to customers?.....
50. Quarts sold from cans?.....
51. Quarts sold in bottles?.....
52. Ever run short?.....
53. If so, where is supply obtained?.....
54. How many persons handle the milk?.....
55. All in good health?.....
56. Date of last sickness among persons on dairy premises?.....
57. Diseases?.....
58. Remarks—The manure from cow-shed thrown into hog-pen to mix with hog-manure. The contents of pen were exceedingly offensive.

D. C. BOWEN,  
*Inspector.*

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

## RECORD OF DAIRY INSPECTION.

January 21, 1898.

NAME OF DAIRYMAN—Charles F. Sillman (Owner).  
ADDRESS—Vineland, N. J.  
TOWNSHIP—Landis. COUNTY—Cumberland.

*Stable.*

1. Size of stable—30 x 22 feet.
  2. Area of stable—6,720. Cubic feet per cow 1,340.
  3. Stable well lighted? Yes.
  4. Number and size of windows in stable.....
  5. Material, construction and drainage of floor—Board floor.
  6. Method and frequency of cleaning—Floor kept sprinkled with sawdust and frequently cleaned.
  7. Floor ever washed? No.
  8. Are sidewalls, ceilings and ledges kept free from cobwebs and dust? Yes, fairly well.
  9. Ever limewashed? Yes.
- Water-Supply.*
10. Source of water-supply for watering stock—Well in yard between dwelling and stable.
  11. Distance of well from stable—About 40 feet.

CUMBERLAND COUNTY—*Continued.*

12. Distance of well from manure pile—About 70 feet.
13. Distance of well from privy vault—No vault.
14. Is well apparently liable to contamination? No.
15. Source of water-supply for washing utensils and cans—Same well described.
16. If from well, describe surroundings.....
17. Was sample taken for analysis? No. Marks.....

*Cattle.*

18. Number of cows—Five. Breed—Grade.
19. State of health—Good.
20. Ever examined?..... By whom?.....
21. Date of last examination.....
22. Cows groomed? No.
23. Amount, kind and quality of feed used.....
24. Cows pastured?.....

*Manure.*

25. How and where stored? In barnyard and adjoining cow-stable.
26. How frequently removed? About three times yearly.
27. Quantity of manure at time of this inspection—Considerable.

*Utensils.*

28. How washed and dried? Washed at the house and placed in the sun to dry.
29. Where are the utensils washed?.....
30. Any appliance for sterilizing cans, pails and dippers? No.
31. Bottles—how washed and dried? At house over kitchen sink.

*Collection of Milk.*

32. Quantity of milk produced daily? 27 quarts.
33. Are milkers' hands washed before milking? No.
34. Are clean garments put on? No.
35. Udders of cows cleaned?..... How? Sometimes dry rubbed.
36. When pail is full of milk what is done with it? Poured into cans.
37. Where does the can stand? In stable.
38. Is can kept covered? No.
39. Is milk cooled?..... How?.....
40. How long after milking?.....
41. To what temperature?.....
42. Is milk bottled? Yes.
43. How long after cooling? At once.
44. Where is milk bottled? At house.
45. Where is milk stored? At house.
46. How long is milk stored before being shipped?.....
47. Source of ice-supply. None.
48. If shipped, to whom, and where?.....

## CUMBERLAND COUNTY—Continued.

*Distribution.*

49. Temperature of milk when delivered to customers? .....
50. Quarts sold from cans? None.
51. Quarts sold in bottles? 27.
52. Ever run short? Yes.
53. If so, where is supply obtained? Buy from Marshall.
54. How many persons handle the milk? .....
55. All in good health? Yes.
56. Date of last sickness among persons on dairy premises? .....
57. Diseases? .....
58. Remarks—In June, 1896, a cow was bought for this dairy which was afterwards believed to be affected by tuberculosis and was killed.

D. C. BOWEN,  
*Inspector.*

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

## RECORD OF DAIRY INSPECTION.

January 21st, 1898.

NAME OF DAIRYMAN—Harry E. Ford (Owner).  
ADDRESS—Vineland, N. J.  
TOWNSHIP—Landis. COUNTY—Cumberland.

*Stable.*

1. Size of stable—20 x 30 feet.
2. Area of stable—4 200 cubic feet. Cubic feet per cow, 600.
3. Stable well lighted? No.
4. Number and size of windows in stable.....
5. Material, construction and drainage of floor—Wooden floor; no drainage.
6. Method and frequency of cleaning—Poorly and infrequently cleaned.
7. Floor ever washed? No.
8. Are sidewalks, ceilings and ledges kept free from cobwebs and dust? No.
9. Ever limewashed? No.

*Water-Supply.*

10. Source of water-supply for watering stock—Well beneath stable building.
11. Distance of well from stable—It is beneath building.
12. Distance of well from manure pile—About 10 feet.
13. Distance of well from privy vault—No vault.
14. Is well apparently liable to contamination? Yes.
15. Source of water-supply for washing utensils and cans—Well beneath dwelling.
16. If from well, describe surroundings—Beneath kitchen floor. The ground about well polluted with slops.
17. Was sample taken for analysis? Yes. Marks, "V, No. 2."

## CUMBERLAND COUNTY—Continued.

*Cattle.*

18. Number of cows—7. Breed—Grade (one Jersey).
19. State of health—Good.
20. Ever examined? No. By whom? .....
21. Date of last examination.....
22. Cows groomed? No.
23. Amount, kind and quality of feed used.....
24. Cows pastured? .....

*Manure.*

25. How and where stored? In barnyard adjoining stable.
26. How frequently removed? Twice yearly.
27. Quantity of manure at time of this inspection—Large accumulation.

*Utensils.*

28. How washed and dried? Washed at kitchen sink, and set to dry in open air on back stoop over an open drain.
29. Where are the utensils washed? In kitchen at dwelling.
30. Any appliance for sterilizing cans, pails and dippers? No.
31. Bottles—how washed and dried? None.

*Collection of Milk.*

32. Quantity of milk produced daily? 25 quarts.
33. Are milkers' hands washed before milking? No.
34. Are clean garments put on? No.
35. Udders of cows cleaned? No. How? .....
36. When pail is full of milk what is done with it? .....
37. Where does the can stand? .....
38. Is can kept covered? .....
39. Is milk cooled? Yes, How? Cooler.
40. How long after milking? Directly.
41. To what temperature? .....
42. Is milk bottled? No.
43. How long after cooling?
44. Where is milk bottled? .....
45. Where is milk stored? .....
46. How long is milk stored before being shipped? Not stored.
47. Source of ice-supply—None.
48. If shipped, to whom, and where? .....

*Distribution.*

49. Temperature of milk when delivered to customers? .....
50. Quarts sold from cans? Entire amount.
51. Quarts sold in bottles? None.
52. Ever run short? Yes.

CUMBERLAND COUNTY—*Continued.*

53. If so, where is supply obtained? Buy from other dealers.  
 54. How many persons handle the milk? Three.  
 55. All in good health? Yes.  
 56. Date of last sickness among persons on dairy premises? .....  
 57. Diseases? .....  
 58. Remarks—Visible sources of pollution for each of the two wells on these premises are apparent.

D. C. BOWEN,  
*Inspector.*

## ESSEX COUNTY.

## BELLVILLE TOWNSHIP.

MEMBERS AND OFFICERS—W. H. Foster, C. Vanness, John Coeyman, Walter Fackrell, F. H. Ashworth; C. H. Winans, Assessor and Secretary; Harry Wadsworth, Inspector; Hon. A. F. Skinner, Attorney.

Number of dwellings, 800; births reported, 100; deaths, 42; deaths under 1 year, 20. The following communicable diseases were reported. Diphtheria, 26; membranous croup, 3; scarlet fever, 14; typhoid fever, 2. Water-supply is obtained from the East Jersey Water Company and from well. The daily average water consumption is 500,000 gallons. Number of dwellings connected, 400. Three miles of water-mains have been laid during the year. There are about 400 privy-vaults in use. Nuisances reported, 100, and all were abated. It was necessary to take legal action in two instances. Arrangements are being made for an isolation hospital. Monthly meetings are held.

## TOWNSHIP OF BLOOMFIELD.

MEMBERS AND OFFICERS—James H. Moore, G. Lee Stout, John A. Laurence, George Fisher, Richard K. Schuyler, Frank Foster, Thomas H. Albinson, Samuel H. Baxter, Wm. L. Johnson; Seymour S. Gilbert, Inspector; Charles H. Bailey, M.D., Physician; Charles H. Halfpenny, Attorney.

There are about 2,000 dwellings in the township; births reported, 190; deaths reported, 95; deaths under one year, 20. Communicable

ESSEX COUNTY—*Continued.*

diseases were reported as follows: Diphtheria, 10; scarlet fever, 12; typhoid fever, 8. About 1,000 dwellings are connected with the public water-supply, and 1,000,000 gallons is the average daily quantity used. The pipe line has been extended about two miles during the past year. Twenty-four miles of sewers are in use, there being 338 premises connected with the system, 70 of these having been connected during the past year. Garbage is collected by volunteer collectors, who are licensed by the board of health. Three hundred and twenty-five complaints were investigated and all nuisances found were abated. Six of the cases of typhoid fever which occurred in the township appeared in one dwelling, and it was found upon examination that the water-supply of this house was obtained from a well on the premises. Analysis of the water of the well showed contamination, and the well was consequently filled with earth. Six suits were brought by the board for violation of ordinances, and judgment was obtained in each case. Twelve meetings were held.

## BOROUGH OF CALDWELL.

MEMBERS AND OFFICERS—James Best, J. H. Budd, E. E. Peck, M. D., W. W. Wright; Thomas W. Bigg, Secretary; Adam Beam, Inspector; Thomas C. Provoost, Attorney.

Total number of dwellings in the borough, 225. The following communicable diseases were reported: Diphtheria, 1; scarlet fever, 17; typhoid fever, 1. The scarlet fever case was traced to the city of Paterson. About 225 privy vaults are in use in the borough. Four nuisances were abated. Six meetings were held by the board.

## CALDWELL TOWNSHIP.

MEMBERS AND OFFICERS—Charles Kent, Fairfield; Peter Johnson, Caldwell; George M. Canfield, Caldwell; J. R. Van Ness, Caldwell; Edward E. Peck, M. D., Caldwell; Theo. R. Vincent, Caldwell; Charles R. Leavitt, Secretary, Caldwell.

Deaths reported, 20; births, 27; deaths under one year, 6.

## ESSEX COUNTY—Continued.

## EAST ORANGE TOWNSHIP.

MEMBERS AND OFFICERS—Edward E. Bruen, Edward I. Condit, John H. Palmer, Wm. H. Baker, Chas. C. Vanderhoff, Wm. Cardwell, Andrew W. Baigrie, W. D. Mitchell, M. D., Thos. W. Jackson, S. W. Ougheltree, Edwin R. Crippen, George Dover, Wm. F. Poucher, Israel Dodd, D. C. Whitman, Chas. M. Matthews, Phillip C. Williams; Wm. T. Bowman, Inspector; H. H. Snedeker, Attorney.

There are about 4,500 dwellings in the township. Communicable diseases were reported as follows: Diphtheria, 25; membranous croup, 2; scarlet fever, 37; typhoid fever, 3. About 40 miles of sewers are now in use, there being 3,000 premises connected to the system. Refuse materials are disposed of under contract, removal occurring daily; the annual cost for this service for the past year was \$3,000. About 100 complaints were investigated, and three prosecutions were instituted for failure to abate nuisances; one of these cases was for the removal of a pig-pen, one for the abatement of nuisance caused by a foul cesspool, and one for violation of plumbing ordinance. Twelve meetings were held.

## FRANKLIN TOWNSHIP.

MEMBERS AND OFFICERS—Geo. B. Philhower, M.D., Lester Kierstead, Abram Blum, Jos. Searle, Herman Zoner, Max P. Kaufmann; F. Carlisle, Assessor; Adrian Vreeland, Secretary; Ernest Faith, Inspector. All of Nutley.

There are 475 dwellings in the township. Number of births, 66; number of deaths, 30; number of deaths under one year, 5. Seven cases of diphtheria, 10 of scarlet fever and 1 of typhoid fever were reported. About 300 of the dwellings in the township are supplied with water furnished by the East Jersey Water Co. Over half a mile of new water mains have been laid during the past year. Twelve nuisances were abated. Four meetings were held.

## BOROUGH OF GLEN RIDGE.

MEMBERS AND OFFICERS—H. C. Harris, M.D., F. C. Austerhout, E. E. Wright, Chas. T. Howe; H. K. Benson, Secretary; F. W. Crane, Inspector; Riker & Riker, Attorneys, Newark.

## ESSEX COUNTY—Continued.

Total number of dwellings, 325. Births reported, 28; deaths reported, 20; deaths under one year, 2. Three cases of diphtheria were reported, five cases of scarlet fever and two of typhoid fever. About 150 dwellings are connected with the public water-mains. About  $4\frac{1}{2}$  miles of sewers are in use and 150 dwelling are connected with the same, forty premises having been connected during the past year. Collection of garbage is under the supervision of the board. Service is performed twice weekly and is conducted under contract. Garbage is disposed of by spreading upon ground and covering with ashes. About 100 privy vaults are in use in the borough. Thirty horse-stables are situated within the borough limits. Two complaints were received and two nuisances abated. An ordinance has been adopted regulating the sale of milk, under the provisions of the act of April 23d, 1897, and the supplement of April 21st, 1898. One suit was brought by the board resulting in the infliction of the penalty for maintaining an overflowing privy vault. Fifteen meetings were held by the board.

## TOWN OF IRVINGTON.

MEMBERS AND OFFICERS—Wm. Clark, John Lockner, F. Ulrich, Albert Webb, James Bogons; Edwin Berry, Secretary; Ira Meeker, Inspector; Riker & Riker, Attorneys.

There are about 1,000 dwellings in the incorporated district. Births reported, 107; deaths reported, 63; deaths under one year, 14. Five cases of diphtheria, 6 cases of scarlet fever and 2 cases of typhoid fever were reported. The water-supply of the city of Newark is furnished to some portions of the town of Irvington. Garbage is collected under contract at an annual cost of \$600. Monthly meetings are held by the board.

## LIVINGSTON TOWNSHIP.

MEMBERS AND OFFICERS—George W. Morehouse, Livingston; John H. Parkhurst, Livingston; E. A. Williams, Roseland; Bern. M. Dickerson, Chatham; Wm. R. Johnson, Livingston; Geo. E. DeCamp, Secretary and Assessor, Roseland.

## ESSEX COUNTY—Continued.

Livingston has a population of about 400; Roseland, 400; Northfield, 200; Squiretown, 200; Washington Place, 100. Number of dwellings in township, about 220. Four meetings were held.

The following report in relation to an inspection made in Livingston township May 18th, 1898, is on file :

Livingston township is located between the Passaic river and West Orange township and has no thickly settled district within its limit, but consists almost entirely of a rural population. On this account it has been the custom of the garbage collector and scavenger of West Orange township to cart garbage and other refuse matters from West Orange and dump it in various parts of Livingston township. A person by the name of Chas. Minor (colored), who is engaged in this business, has purchased a farm on what is known as McClelland avenue and North Midway street, about three miles from the village of West Orange. It has been his custom to dump from one to three loads of garbage and refuse upon this farm to be used as fertilizer. There are no residences very near the farm, with the exception of that owned by T. M. Hoffman, which is located about three or four hundred feet from the point of dumping. Another residence, that of Mr. Kent, is on North Midway avenue, about one-quarter of a mile from Minor's farm. The dumping-ground was examined, but at the time of the inspection there was evidence that the owner had taken special pains to cover up and bury all decomposing matters so that no foul odor was noticeable, but there was evidence that in times past such precautions had not been taken. Formerly the owner had a large number of hogs to which garbage and swill, carted from West Orange, was fed, but on account of disease breaking out among the swine he was compelled to rid himself of them. Floors of the pens in which they were kept were covered with lime. Upon the day of inspection the fresh material which had been dumped upon an open lot was well covered with earth.

There is a small stream which runs through the property not over one hundred yards from where Mr. Minor is at present dumping garbage. This stream, after flowing about two miles, has its outlet in the Passaic river, and it is estimated that it is about eighteen miles by river from this point to the Passaic Falls. Mr. Hoffman and Mr. Kent were interviewed, and each of them stated that the stench arising from the dumping of garbage on Mr. Minor's property was at times and under certain atmospheric conditions absolutely unbearable. They have employed counsel and intend to take legal action to have the nuisance abated, as they state that the local board of health is unwilling to deal with the case. Under the circumstances I advised that inspections should be made from time to time and that the local board of health should pass ordinances to limit and control all such nuisances within the township. The following letter was addressed to George E. De Camp, Roseland :

"DEAR SIR: Our attention has been called to a nuisance caused by the dumping of garbage in Livingston township. The laws of this State governing local boards of health give ample power to your board to pass such ordinances as

## ESSEX COUNTY—Continued.

may be necessary to limit or control such operations so that no nuisance will be produced thereby. We enclose you copy of the law, and would suggest that your board should immediately take the matter into consideration and pass a suitable ordinance, and also that it would be wise for your inspector from time to time to visit Mr. Minor's farm and note and report the exact conditions."

Also the following letter was addressed to Mr. Charles Minor, in West Orange :

"DEAR SIR—A complaint has been received by this board in regard to the dumping of garbage on a farm owned by you in Livingston township, and an inspector of this board examined the premises May 18th, 1898, and it was evident at that time that an effort had been made to make such disposition of garbage as would render it as little objectionable as possible, but it was apparent that at other times such precautions had not been taken. The evidence of neighbors living in the vicinity was to the effect that foul odors had been noticed, and on that account they raised serious objection to the method used in storing garbage on your premises. There is no reason why you should not, by immediate covering of such material with ample quantities of dry earth, or ploughing it under, avoid creating a nuisance. We have advised the local board of health to take such action as will place them in a position to deal directly with the matter, should the nuisance be complained of in the future."

"NEWARK, N. J., June 2d, 1898.

"DEAR SIR—Your letter of May 28th, to Chas. H. Minor, of West Orange, has been handed to me to answer. Minor is a colored man, does the work of a public scavenger, and the refuse he collects he takes to a farm that he owns at Livingston, where he makes it into compost, by heaping it up, covering it with a layer of horse manure, and topping it off with lime. He declares that it is odorless, and that the nearest house to his compost-heap is fully six hundred feet away; and he denies that he has ever permitted this compost-heap to become a nuisance, or that it is dangerous to health. In the family on this farm are several children, and none of them suffer any ill effects from the compost. I have advised him to use all care, and to adopt your suggestion to keep the heap well covered with dry earth.

"He is a hard working, deserving man, and I do not want to have him get into trouble. If you have other complaints, you will oblige me if you will make known the fact to me, and I will investigate the matter personally, and if there is cause for complaint, will have him remove it.

"Yours respectfully,

"Sec'y State Board of Health.

W. BRADFORD SMITH."

## MILLBURN TOWNSHIP.

MEMBERS AND OFFICERS—L. B. Parill, G. W. Sopher, C. O. Lyon, Richard Hopkins, Geo. M. Taylor, W. Campbell, M. D.; John M. Drake, Secretary and Assessor; Abram Magee, Inspector; Adrian Riker, Attorney, Newark.

## ESSEX COUNTY—Continued.

Fifty births were reported and 29 deaths, 2 of which were under one year. Ten cases of diphtheria, 6 of scarlet fever and 1 of typhoid fever were reported. Twelve meetings were held.

The following report, relating to an inspection of a pond at Millburn, is on file in the office of the State board of health:

The pond, which is known as Campbell's pond, is located about one-half mile north of Millburn railway station and is owned by the city of Orange. It covers about 5½ acres and when it is full the depth of the water, in some places in the channel, is 10 feet, and it is 2 feet deep in the shallower places. On account of the recent fires in Orange, which called for the use of large amounts of water, the city authorities proposed to increase the water-storage capacity, and under the direction of Mr. F. S. Crane, the city engineer, the water has been drawn from Campbell's pond for the purpose of making surveys. The water was entirely out of the pond by the 8th of August and the work of the survey has been going on since that time and is still under way. The complaint is based upon odors arising from the mud bottom, which has been exposed to the sun. At the time of the inspection this was not as bad as it had previously been, on account of the drying-up of the surface. At the lower end of the pond a quantity of lime had been thrown over the surface of the mud, which caused some improvement. The nearest house is located at the head of the pond near the dam and there are no other houses within a quarter of a mile. The conditions are not entirely sanitary and the pond should not have been drawn off at this season of the year. It would be difficult to prove that a nuisance affecting health exists, but if the pond is to remain unfilled for any length of time the covering of the entire surface with lime would be a wise precautionary measure.

## TOWN OF MONTCLAIR.

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

There are about 1,900 dwellings in the town. Births reported, 226; deaths reported, 156; deaths under one year, 40. Communicable diseases were reported as follows: Diphtheria, 39—5 deaths; membranous croup, 1—1 death; scarlet fever, 14—no deaths; typhoid fever, 12—3 deaths. The average daily quantity of water supplied to the town by the public works is 1,000,000 gallons. Two thousand and six dwellings are connected with the public water-mains. Twenty-

## ESSEX COUNTY—Continued.

six and one-third miles of sewers are in use, with which about 1,000 premises are connected, and 250 premises have been connected with the system during the past year. Garbage is collected under contract by the town authorities. It is removed twice in each week, five vehicles, six horses and ten men being employed in this service. Twenty-four meetings were held by the board.

In this annual report Edwin B. Goodell, the attorney of the board, states:

The litigation with Henry Lehrmann, pending at the beginning of the year, has been terminated in favor of the board of health. Judge Child rendered a decision sustaining the demurrer interposed by the board, and holding that boards of health, as constituted in the State of New Jersey, are not liable in their corporate capacity to an action of trespass.

There has been considerable activity during the year in compelling owners of houses to connect with the sewer. I have written letters to a large number of persons, and have brought action against fourteen. Most of these actions were undefended, and in nearly every case resulted in an acquiescence by the defendant in the demands of the board and the making of the connection required. In all such cases the fine has been remitted and the defendant required to pay the costs of the proceeding only. The only case in which a defense was interposed was the case against Henry Lehrmann, Jr. This proceeding resulted in a conviction, and the defendant has taken an appeal to the Court of Common Pleas.

Two cases of tenement houses kept in bad condition have been brought to the attention of your counsel. In one case the repairs necessary were such as could be done by the board of health, and in that case I advised the inspector to serve a notice on the owner specifying the things required to be done, and notifying her that unless she had them done within a specified time the board of health would do them at her expense. I was subsequently informed by the health inspector that this was done, and that the repairs were made under his direction. The owner of the premises afterwards paid the board of health, through me, the sum of \$33.50, being the cost of the work.

The other tenement house was in such condition that it was impracticable for the board of health to put it in repair. There seemed to be two courses which might be pursued. The first to bring an action for an injunction against the use of the premises in their present condition, on the ground that they constituted a public nuisance. The alternative was to attempt to procure an indictment of the owners for maintaining a public nuisance. As to the second method I consulted with the Prosecutor of the Pleas, and with him carefully canvassed the law bearing on the case. The Health Inspector, with witnesses, attended at the rooms of the Grand Jury for the purpose of giving evidence, but no opportunity was afforded them on that day on account of pressure of other business. As we had taken pains, however, that the owners of the building

## ESSEX COUNTY—Continued.

should know of our attempt, the result was quite satisfactory. I am informed that the building has been put in thorough repair, under the direction of the health inspector, at the expense of the owners, and that it is now a model tenement house.

The remedies which can be enforced against owners of tenement houses who keep their premises in a filthy, dilapidated and unsanitary condition are not satisfactory under our present statutes. It is to be hoped that some additional legislation which will more effectually regulate this evil may be had in the near future.

In addition to the above matters there has been one conviction for allowing garbage to accumulate in an open lot; one conviction for permitting a wagon load of garbage to stand in an open lot for several days until it became putrid; one conviction for throwing fecal matter into a brook and fouling the water, and one conviction of a householder with young children, for keeping his premises in a filthy and unsanitary condition. In four cases recovery has been had for the expense of abating nuisances by the board of health after notice.

In the foregoing report I have made no mention of the various matters in which I have been consulted by your inspector, but have taken no active part in the work which was the subject-matter of the conference. At the request of your board I have drafted an ordinance regulating the keeping of swine, and also examined, with reference to legal questions, the ordinance regulating the sale of milk.

Mr. Marshall O. Leighton, Inspector, reports as follows:

The improvements in the general sanitary condition of Montclair during the past year are numerous and important, especially those resulting from the extension of the lateral sewerage system. Realizing that in no other manner can the pollution of ground and water be so effectually eliminated as by the construction of sewers, efforts have been made to secure the extension of laterals in streets where the nature of the soil, or contiguous settlement, has made them especially necessary. The construction of sewers in Talbot street, Bellevue avenue (from Valley road west), Midland avenue (from Chestnut street north), and Bloomfield avenue (from Elm street east) has been productive of great benefit.

The general sanitary condition in the older part of the town, especially among the Italian population, is greatly improved. Certain streets which, a year ago, were filthy because of the amount of waste water thrown upon them, are now relieved from it, and the wastes are carried into proper receptacles. Tenement houses which have in the past given offense, have been provided with approved sanitary appliances, and a number of polluted wells have been abolished.

At no time during the year has any contagious disease been prevalent to an extraordinary degree, except that occasioned by the outbreak of measles in the First ward, which had its inception previous to the beginning of this year. Inspection of the disease map shows no plainly marked centers of distribution.

## ESSEX COUNTY—Continued.

The area referred to in my last report as being specially unhealthy, now presents only a few scattering cases of disease. This area has been radically improved in sanitary condition during the past year.

In reviewing the records since the establishment of the board, the influence of school attendance upon the spread of contagious disease is at once apparent. Table I, covering the past four years, indicates the remarkable increase in the disease rate during the school year, in spite of the stringently enforced rules which exclude from school all children having any connection with quarantined cases:

	SCARLET FEVER.		DIPHTHERIA.		MEASLES.		Total Average.
	Cases.	Average per Month.	Cases.	Average per Month.	Cases.	Average per Month.	
June 22 to September 10, 1894.....	7	2.1	0	0	4	1.71	14.7
Sept. 10, 1894, to June 21, 1895.....	39	4.19	6	0.65	3	0.33	5.16
June 21, 1895, to Sept. 9, 1895.....	1	.43	0	0	0	0	.43
Sept. 9, 1895, to June 29, 1896.....	16	1.7	17	1.8	69	7.27	10.74
June 29, 1896, to Sept. 14, 1896.....	1	.43	1	1.43	2	.85	1.71
Sept. 14, 1896, to June 18, 1897.....	72	7.89	16	1.75	72	7.89	17.54
June 18, 1897, to Sept. 13, 1897.....	2	.75	0	0	25	8.62	9.31
Sept. 13, 1897, to June 24, 1898.....	13	1.4	33	3.55	82	8.79	13.71

The exceptionally high rate during the vacation season in the summer of 1897 is due to the fact that an epidemic of measles was in full progress when the schools closed, and a number of cases resulting from it occurred during the first part of the vacation. It is worthy of note, however, that within three weeks after closing the schools the disease had subsided.

Eleven cases of typhoid fever have been reported during the year, a decrease of six from the total of 1896-1897.

Very little information could be found concerning the origin of the cases above mentioned. Many were complicated by the fact that the patients were in business in New York previous to the onset of the disease, and therefore lived only a part of the time in Montclair. In four cases, badly polluted well-water was found to be in use. Certain it is that no cases of direct infection have occurred in Montclair, nor has there been any reason to suspect either the public water or the milk-supply.

TABLE SHOWING TYPHOID FEVER FOR THE FOUR YEARS ENDING MAY 31st, 1898.

	1894-5.		1895-6.		1896-7.		1897-8.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
June.....	2	0	3	1	1	0	0	0
July.....	2	0	0	0	2	0	3	1
August.....	19	0	0	0	1	0	0	0
September.....	2	0	2	0	8	2	3	0
October.....	2	0	0	0	0	0	0	0
November.....	0	0	6	1	0	0	1	1
December.....	0	0	3	0	3	0	1	1



## ESSEX COUNTY—Continued.

	1894-5.		1895-6.		1896-7.		1897-8.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
January.....	1	0	2	0	0	0	0	0
February.....	0	0	0	0	0	0	0	0
March.....	0	0	1	0	1	1	1	0
April.....	2	2	0	0	1	0	1	0
May.....	3	1	2	0	0	0	1	0
Totals.....	33	3	19	2	17	3	11	3

During November and December, 1897, an abnormal amount of diphtheria was prevalent in the central and northern sections of Montclair. The former seemed to be grouped closely about the Central Primary School, particularly in the kindergaten, where it was exceedingly difficult to find evidences of a clear case of transmission, because of the promiscuous distribution of objects for instruction unavoidable in this grade. As soon as it was reasonably certain that the kindergarten furnished means for the spread of the disease, the entire apparatus was disinfected with corrosive sublimate solution, with the result that the outbreak subsided.

In upper Montclair, the cases could not be traced so closely to a single department, but inasmuch as the disease suddenly disappeared at the Christmas recess, it is probable that the school was a factor at least in communicating the contagion.

Antitoxin has been used in twenty of the thirty-three cases reported. Two deaths have occurred in cases where it has been employed, but in one the physician was not called until the patient had passed into a moribund condition, and in the other death occurred from heart failure after the patient had recovered. Of the remaining thirteen in which no antitoxin was used, three ended fatally. Eight of these were very light cases, in which the serum would have been applied by the physician in attendance had circumstances warranted its use. Table III shows the number of diphtheria cases and deaths from the disease by months for the past four years:

TABLE SHOWING DIPHTHERIA FOR THE FOUR YEARS ENDING MAY 31st, 1898.

	1894-5.		1895-6.		1896-7.		1897-8.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
June.....	2	0	0	0	5	2	2	0
July.....	0	0	0	0	0	0	1	0
August.....	0	0	0	0	0	0	0	0
September.....	0	0	3	2	0	0	2	0
October.....	1	0	1	1	4	1	0	0
November.....	0	0	4	1	0	0	11	2
December.....	1	0	1	1	0	0	11	3
January.....	0	0	0	0	2	0	8	0
February.....	2	0	1	0	0	0	2	0
March.....	0	0	1	0	1	0	1	0
April.....	1	0	1	0	1	0	0	0
May.....	3	2	0	0	4	1	3	0
Totals.....	10	2	12	5	17	4	41	5

## ESSEX COUNTY—Continued.

Since the small epidemic, commencing May 4th, 1897, and running through a part of the following month, Montclair has been comparatively free from scarlet fever. Against three deaths which occurred last year, there are none to record at the present writing. Here, as in many other places, endemic scarlet fever seems to be slowly dying out.

TABLE SHOWING SCARLET FEVER FOR THE FOUR YEARS ENDING MAY 31st, 1898.

	1894-5.		1895-6.		1896-7.		1897-8.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
June.....	6	0	2	0	1	0	2	0
July.....	1	0	0	0	0	0	0	0
August.....	4	0	0	0	1	0	0	0
September.....	0	0	0	0	1	0	0	0
October.....	4	0	0	0	1	0	3	0
November.....	2	0	2	0	5	0	1	0
December.....	5	0	4	0	13	1	4	0
January.....	4	0	0	0	3	0	1	0
February.....	6	0	2	0	10	1	3	0
March.....	10	0	4	0	3	0	1	0
April.....	7	0	2	0	5	0	0	0
May.....	3	0	3	0	27	1	1	0
Totals.....	52	0	19	0	70	3	16	0

Beginning about the middle of June, 1897, disinfection was performed by means of formaldehyde, generated with one of the proprietary lamps. It being impossible at the time to make a test of the efficiency of the apparatus before using it in the work, the recommendation of the company and of its experts was accepted as sufficient. Shortly after its adoption into general use, return cases were now and then reported in houses in which the apparatus had been employed. As this had not happened previously, when sulphurous acid was used, it led to some misgivings.

It may be well at this point to describe the method of procedure in making these fumigations. The infected room was first sealed as tightly as possible, by packing cotton in the open joints and cracks or pasting strips of paper over them, and closing all other apertures. Closets and cases were then opened and fabrics spread out so as to expose all surfaces. The lamp was then started, and the room kept closed from twelve to twenty-four hours. On re-entering the room, the lamp was examined to ascertain if all the alcohol in the fount had been consumed, thereby making sure that the maximum amount of gas had been generated, and if it was found that the flame had been extinguished before the alcohol had been exhausted, the work was repeated.

After several return cases had been reported, it was decided to make a practical test of the lamp. Two rooms were selected, of the same size and similar exposure, and carefully closed in the manner above described. Plate cultures of *b. typhi abdominalis* and *b. diphtheriae* were first exposed, and,

## ESSEX COUNTY—Continued.

following this series, thread soaked in bouillon cultures of the bacilli. The latter were first exposed in chambers of very thin absorbent cotton gauze, but afterwards these chambers were opened on one or more sides, and finally the threads were allowed to hang free in the air.

Throughout the work three cultures were exposed at a time, one being placed near the floor level, one at a height of four feet, and the third at the ceiling, or about eight feet. In order to determine if any prevailing currents of air had a perceptible influence, the cultures and threads were placed at different sides of the lamp.

The results of these experiments were uniform; in every case a vigorous growth of both the Eberth and Klebs-Loeffler bacilli were obtained. I will present no detailed report of these experiments, as the results can hardly admit of discussion. For practical disinfection the gas produced by the lamp in question is shown to be absolutely worthless. The fumigation with sulphur and steam has been resumed, and it seems wise to continue with that method until the value of some device has been more scientifically demonstrated.

The usual attention has been given to the ice-supply for the coming year. Samples from each source have been taken from the delivery wagons and examined chemically.

Pocono mountain ice.—This is an exceptionally clear, transparent natural ice, taken from lakes in Pocono mountain, Pennsylvania. Coming, as it does, from a sparsely-settled region, the dangers of pollution are at a minimum, and therefore the present crop commends itself as an excellent product for domestic use. The analysis of this and other ice, made by the chemist of the board, is given in Table V.

Greenwood lake ice.—This product, while not as clear nor as pure as that first mentioned, is, nevertheless, an extremely high grade of natural ice. Certain shipments are occasionally filled with black specks, which is said to be due to cinders from the locomotives which run upon the edge of the lake.

The artificial ice supplied to Montclair is manufactured at Orange and Bloomfield. Samples taken from the Orange plant indicate that the water from which the ice is made is of excellent quality. In addition to this, the water is double distilled before being drawn into the freezing cans. As will be seen by the report of analysis below, the melted ice does not return a perfectly distilled water, but the ingredients contained are in so small a proportion that they can be disregarded from the standpoint of general healthfulness.

The ice from the Bloomfield machine, judging from the samples so far analyzed, indicates carelessness in handling. Here, as in Orange, approved condensing apparatus is provided, but the high amount of albuminoid ammonia indicates that some uncleanly conditions prevail in the process after the water distilling point is passed. The high chlorine indicates that there is at times considerable leakage from the brine vat into the cans. This is a common complaint among ice manufacturers. Unless extraordinary care is used, slight leaks in the freezing-cans will obviate all precautions taken to secure a pure water, and an impure ice will result.

## ESSEX COUNTY—Continued.

TABLE SHOWING ANALYSES OF ICE.

	Pocono Mountain.	Greenwood Lake.	Orange Machine.	Bloomfield Machine.
Total residue on evaporation .....	1.1000	0.4000	0.8000	1.3000
Loss on ignition.....	0.8000	0.4000	0.3000	0.6000
Fixed.....	0.3000	0.0000	0.5000*	0.7000
Chlorine.....	0.3000	0.0000	0.2500	0.7000
Nitrites.....	0.0000	0.0000	0.0000	0.0000
Nitrogen in Nitrites and Nitrates.....	0.0000	0.0000	0.0000	0.0000
Free Ammonia.....	0.0015	0.0017	0.0035	0.0200
Albuminoid Ammonia.....	0.0068	0.0139	0.0085	0.0186
Bacteria per c. c. ....	.....	.....	.....	1.6540

\*Zinc and oxide of iron.

The inspection of dairies and the examination of milk, has, as in previous years, formed an important branch of the work. In many places the various devices for the production of a pure supply which have long been urged by the board, have been added, and numerous undesirable features have been abolished.

A rapid glance over the different dairies supplying Montclair, together with a report of the results of this year's analysis, may not be out of place here:

J. H. Cadmus, Caldwell.—Stables old; light poor; ventilation not sufficient. Floors and drops of wood; water-tight. Twenty cattle; regularly examined by veterinarian. Food: meal and bran. Water from running brook; purity doubtful. Milk cooled by submerging cans in ice-water. Utensils sterilized by boiling in large cauldron. Dairy carefully handled, but stables are poor.

Geo. M. Canfield, Caldwell.—Large, airy stable, with abundance of light; chert floors and drops; open feed-cribs; water constantly supplied at each stanchion. About sixty cattle; regularly attended by veterinarian. Food: oats, cornmeal, middlings, gluten feed and bran. Water from artesian well. Milk cooled over "Star Cooler" and bottled immediately. Utensils sterilized in steam chest.

M. H. Canfield, Caldwell.—Old stable; light poor; no floor; drops not tight; closed feed-crib. Twenty cattle; examined about once per year by veterinarian. Food: meal and middlings. Water from pond; no apparent pollution. No adequate means of sterilizing apparatus or cooler; equipment defective.

A. Chamberlain, Montclair.—Buys most of his supply from E. N. Harrison, Montclair, but keeps two cows in small stable on Charles street. Chert floor and drop; very clean. No equipment for cooling milk. No analyses have been made of this product.

Fairfield Dairy Co., Fairfield.—Light, airy stables, with open cribs, chert drops and improved stanchions. High basement beneath stable floor, giving good drainage and no dampness. Manure removed twice daily. Food: corn meal, sprouts, oil meal and ensilage, according to season. Water from spring;

## ESSEX COUNTY—Continued.

purity unquestionable. About 400 cattle; tested with tuberculin before being introduced into the herd; regularly attended by veterinarian. Milk cooled over "Star Cooler" ten to fifteen minutes after being drawn from the cows. Stored in cold storage at temperature of about 35 degrees Fahrenheit. Equipment for sterilizing complete.

Frederick Feerst, West Orange.—Basement stables; poor light, ventilation and drainage, but kept clean. Twenty-three cattle, attended once per year by veterinarian. Food: Screenings, Indian meal and bran. Water from artesian well. No adequate means of sterilizing utensils. Dairy much benefited by recent improvements.

W. H. & R. S. Francisco, Caldwell.—Two stables; good ventilation, light and drainage. Chert floors and drops; open cribs. Food: corn meal, wheat middlings and oil meal. Water from dug wells. About 115 cattle, recently attended by veterinarian. Milk cooled by submerging in ice-water and then bottled immediately. Utensils sterilized in steam-chests.

C. W. Haight, Verona.—Milk purchased from Jacob Rausch, near Roseland; transferred to Verona and there bottled. Very poor stables, poorly drained and lighted, but well ventilated and kept as clean as possible. Twenty cattle, which have no regular veterinary attendance. Food: meal and bran. Water from spring. Utensils sterilized in Verona plant by boiling.

W. Hamilton, Richfield.—Large, light stable; good drainage, and kept in excellent condition. Cement floors and drops. About 20 cattle, regularly attended by veterinarian. Milk cooled over patent cooler and bottled immediately. Utensils sterilized with steam.

J. H. Harkey, Verona.—Buys supply of H. F. Backus & Co., Caldwell. Milk from dairies in Troy Hills and Parsippany.

A. Harris, Montclair.—A small dairy; average number of cows, 6. Stable new, light and well drained. Food: corn meal and bran. Water from brook; purity questionable. Milk cooled as soon as drawn by submerging can in well-water. No adequate means of sterilizing utensils.

E. N. Harrison, Montclair.—Montclair supply from dairy of Z. C. Harrison, Caldwell. Stable in basement; not well lighted nor ventilated, but clean; drainage good. Twenty cattle; no veterinarian in attendance. Water from well and pond. Milk bottled in Montclair at local station.

R. I. Jacobus, Little Falls.—Stables old, but well lighted and ventilated; drainage good. Ten cows; regularly examined by veterinarian. Food: screenings, buckwheat bran, wheat bran and meal. Water from spring and well. Rather poor equipment for sterilizing utensils.

W. H. Jacobus, Caldwell.—Buys supply from Louis Fisher farm in North Caldwell. Stables in good condition, with abundance of air and light; good drainage. Seventeen cattle; no veterinarian. Milk cooled by submerging cans in spring-water. Generally healthful surroundings about dairy.

T. F. Jacobus—A. R. Force.—Milk purchased in beginning from Fisher, above mentioned; subsequently raised by Force. Stable poor, with little light and poor drainage; ventilation good. Eight cattle, in good condition. Milk

## ESSEX COUNTY—Continued.

cooled over patent cooler and bottled immediately. Utensils sterilized by boiling in cauldron. Dairy being rapidly improved.

McLellan Bros., Roseland.—Buys supply of H. Alvord, Roseland. Stable large and well ventilated; light poor. Cattle apparently in good condition; no veterinarian. Food: corn meal, bran and brewer's grains. Water from pond and springs. Delivery made largely in cans. Poor equipment for sterilizing utensils.

New York Condensed Milk Co.—Montclair supply from five dairies in Oxford, N. Y. Stables excellently drained, ventilated and lighted. Milk cooled by submerging cans in spring-water. Utensils sterilized with steam—An excellent product.

A. M. Speer, Caldwell.—Buys a part of supply from H. F. Backus, Caldwell. Own stable badly drained, dark and generally filthy. Seven cows, recently examined by veterinarian. Dairy characterized by bad management; uncleanly surroundings.

Geo. Taylor, Cedar Grove.—Stable light and well ventilated, but has poor drainage. Seventeen to eighteen cattle; recently examined by veterinarian. Milk cooled in ice-tank and bottled as soon as cold. Utensils sterilized by boiling.

E. O. Wettewen.—Buys most of supply from Wm. Small, Cedar Grove. Stable poor and old, but light, well drained and clean. Cattle attended regularly by veterinarian. Food: meal, malt sprouts and corn. Milk cooled in ice-tank, and bottled as soon as cold.

C. D. Vanidestine.—Buys supply from C. H. Hoffman and F. N. Vanidestine, of West Livingston. Hoffman's stable first-class in all respects. Vanidestine's, old, but clean, well ventilated and drained. Milk cooled in ice or spring-water, greater part of delivery in cans.

P. S. Van Reyper.—Stables large, well ventilated and drained. Earth floors and closed cribs. Ten cattle, regularly examined by veterinarian. Food: meal, middlings, fodder corn and brewer's grains. Milk cooled and bottled in dark room adjoining stable. No adequate means of sterilizing utensils.

The milk ordinance, adopted March 24th, 1898, has not been in operation sufficiently long to make trustworthy deductions as to its practical working. It is encouraging to note, however, that the large majority of dairymen involved, heartily approve of the requirements contained in it. Many of the dairies supplying Montclair are in such good condition that little or nothing will have to be done in order to bring them up to the specifications of the ordinance. Others, in which extensive changes were necessary, are at present being improved as rapidly as the means of the owners will permit.

For purposes of illustration we may divide the dairies into three classes, as follows: First, those having modern stables, and the most approved equipment, run upon principles conducive to cleanliness, health of cattle, and general excellence of product. The experience of the past two years shows that the milk of this class varies little in fats and total solids from day to day, and that such variations as arise are gradual. Such milk contains comparatively few bacteria per cubic centimeter, and therefore a longer life is given to the

## ESSEX COUNTY—Continued.

product. In such a dairy the milk is cooled and aerated immediately after being drawn from the cattle, and carefully stored and protected from exposure to contamination. The flanks and udders of the cattle are kept free from manure, and the stables maintained in a sweet, clean condition.

The second class comprises those dairies in which the handling and care of all things concerned is equal to the first class, but where poor stables and lack of mechanical facilities make it impossible to produce as fine and clean a product as that of the latter. The obstruction here is, primarily, lack of means with which to provide the improvements desired, and, as might be expected, this forms the largest class. Old, dusty and leaky stables, bad drainage, awkward methods of handling manure, and want of sterilizing apparatus are responsible for the inferior product which often comes from these dairies.

The third class, which, happily, is now very small, embraces those in which few if any precautions are taken to produce clean and pure milk. Stables are wet and sloppy with liquid manure, and that which is thrown against the walls is allowed to remain until it forms a thick coating. Manure is always found upon the udders and flanks of the cattle and frequently they are infested with vermin. Frequent inspection is necessary in such cases, and even that is often useless. Such conditions may arise from carelessness or intention, but more often it is the result of mismanagement on the part of ignorant proprietors, who are not at all fitted for the work, who cannot appreciate the consummate virtues of cleanliness, and with whom "milk is milk." Observe the cobwebs and dusty hay hanging from the rail ceilings, and the general unkempt appearance of the stable.

The inspection of plumbing has been continued during the past year, under the ordinance adopted one year ago. The work done under its provisions has, on the whole, been extremely satisfactory. One hundred and ninety-two licenses have been granted to perform plumbing work, the completion of which has involved three hundred and ninety-seven tests and inspections.

The number of deaths in the town of Montclair during the past year is one hundred and fifty-seven, an increase of nine over the total of 1896-1897. The population, estimated as closely as possible from the average increase during the past eighteen years, and from a fairly complete census taken at the last annual house-to-house inspection, is not far from 13,000. According to this estimate, the death-rate per thousand is therefore 12.08.

The following table gives the number of deaths from the thirteen most fatal diseases during the past fiscal year, with percentage rate of each, to which is appended the death-rate from the same diseases during the year previous:

## ESSEX COUNTY—Continued.

Disease.	1897-8.		1896-7.	
	Deaths.	Rate Per Cent.	Deaths.	Rate Per Cent.
Diarrhoeal dis.....	16	10 06	17	11.49
Consumption.....	18	10 06	11	7.43
Pneumonia.....	15	9 43	14	9.46
Heart disease.....	14	8 80	12	8.11
Asthenia.....	9	5 96	5	3.38
Eclampsia.....	8	5 35	2	1.44
Violent.....	6	3 77	4	2.70
Cerebral hemorrhage.....	5	3 15	3	2.03
Apoplexy.....	5	3 15	5	3 38
Bronchitis.....	5	3 15	7	4.73
Nephritis.....	5	3 15	5	3 38
Diphtheria.....	5	3 15	3	2.03
Tubercular Menin.....	5	3 15	1	0 67

## CITY OF NEWARK.

MEMBERS AND OFFICERS—Dr. H. C. H. Herold, President; M. Straus, A. H. Johnson, J. A. Farman, W. B. Guild, M. T. Gay, Dr. C. M. Zeh, Dr. D. L. Wallace, Dr. F. W. Becker, Dr. W. S. Diabrow; David D. Chandler, Health Officer.

EMPLOYEES OF THE BOARD OF HEALTH--Inspectors, Sanitary Division: Thomas E. Freeman, Louis H. Bridgem; William H. Young, Andrew J. Brady, John Wright, Thomas F. Newton, Morris Seidl, Forman J. Reynolds, Otto B. Schalk, Charles E. Burke, Antonio Panzera, Austin Moran. Disinfecting Corps: Samuel Knott, Chief; Inspectors: John L. Ball, William Parker, Hiram R. Stewart. Bacteriological Division: Richard N. Connolly, M.D., Bacteriologist, Laboratory, City Hospital; John C. Houston, M.D., Assistant Bacteriologist; Herman Volk, Culture Collector. Dispensary Division: Attorney, Herbert B. Boggs; District Physicians: William Gauch, Herbert W. Long, William M. Goodwin, Oswald H. Roth, James A. Hoffman, Fred Webner, Vincent Nager, Edward Staehlin, Thomas P. Edwards, Hugh M. Hart, Fred C. Hagney.

The number of dwellings in the city is 30,036. Number of births reported during year ending June 30th, 1898, 5,661. Deaths during same period, 3,882; deaths under one year, 880. Communicable diseases were reported, as follows: Diphtheria 875, with 113 deaths; scarlet fever 655, with 24 deaths; typhoid fever 91, with 27 deaths. Daily average quantity of water used during the year 1897, 25 millions. During the year 1898, 27 millions. About 30,000 dwellings are connected with the water-mains. Extensive additions

ESSEX COUNTY—Continued.

have been made to the water-works. About 144 miles of sewers are now in use in the city. Nine hundred and ninety-nine premises were connected with the sewers during the past year.

Garbage is collected under contract by the city, the collection varying in different sections of the city, from daily to tri-weekly removals. Sixty vehicles, 125 horses and 100 men are employed in this work, at an annual cost of \$58,000. This service is not performed under the supervision of the board of health. Refuse materials, including garbage, rubbish and ashes, are used to fill low-lying meadow lands. Total amount of garbage removed during the year, 325,000 cubic yards. Night-soil is disposed of by delivering to the fertilizer establishments. Nuisances abated, 5,543. Prosecutions for failure to abate nuisances, 200. House-to-house inspections are made at stated intervals and a record is kept by the card index system. Regular monthly meetings are held by the board, and special meetings from time to time.

BOROUGH NORTH CALDWELL.

This borough was incorporated April 1st, 1898, and no board of health has yet been appointed. The number of dwellings in the borough is about 70. F. L. Baldwin is the borough clerk.

CITY OF ORANGE.

MEMBERS AND OFFICERS—John T. Platt, G. H. Richards, M. D., A. Eichhorn, John Burke, P. J. Harrigan, James H. Brown, Stephen Collins; Wm. Schluer, Secretary; T. F. Phelan, M. D., Chief Inspector; Wm. Schluer, Assistant Inspector; S. D. Philpot, Plumbing Inspector; T. S. Davis, Attorney.

Number of dwellings, about 3,500. Communicable diseases were reported, as follows: Diphtheria, 127 cases, 16 of which were fatal; membranous croup, 3 cases and 3 deaths; scarlet fever, 136 cases and 6 deaths; typhoid fever, 12 cases and no deaths. Thirty-five miles of sewers are in use in the city; 2,217 premises are connected with the same, 270 of which were connected during the past year. Garbage is collected by employees of the city, the service being per-

ESSEX COUNTY—Continued.

formed by eight men three times a week at an annual cost of \$3,500. Ashes are moved with the garbage, but rubbish is collected separately, and is used for filling low-lying lands. Two hundred and forty-seven complaints were investigated, and 185 nuisances were abated; prosecutions being brought in three cases. One complaint was brought in reference to an offensive trade, and the conditions complained of were removed. Fifteen meetings were held. An active movement for the establishment of an isolation hospital for the city of Orange and the adjoining sanitary districts has been made during the past year.

The following circular was issued February 18th, 1898:

DEAR SIR—A joint meeting of the several committees interested in the matter of securing an Isolation Hospital for the Oranges was held at the rooms of the New England Society Thursday evening, February 10th, and a permanent organization effected. After hearing and thoroughly discussing information from various sources it was unanimously declared the sense of the meeting that an Isolation Hospital for contagious diseases is urgently needed in this community.

	Copies Sent.	Answers Returned. <i>All Favorable.</i>
The word Physician was inserted in.....	65	31
“ Ministers “ .....	45	20
“ Nurses “ .....	4	2
	114	53

In order to ascertain the sentiment of the ministers of the Oranges and to secure their co-operation, a sub-committee was appointed and ordered to report at the next meeting of the general committee.

May we ask your co-operation to the extent of answering the inclosed questions and returning them to

BRYANT VENABLE, *Secretary,*  
Orange Valley P. O., New Jersey.

A. D. CHANDLER,  
W. J. BIRDSALL,  
BRYANT VENABLE,  
*Sub-Committee.*

The following circular was signed by over 800 parents and forwarded to the committee:

## ESSEX COUNTY—Continued.

## AN EXPRESSION OF OPINION REGARDING THE ISOLATION OF DIPHTHERIA AND SCARLET FEVER.

To the Combined Committee of the New England Society, Bureau of Associated Charities and Orange Valley Civic League:

GENTLEMEN—We citizens, fathers and mothers, living in the Oranges, knowing the great need of some place where those stricken with scarlet fever or diphtheria might be properly attended, regret the fact that at present in the Oranges there is no place where a stranger, boarder, visitor, servant or a child so afflicted can be sent.

We recognize the fact that the placarding by the health officer of stores results in great loss of trade and that in many cases the quarantining of families has resulted in the loss of employment to the heads of said families, in consequence of which they have had to resort to the Bureau of Associated Charities and to the Overseer of the Poor for relief.

Many of these cases have occurred in houses where there were other inhabitants and children, and where, if the first case could have been properly isolated, other cases would not have occurred and thus much suffering and many lives would have been saved.

We also recognize the difficulties involved in starting any new institution, but believe that if conducted on the plan presented it will be a success.

Therefore we would suggest the following:

First. There shall be a governing board of such persons as support the above institution.

Second. There shall be no medical staff or house physician, but each patient shall be attended by his or her own physician, who shall be any person recognized by the State of New Jersey as a physician, without regard to the particular school from which he graduated. The above place being a place of isolation and not of treatment, patients shall be treated the same as if at their own home. It shall be open to all persons at any hour, who are suffering from diphtheria or scarlet fever, a certificate from any physician being sufficient for admittance.

Third. The house shall be under the direct management of a head nurse, with as many assistants as necessary, but any patient may have a private nurse if willing to pay the expense.

Fourth. The greatest amount of freedom should be allowed, consistent with proper isolation, the great object being to prevent spread of contagion, therefore no one except the physician, nurse, or clergy should be allowed to mingle with the sick.

Fifth. A telephone and waiting-room should be connected with the house, where truthful answers should be cheerfully given to all inquiring friends.

Sixth. Each person admitted, if possible, must pay for board and nursing, the amount to be decided by the governing board according to the circumstances of each case.

We believe that the expense of conducting the above on the plan suggested would not be very great. There would be no taxes or water rent, and the

## ESSEX COUNTY—Continued.

telephone would be rented at half rate. Food could be brought from outside, therefore the main expense would be for heat, light and nursing. It is not at all likely that the amount received from patients would equal the expense, but the difference could easily be made up in various ways. Therefore, we, the undersigned, heartily approve of the above plan.

Following is an extract from the *Orange Journal*, January 15th, 1898:

The Bureau of Associated Charities has just placed a new formaline disinfecting closet on the first floor of its building, No. 28 Essex avenue, where clothing, etc., will be disinfected, and scarlet fever and diphtheria germs killed, before it is sent out. This plan was advised by the Board of Health, as it is claimed that several cases of scarlet fever in Orange were caused by sending out clothing that had been donated to the bureau, and which contained scarlet fever germs.

One of these unfortunate cases which it is claimed was caused by the presence of germs at the bureau is at No. 219 Essex avenue, directly opposite Memorial Hospital. On last Thanksgiving Day it consisted of a father, a mother, and three bright little girls, one seven years, one five years, and a baby of two years. The father was a steady-working hatter, earning fair wages. The older girl went to the kindergarten connected with the Bureau of Associated Charities, and in some way, it is supposed, her clothes became infected with the germs of diphtheria from clothing which had been sent to be given to the poor, from a case that had died of the disease, and which had not been fumigated. The father was prevented from working by the Board of Health. After a few days the child died, and the overseer of the poor sent a black painted pine box, and she was buried. While this child was being buried, the second child was taken sick with the same disease, and in a week's time the overseer of the poor furnished the second black pine box. A few days later the only child left was stricken, and a few days later the third box was sent to the weeping father and mother. When the father again applied for work he found that his place had been filled, and he has not yet secured employment. If there had been any place where the first child could have been taken, the other two would have been saved from the disease, and in this case two lives would have been saved, and perhaps three. But unfortunately this occurred in Orange. Had it been in Newark, the Newark City Hospital would have taken the sick child at a moment's notice. In New York the Willard Parker Hospital would have taken such a case. But until Orange gets a hospital for contagious diseases such cases as this are bound to recur.

The Orange Valley Civic League held its first meeting of the new year on Sunday afternoon. It was very poorly attended, but as it was generally known that the New England Society had not appointed its committee on contagious disease hospital, many of the members stayed away, as no active work could be done until this committee was appointed. A resolution was passed that the Civic League communicate with the East Orange Town Improvement Society, asking that body to co-operate with the Civic League

## ESSEX COUNTY—Continued.

regarding the hospital. Several of those present spoke in favor of the plan for the hospital presented by *The Journal*. It was stated by one of the members present that 800 persons had so far signed the petition recently published in *The Journal*, including many physicians of all schools, also ministers, priests, professors in colleges, boss hatters, foremen in hat-shops, and many business men, and only three persons so far had refused to sign it. They did not disapprove of the plan, but thought the proposed hospital might conflict with Memorial Hospital. One speaker declared that Memorial Hospital would not stand in the way of this great necessity. Memorial Hospital is a private hospital, and is doing a good work. The bicycle scorchers tear along the public roads with his head over the handle-bar, he strikes some obstacle, and he lies unconscious in the road. The ambulance is called, and he is taken to the hospital, where the cuts are sewed up, and he is given the best of care. The drunken man falls on the sidewalk; he is also taken to the hospital and receives good treatment. Another man takes poison, is hustled off in the ambulance to the hospital, and he is quickly pumped out with the stomach-pump, and not allowed to die even though he wishes to. Memorial Hospital was organized to "give temporary succor to those who meet with sudden accidents," and they get it, and the public willingly contributes to its support. Each case treated is only one case relieved; there is no benefit to any one except the person who met with the accident. "But," continued the speaker, "look down yonder street. There is a red sign on the door. In the three rooms are a father, mother, and five little children. The doctor has stated that one of the children has scarlet fever. It is placed in one of the rooms, the four other children are in the next room, and the mother cooks the meals for all. The husband is told by the board of health that he must either board elsewhere or give up his work and stay home with his wife and children; it is needless to picture the rest. You all know that isolation under these conditions is a farce. The others get the disease, and it is spread to the neighborhood. I dare say that if an isolation home such as has been planned in *The Orange Journal* was in actual existence, we would not have one-tenth of the number of cases we now have. Each case treated would not mean one person only benefited, but from six to ten homes saved the anxiety, expense, danger, suffering and sorrow which follows, not from avoidable accidents, but because we are behind the age and blind to our duty as Christians and as citizens."

When asked if he thought that parents would object to having their children taken care of at the Isolation Home, the speaker said there would be some objection with some people at first, but when it was known that their own physician could treat them there the same as at their home, and that they could see and hear from them when they wished, upon the plan presented in *The Journal* two weeks ago, and which is now in successful operation elsewhere, the masses would be only too happy that there was a place to go.

## ESSEX COUNTY—Continued.

## SOUTH ORANGE TOWNSHIP.

MEMBERS AND OFFICERS—W. W. Menzel, Maplewood; W. J. N. Carter, S. Orange; Matthew W. Hogan, S. Orange; Samuel Tilton, S. Orange; Amos Brown; Thos. C. Baker, Assessor, Maplewood; J. A. Osborn, Secretary, Hilton; W. W. Hebertin, M. D., Inspector, S. Orange.

Maplewood has about 800 population, and Hilton 700. Total number of dwellings, about 1,000. Births reported, 28; deaths, 24; deaths under one year, 6. Two cases of scarlet fever and 3 of typhoid fever occurred. Eight nuisances were abated. Five meetings were held.

## BOROUGH OF VAILSBURG.

MEMBERS AND OFFICERS—A. Maybaum, Henry Aschenbach, James Hampton, John V. Diefenthaler; C. H. Rakestraw, Secretary; Herman Rodamacher, Inspector; Riker & Riker, Attorneys, Newark.

Births reported, 26; deaths, 9; deaths under one year, 5. Four cases of diphtheria and 9 of scarlet fever were reported. Water-supply of borough is obtained from Newark and Summit. Complaints received, 35, and 33 nuisances were abated. One suit for recovery of penalty for violation of an ordinance is pending. Seventeen meetings were held.

The following report is on file in the office of the State board of health:

A complaint was received from the East Orange health authorities that certain residents of their township were affected by the foul odors from the slaughter-house owned by Alexander Maybaum, located in Vailsburg, just over the line from East Orange township. An inspection was made of the premises June 9th, 1898, and I was made report as follows: Mr. Maybaum owns the property in Vailsburg, opposite the shooting-park, and a lane which starts from South Orange avenue leads to his establishment.

The slaughter-house is between an eighth and a quarter of a mile from the avenue. It consists of the slaughter-house proper, a cold-storage apartment, a wool-pulling house and the usual pens for animals and hog-pens. The place where the slaughtering is done was in a cleanly condition and the cold-storage room was also in a satisfactory condition. The building in which the wool is pulled from the hides of sheep and lambs was examined and no foul odors were noticed. In the rear of the slaughter-house two pits are constructed which receive the blood and parts of offal. From these pits this material is carted to a point about seventy-five yards away and deposited on the ground

ESSEX COUNTY—*Continued.*

and there covered with horse-manure. From these pits to the point of deposit, portions of decaying flesh and blood had dropped from the cart and were exposed to the sun and gave off some foul odors. Foul odors were also noticed where the heaps of decomposing material had been placed. From the pits a pipe leads to a small brook, and blood was noticed at the end of this pipe flowing into this brook. The brook has a westerly course and at the end of Mr. Maybaum's property line changes to an easterly course and flows under South Orange avenue, and it is one of the tributaries of the Elizabeth river, from which the city of Elizabeth obtains the greater portion of its public water-supply.

The closet used by the men working on the premises is within fifty feet of the brook, near the point where the pipe from the blood vats empties into it. There is an ample supply of water on the premises. The owner should make some other arrangement by which the nuisance at present existing on his premises can be abated. The establishment is a large one, and many animals are slaughtered, most of them being small stock, such as sheep, lambs and calves. There are no houses located within less than a quarter of a mile of the slaughter-house, but the complainants, who for the most part reside on Munn avenue, are so situated on an elevation that when the wind blows from an easterly direction they notice the foul odors arising from the nuisance existing at the slaughter-house.

## VERONA TOWNSHIP.

MEMBERS AND OFFICERS—Chas. A. William, Verona; J. E. De Camp, Verona; Chas. H. Jacobus, Cedar Grove; W. J. Jacobus, Cedar Grove; E. C. Schmid, Verona; W. L. Scott, Verona; H. B. Whitehouse, M. D., Secretary, Verona.

Number of dwellings in township, 375; births reported, 15; deaths, 20; deaths under one year, 1. Communicable diseases were reported, as follows: Diphtheria, 2; scarlet fever, 1; typhoid fever, 1; complaints investigated, 3. Four meetings were held by the board.

## WEST ORANGE TOWNSHIP.

MEMBERS AND OFFICERS—John Otterlein, West Orange; Frederick Cummings, Orange Valley; Thomas Cunningham, West Orange; John Rue, West Orange; Carl Fentzloff, West Orange; James M. Maghee, M. D., West Orange; Frank A. O'Connor, Secretary.

Total number of dwellings in township, 950. Births reported, 90; deaths, 80. Nine cases of diphtheria; 1 of membranous croup, and

ESSEX COUNTY—*Continued.*

34 of scarlet fever were reported. About 400 dwellings are connected with the public water-supply. About 15,000 cubic feet being the average daily quantity of water used. Twenty-nine complaints were investigated and all of the nuisances discovered were abated. Twelve meetings were held.

## GLOUCESTER COUNTY.

## BOROUGH OF CLAYTON.

No organization.

C. L. Duffield, M. D., reports that a board has been appointed, but no meeting has been held.

## DEPTFORD TOWNSHIP.

MEMBERS AND OFFICERS—Adam W. Muller, Almonesson; Benj. F. Haines, Westville; Joseph Noblit, Wenonah; Harry A. Stout, M. D., Wenonah; Wm. C. Cattell, M. D., Assessor and Secretary, Wenonah; David O. Watkins, Attorney, Woodbury.

Hamlets are located in the township as follows: Westville, estimated population, 750; Woodbury Park, estimated population, 200; Woodbury Heights, estimated population, 75; Almonesson, estimated population, 150. Seven cases of diphtheria were reported, attended by three deaths. One case of scarlet fever and 4 of typhoid fever also occurred. One slaughter-house is located in Westville and is managed by Jerre Blake. Eleven complaints were investigated and ten nuisances abated. A system of water-works has recently been constructed in Westville. Five meetings were held by the board.

## EAST GREENWICH TOWNSHIP.

MEMBERS AND OFFICERS—Chas. Dorrman, Mickleton; Edward K. Howey, Cookstown; Seth H. Warrington, Mickleton; Walter Heritage, Assessor and Secretary, Mickleton.



## GLOUCESTER COUNTY—Continued.

Clarksboro contains about 100 inhabitants; Mt. Royal about 200 and Mickleton about 100. Total number of dwellings, about 400. Three cases of typhoid fever were reported. One nuisance was investigated and abated. Three meetings were held during the year.

## FRANKLIN TOWNSHIP.

MEMBERS AND OFFICERS—A. B. Richman, Malaga; Chas. Trimnell, Malaga; Samuel Lowder, Newfield; A. A. Smith, M.D., Malaga; W. S. Richman, Assessor and Secretary, Malaga.

The following hamlets are located in the township: Franklinville, population about 300; Iona, population about 300; Newfield, population about 200; Malaga, population about 200; Forest Grove, population about 200; Plainville, population about 500. There are about 1000 dwellings in the township. Births reported, 32; deaths reported, 35.

## GLASSBORO TOWNSHIP.

MEMBERS AND OFFICERS—Thos. C. Allen, Ira Iszard, Henry Rowan, Sr.; David Paulen, Assessor; Chas. S. Heritage, M.D., Secretary; Edward Munday, Inspector.

There are about 500 dwellings in the township. Births reported, 43, deaths, 23. Two meetings were held.

## GREENWICH TOWNSHIP.

MEMBERS AND OFFICERS—D. R. Ackley, Paulsboro; J. J. Cowgill, Paulsboro; Asa Harker, Gibbstown; G. C. Laus, M.D., Paulsboro; Jacob Ballinger, Secretary and Assessor, Paulsboro.

There are about 500 dwellings in the township. One case of typhoid fever was reported. Nineteen nuisances were abated. Six meetings were held.

## HARRISON TOWNSHIP.

MEMBERS AND OFFICERS—W. N. Justice, Richwood; Samuel Stratten, Ewan; N. S. Lloyd, Mullica Hill; S. F. Ashcraft, M.D., Mullica Hill; Eli Heritage, Assessor and Secretary, Richwood.

## GLOUCESTER COUNTY—Continued.

There are two slaughter-houses in the township, both being located at Mullica Hill. Three meetings were held by the board.

## LOGAN TOWNSHIP.

MEMBERS AND OFFICERS—Isaac Derrickson, Smith Shoemaker, Hugh McGlinsey, E. T. Oliphant, M.D.; Samuel E. Platt, Assessor and Secretary; S. H. Richards, Attorney. All of Bridgeport.

Bridgeport has about 500 population; Ramapo, 200; Center Square, 100. Dwellings in township, 230. Births reported, 23; deaths, 18; deaths under one year, 5. Chas. C. Davis conducts a slaughter-house, which is located on the banks of the creek, about 200 feet from the nearest dwelling. Three meetings were held.

## MANTUA TOWNSHIP.

MEMBERS AND OFFICERS—E. Lincoln Sharp, Barnsboro; B. A. Carson, Mantua; Robert Kincaid, Barnsboro; E. Z. Hillegar, M.D., Mantua; George B. Huff, Assessor and Secretary, Sewell.

One slaughter house, managed by Theodore Dilks, was located in Mantua. One meeting was held.

## MONROE TOWNSHIP.

MEMBERS AND OFFICERS—James M. Tweed, J. J. Elridge, Wm. F. Tweed, L. M. Halsey, M.D.; Clayton B. Tice, Assessor and Secretary; David O. Watkins, Attorney, Woodbury. All others of Williamstown.

The following hamlets are located in the township: Williamstown, population 1,800; Cross Keys, population 150; Downer, population 100; Cecil, population 300, and Brooklyn, population 150.

There are 541 dwellings in the township. Births reported, 31; deaths, 31; deaths under 1 year, 11; six cases of diphtheria, one of membranous croup and four of typhoid fever were reported. Ten complaints were investigated, and all nuisances found were abated.

Three meetings have been held by the board.

GLOUCESTER COUNTY—*Continued.*

## SOUTH HARRISON TOWNSHIP.

MEMBERS AND OFFICERS—Chas. K. Horner, Alfred Lippincott, George Conover, David Lippincott; Samuel F. Stanger, Secretary, all of Harrisonville.

Harrisonville has a population of 250, and Lincoln 50. Total number of dwellings in township, 150. One slaughter-house, located at Harrisonville, is conducted by John Riley. Two meetings were held.

## WASHINGTON TOWNSHIP.

MEMBERS AND OFFICERS—Geo. Rowan, Cross Keys; Frank Garrison, Hurfville; John Wilkins, Turnerville; C. B. Phillips, M. D., Hurfville; C. D. Nicholson, Secretary and Assessor, Turnerville.

Three slaughter-houses located in the township, two at Hurfville and one at Turnerville. Two meetings were held.

## BOROUGH OF WENONAH.

MEMBERS AND OFFICERS—A. W. Carey, Thos. W. Synnott, Wm. J. Dawson, Edgar A. Smith, Wm. Oat, E. Hurff, H. A. Stout, M.D.; J. W. English, Secretary; J. L. Drummer, Inspector.

There are 121 dwellings in the borough. Two cases of typhoid fever were reported. 110 premises are connected with the public water-works. One mile of sewer pipe has been laid and 12 premises have sewer connections. Four meetings were held.

## WEST DEPTFORD TOWNSHIP.

MEMBERS AND OFFICERS—Joseph Low, Thoroughfare; Joseph A. Moore, Woodbury; R. M. Plum, Westville; James Hunter, Westville; Mark Clement, Secretary and Assessor, Woodbury.

One case of diphtheria and 1 of typhoid fever were reported. One nuisance was abated. Three meetings were held.

GLOUCESTER COUNTY—*Continued.*

## CITY OF WOODBURY.

MEMBERS AND OFFICERS—Warner Underwood, W. T. Williams, M.D., T. E. Parker, M.D., Chas. Walton, William M. Carter, Arthur S. Terry; Arthur Starr, Secretary; Joshua Dawson, Inspector.

Number of dwellings, 900. Births reported, 77; deaths, 58; deaths under one year, 15. Three cases of diphtheria, 1 of scarlet fever and 2 of typhoid fever occurred. Eight hundred and eighteen dwellings are connected with the public water-supply, 324,000 gallons being the average daily quantity used. The water-mains have been extended 3,000 feet during the past year. Twenty-five nuisances were abated and one suit for failure to abate nuisance was commenced by the board. Sixteen meetings were held.

## WOOLWICH TOWNSHIP.

MEMBERS AND OFFICERS—Charles P. Batten, James Horner, H. Bradshaw; B. F. Busbey, M. D., Secretary and Inspector; Samuel Avis, Assessor. All of Swedesboro.

There are about 450 dwellings in the township. During the year ending June 30th, 1898, there were 50 births and 30 deaths. Nine deaths occurred in children under one year of age. Communicable diseases were reported as follows: Diphtheria, 3 cases; scarlet fever, 21 cases; typhoid fever, 2 cases. An inquiry into the origin of cases of typhoid fever indicated that both of the persons affected with this disease contracted the trouble outside the limits of this township. The physicians of the township uniformly report contagious cases. One slaughter-house is located in the township. It is managed by John Moore. Several trivial nuisances were reported, all of which were abated. Manure which is received from Philadelphia for fertilizing purposes is landed under the supervision of this board. Two meetings were held.

## HUDSON COUNTY.

MEMBERS AND OFFICERS—John E. West, M. D., President; John Connell, M. D., C. B. Converse, M. D.; C. J. Rooney, Jr., Clerk; John H. Weastell, Inspector; Michael Nevin; C. C. Hendrick, M. D., Medical Inspector; H. W. Winfield, Esq., Attorney. All of Jersey City.

## CITY OF BAYONNE.

MEMBERS AND OFFICERS—Mayor Egbert Seymour, P. Hanigan, Henry Meigs, V. Van Dyck, L. F. Donohoe, M. D., James Foerst; F. F. Martinz, Jr., Secretary; A. C. Forman, M. D., Inspector; J. H. Nevins, Deputy Inspector; A. T. Gill, Sanitary Inspector; James Benny, Attorney.

Total number of dwellings, 3,500. The following cases of contagious diseases were reported: Diphtheria, 98; scarlet fever, 77; typhoid fever, 20. Total number of houses infected, 145. Reports of communicable diseases are promptly received from physicians. The public water-supply is at present obtained from the East Jersey Water Company, the average daily quantity used being about 2,500,000 gallons. Three thousand dwellings are connected with the street water-mains, new connections being made frequently and the system of water-supply pipes being constantly extended. About 17 miles of sewers are in use in the city, 2,500 houses being connected thereto. Refuse materials are collected and disposed of by the city employees; removal is performed twice in each week; at present three horses and carts and six men are employed in this service, but it is proposed to increase the force; the cost of the removal of refuse materials for the calendar year 1897 was about \$4,500; the work is performed under the supervision of the health department; the total quantity of refuse materials removed during the year is estimated to have been 14,500 cubic yards, and the disposal was by dumping upon sunken lots and afterward covering with fresh earth. Night-soil is collected in airtight receptacles and disposed of by shipment to points outside of the city; between 600 and 700 privy vaults are in use in the city. Six hundred and ninety-four nuisances were investigated, 505 of which were abated.

Cases of infectious diseases which are not isolated in dwellings are sent to Snake Hill. House-to-house inspections are regularly conducted and records are kept of the same. A new hospital is being erected. Twelve regular and three special meetings. Complaint was

## HUDSON COUNTY—Continued.

received by the State board of health July 8th, 1898, concerning noxious gases proceeding from factories located on Constable Hook, in the city of Bayonne, and investigation was made and the following report is on file in reference to this case:

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

GENTLEMEN—At the request of the board of health of Bayonne an inspection was made July 9th of a number of nuisances existing in that portion of the city known as Constable Hook. The inspection was made in company with a committee of the board. The first place visited was a factory which is known as the Bergen Point Chemical Works. It is under the control of the Standard Oil Company and the product of the factory is sulphuric acid. This plant has been nearly doubled in its capacity within the last few years. We went carefully over the whole factory, and at one point near the factory and for over a quarter of a mile away on the south side the odors of sulphurous acid were so strong as to produce coughing and irritation of the throat. As nearly as we can locate the odors they came from four stacks and the superintendent informed us that they were planning to take these fumes and by a process of condensation recover much more of the acid which is escaping. This they are unable to do under the present conditions. The members of the committee recognized these odors as the ones complained of in the city of Bayonne. We next visited the large plant known as Oxford Copper Works. This company obtains copper ore from Canada, and in the first process of smelting the ore is roasted for the purpose of driving off sulphur, and from one stack the odor of sulphurous acid was noticeable and at the same time a distinct metallic taste was present. Very large quantities of smoke are given off from these works and by the prevailing winds are carried to that part of the Staten Island shore on the opposite side of the Sound.

We next visited the Kalbfleisch Chemical Co., located in the same section. This company produces sulphuric acid, and the process of manufacture and the odors resulting are the same as are found at the Bergen Point Chemical Works first described, although the odors are somewhat less. At the time of our visit they were taking out a number of the lead condensers and melting up the lead, and as the lead had become thoroughly saturated with sulphuric acid we were informed that the conditions were not as favorable as at other times.

We next inspected the works of the Tidal Oil Refining Company. In the refining of oil sulphuric acid is added to the crude petroleum and afterwards this acid is recovered by condensation. The fumes from the vaporization are passed through a large chimney containing coke, and a stream of water is constantly passed through the chimney. What remains of sulphuric acid is then drawn into a high stack and passed off into the air at a considerable elevation, and the superintendent informed us that this was the best method that had been devised for lessening the odors arising from the works. What is true of this company, the conditions and methods of handling the acids in this plant, also exist in the large refining works operated by the Standard Oil

## HUDSON COUNTY—Continued.

Company in this locality. The work in these factories which have been examined is continuously going on night and day. It will be seen that in each one of the plants examined the fumes of sulphurous and sulphuric acid are given off, and it is almost impossible to state which one is responsible for the nuisance, although the nuisance existing at the Bergen Point Chemical Works gives rise to more odors than the others. The examination was made in reference to the factories themselves, and no facts were obtained bearing upon the effects of odors upon public health. It can therefore merely be stated that objectionable odors are given off from the said factories.

August 9th, 1898.

The following extract from a letter to the *Bayonne Times* by Vedder Van Dyke, Esq., is published for the purpose of placing on record the experience of the board of health of the city of Bayonne in its endeavors to secure improvement in the method of disposal of excreta on school premises:

\* \* \* When the board of education enlarged School-house No. 5 it abandoned the sewer connection and the yard privies, and put, or, in its own peculiar vernacular, "installed" in the cellar of the building what it termed "a dry-closet system of sanitation." This system required three furnace-fires, one at each end of the closet arrangement and one in the middle. The latter is connected with a flue to the roof, and is intended to draw the hot air from the end furnaces over the contents of the closets, and send the currents, with their odors, up the flue, out of doors. The plant cost over \$700, and its operation required three furnace fires kept at a high temperature all the time.

The trustees claim that they adopted the system after careful study. The system went into operation. The Hook section is quite familiar with a variety of smells, and manages to get along with them. But when this system got in its work, that section was treated to a new and novel sensation; for the product of the system was a smell so strong and solid that it could be tasted and almost handled. Whenever it felt inclined, it took absolute possession of the school-house, and evicted the teachers and scholars.

The principal reported this intrusion to the board, but got no relief, and was compelled to more and more frequently surrender the school, in whole or in part, to the new visitor.

At a meeting of the health board on November 10th, 1897, the sanitary inspector referred in his monthly report to the subject, and recommended that the flue discharging the smell should be raised above the level of the adjoining furnace flues, so as to avoid back drafts. This was such a manifest defect in the system that the secretary was directed to call the attention of the school trustees to it. Later, at the same meeting, the subject came up again, and it appeared that some sort of a committee selected by the school trustees had just investigated the matter, and were prepared to report the system all right. Then it was that the health board appointed a special committee to look into the matter.

## HUDSON COUNTY—Continued.

This special committee visited the school on the afternoon of November 18th. It examined the dry closet system, the school building and the adjoining premises. This examination demonstrated positively that the bad smell was produced by the system in use. The smell escaped with great force and volume from the flue connected with the middle furnace. It rushed over the roof. It swung itself down and along the sides of the building, and then somehow forced its way inside. Detachments of the smell went frolicking about the neighborhood, enjoying the outdoor exercise and the distress of the residents. A strong west wind was blowing that afternoon. But it was evident that the smell was strong enough to flourish in any kind of wind, and even in a dead calm it could manage to have lots of fun indoors. The committee took the statements of the principal and the twelve teachers there. Each of them identified the smell as the product of the new system, and that alone. There had been no such smell there before its introduction. The usual smells of that section were familiar to them, and had never caused the school to be dismissed or produced sickness. They all said that this new smell was intolerable, causing headaches, nausea, dizziness, drowsiness and disease. When it entered a class-room, no other occupant could remain. Day after day the classes had been summarily put to flight. The principal told how many times he had reported the matter to the school board without avail. One of the learned school trustees was present at this time and heard these statements and was exposed to the smells. Yet his faith in the system survived.

The committee and the inspectors present, including an inspector from the State board of health, agreed as to the cause of the smell and its injurious effects.

A special meeting of the health board was held on November 23d, the report of the committee was unanimously approved and a resolution was unanimously adopted directing the school board to abate the nuisance forthwith by preventing further use of the closets. A copy of the resolution was the next day sent to each school trustee, and a copy of the report and resolution to their Secretary.

On December 8th, fourteen days after the notices had been sent, the health board met, and being then advised that the closets were still in use and the nuisance increasing, and the school board having paid no attention to the notice sent to it, a resolution was unanimously adopted ordering the Health Inspector to abate the nuisance forthwith. He did so the next morning.

Of course this action exposed the health board to the full force of the vocabulary which the school trustees have on tap at all times. They filled the newspapers with denunciations. Their president, at a joint meeting of the two boards on December 11th, really seemed to call the health commissioners to the bar in order to pronounce sentence upon them. The school board had found them guilty of trespass, of ignorance, of malice, of a wanton interference with a smell that cost the city over \$700. Although they sullenly submitted to the action of the health board and built an outside vault at an expense of over \$500, and thus ended the career of this \$700 smell, its precious aroma still lingers in their rooms in the City Hall. For at a meeting on Jan-

## HUDSON COUNTY—Continued.

uary 18th, it called upon the health board to furnish it with its proofs, etc., relating to the smell, in order that they might inspect and lay them before the city attorney. The author of the resolution no doubt thought that the health board should have cut off several chunks of the stench, and have them stowed away as exhibits, so as to hand them over. The health board, by a unanimous vote, adopted a draft of letter in answer to this request, and the only change made in the draft was substituting the word "expended" in place of the word "wasted," in reference to the \$700 said to "install" the smell.

This letter expressed a readiness to give any information it had to the City Attorney, upon his request, if he advised any suit under the contract. The school board did not want the proofs for its own information. It knew all about those proofs and ignored them, and referred to them in their resolution as "alleged" proofs. They wanted the "alleged" proofs, merely, as they said, to lay them before the city attorney. The health board declined to furnish the proofs for such purpose, first, because it was perfectly competent as a department of the city government to deal directly with the attorney, and secondly, because the school trustees would turn up as witnesses for the defense in case of a suit against the commissioners by the city. It would not be to the city's interests to give them the proofs. The school board suppressed the letter and ordered it returned. It was called abusive, insulting, malicious, spiteful and ungentlemanly. And thus, too, were some members of the health board characterized by some members of this learned body.

It would have been much more easy and comfortable for the members of the health board, if they had let the nuisance continue and had ignored the interest and health of the children and teachers of that school, and put the responsibility upon the broad shoulders of the school board. They would thus have escaped the odium of that learned body, and they might now have been treated by it as cherished friends.

The following opinion is worthy of the attention of those members of our board of education who believe that "dry closet" sanitation is the corner-stone of our public school system and the main object of our school buildings. The opinion is taken from an article on "School House Sanitation," contributed by Frederic Tudor, consulting sanitary engineer, to a work entitled "Municipal Architecture in Boston," edited by Prof. Francis W. Chandler of the Massachusetts Institute of Technology. Mr. Tudor says: "There may arise cases in suburban districts not yet sewered where the use of water must be restricted, and the resort to some kind of privy or dry system seems unavoidable. My opinion is that any apparatus of that sort is permissible only as a temporary expedient. In no event is it to be placed indoors. I do not say that it is impossible so to arrange and care for a privy within doors that it will be always harmless, but from the point of construction it is a difficult matter; the safety of the privy is made uncertain from the variety of conditions which may arise, and proper continuous care cannot be assured; any one of which conditions is a sufficient objection to the method. It should be borne in mind that if there is a back draught from a 'dry' latrine system, this soil, powdered as it is by heat, is in a condition which makes it most dangerous to health."

## HUDSON COUNTY—Continued.

Mr. Tudor, it will be observed, is able to consider this subject calmly and scientifically, because he has evidently not been exposed to the nauseating stench which were created by the Fifth Ward School "dry closet" method. If we had kept up that system, and if a detachment of its odors had taken a notion to pay a flying visit to Boston, as it might have done with its strength and staying power, it is safe to say that Mr. Tudor would have felt how idle it was to consider, in connection with a school-house, a system which under any circumstances or by any possibility could produce such a stink. He might, however, have suggested to our strategical board at Washington that the use of such machines along our sea coast would insure perfect protection from any foreign invaders in time of war.

When the scientists in the school board, who fought so hard to retain this "dry closet" system, think it all over can they avoid the conclusion that the health board did its duty in putting an end to it? That "dry closet" odor has not visited the school since the abolition of the system which caused it. The school house has since then been used for educational purposes and not as a stink-factory. Although the system cost the taxpayers \$750, was it not really better to lose that sum and to spend several hundred dollars more on the new outside privies than to injure the health of the pupils and teachers of that school and deprive pupils of its help and benefits, even though it might reflect somewhat upon the board of education's dignity and its wisdom and infallibility? However costly the apparatus, the health board could not consider the cost-price in dealing with it as a nuisance. Had it done so, as some school trustees urged, it would have had to classify smells not by their odiousness, but by their offence. A \$750 smell with an appetite capacity of a ton of coal a week, would be entitled to flourish here no matter how rank it might be, while a poor tramp smell, maintaining itself inexpensively by its wits, would have to be suppressed, not because it was one-half as rank as the other, but because it did not represent capital or have a bank account or influential friends. A board of health can recognize no aristocracy or special privileges in bad smells. They must all be treated as smells without regard to their lineage, wealth or pull.

## TOWN OF HARRISON.

MEMBERS AND OFFICERS—M. S. Squire, M. D., Henry Allen, M. D., M. O. F. Dolphin, M. D., Clarence Van Deren; Peter J. Goodman, Secretary; John T. McClure, Inspector; M. F. Barrett, Attorney, Newark.

Total number of dwellings, about 1,425. Nine cases of diphtheria. Twenty-five cases of scarlet fever and 8 cases of typhoid fever were reported. About 980 dwellings are connected with the public water-supply. The average daily quantity used being 278,912 gallons. Three miles and a half of sewers are in use in the town, and 620 premises are connected. Sixty-six premises have been connected

## HUDSON COUNTY—Continued.

during the past year. Garbage is collected under contract at an annual cost of \$1,200; two wagons, three horses and five men being employed in this service, which is conducted under the supervision of the board of health. Total number of cubic yards of garbage removed during the past year 18,562. Garbage is disposed of by dumping it upon meadows and covering with earth. Six hundred and twenty-five complaints were investigated, and 556 nuisances were abated. Sorting of rags is conducted in a manner to give offense. Fifteen suits at law were instituted, and judgment in each case was rendered for the board, the total fines collected amounting to 150 dollars. These suits were rendered necessary by a violation of the ordinance of the board regulating the storage of rags, bones, scraps and refuse articles. Fourteen meetings were held.

## HOBOKEN.

MEMBERS AND OFFICERS—E. T. Steadman, M.D., L. S. Fugazzi, August Grassmann, S. A. Helfer, M.D., G. M. Sinclair; James Havron, Secretary; Antonio Granelli, Inspector; Samuel Stanton, Assistant Inspector; J. A. Marnell, Plumbing Inspector; T. A. Lewis, Attorney.

Total number of dwellings, about 4,400. Births reported, 1,832; deaths reported, 1,089; deaths under one year, 282. Communicable diseases were reported as follows: Diphtheria 248, with 26 deaths; membranous croup, 27 cases, 15 deaths; scarlet fever, 155 cases, with 13 deaths, and typhoid fever, 38, with 10 deaths. About 4,300 premises are connected with the public water-mains. The daily quantity of water used is about 4,000,000 gallons. The system of water-supply pipes has been extended ten blocks during the past year. Thirteen miles of sewers are in use in the city, with which about 4,000 premises are connected. Forty-one premises were connected during the past year. Garbage is collected under contract at an annual cost of \$5,000. Six vehicles, six horses and twelve men are employed in this service. Garbage is collected daily, and is disposed of, together with rubbish and ashes, by dumping on the meadows. Excreta is deposited upon boats and removed from the city. One suit at law was instituted by the board for the transportation of a person dead with diphtheria in violation of ordinances. Forty-eight nuisances were investigated, 46 of which were abated. Twenty-two meetings were held.

## HUDSON COUNTY—Continued.

## JERSEY CITY.

MEMBERS AND OFFICERS—H. H. Abernethy, P. W. West, Adolph Walter, H. H. Brinkerhoff, M. D., J. M. Rector, M. D.; D. W. Benjamin, Inspector.

Number of dwellings in the city is 21,179. The following cases of communicable diseases reported: Diphtheria, 559; membranous croup, 59; scarlet fever, 650; typhoid fever, 159. Reports by physicians in regard to communicable diseases are promptly made. The total number of water-takers is about 21,000, and 35 million gallons a day is the average quantity of water used. About 20,000 premises are connected with the sewers. Refuse materials are collected under contract. The method of disposal, by dumping on low-lying lots and covering with earth. Night-soil is dumped into a scow and removed from the city. Complaints investigated during the year, 3,333; nuisances abated, 3,021. Twenty-five prosecutions for failure to abate nuisances were instituted. Five hundred and ninety-seven persons were vaccinated by the officers of the board of health during the past year. Fourteen meetings were held by the board.

The health officer reports for the year as follows: During the past year the officers of this department have visited 7,432 premises, finding 3,387 nuisances, and I have been successful in securing the abatement of 3,058 nuisances. The receipts were \$9,622.25 and expenses \$8,926.19.

There has been considerable extension to our sewerage system during the past year, and several hundred new connections were made to said extensions. Under the law it is our duty to see that all houses fronting or abutting on streets where there is a sewer are properly connected to the same. As soon as a new sewer is completed we send an officer and get the names of all owners of houses fronting on line of new sewer and send notice to them compelling them to connect with the same, consequently there has been a noticeable decrease in complaints of waste-water from houses running into gutters of streets, which is a nuisance and *detrimental* to the health of citizens.

During the past year, and other years, it is clearly proven by our records that scarlet fever and diphtheria are more prevalent during the time that our schools are open. During the summer vacation our reports of contagious diseases decreased seventy-five per cent., and after



## HUDSON COUNTY—Continued.

## HUDSON COUNTY—Continued.

	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	Total.
<b>CONTAGIOUS DISEASES—</b>													
Membranous Croup.....	5	9	7	3	2	2	9	2	2	1	3	9	54
Diphtheria.....	62	49	41	36	43	44	54	45	20	10	32	82	557
Scarlet Fever.....	62	70	84	102	81	82	73	33	26	30	54	68	775
Typhoid Fever.....	40	33	39	7	4	0	7	1	1	8	4	2	146
Measles.....	64	65	70	141	109	78	61	24	8	1	2	1	624
Glanders.....			2	2		2	2						8
Total.....													2164
<b>VACCINATIONS.....</b>													
	45	53	40	45	40	35	20	9	10	140	76	35	548
<b>PERMITS GRANTED—</b>													
To Clean Privy Vaults.....	59	58	26	86	120	162	153	112	151	121	120	71	1239
To Children to Return to School.....													2202
To Cart Refuse from Slaughter-house.....													3
To Store Rags.....													15
To Collect Hides and Fat.....													65
To Slaughter Cattle and Sheep.....													24
To Slaughter Chickens.....													23
To Build Privy Vaults.....													0
To Keep Cows.....													0
To Keep Chickens, etc.....													1399
To Keep Dogs.....													14
To Cart Manure.....													0
To Cart Hog Hair.....													0
Wool-Pulling.....													25
Unloading Vessels.....													34
Swill Wagons.....													12
To Transport Bones.....													1
To Transport Damaged Eggs.....													1
To Store Hides.....													2
Build Manure Vault.....													
NOTICES SENT.....	771	1065	1075	1275	1106	992	932	1693	1466	407	600	718	12100
To Exclude Children from School.....													3067
<b>NUMBER OF PREMISES VISITED—</b>													
First Precinct.....	78	46	89	129	132	104	117	75	73	75	163	185	1337
Second Precinct.....	84	98	92	119	128	87	104	69	65	60	124	161	1191
Third Precinct.....	68	74	67	121	119	91	86	58	59	32	97	90	962
Fourth Precinct.....	73	71	58	104	101	99	77	53	61	52	85	83	917
Fifth Precinct.....	70	62	43	99	96	78	81	49	39	29	72	61	785
Sixth Precinct.....	89	88	92	157	172	132	144	78	89	80	159	118	1348
Seventh Precinct.....	48	69	74	112	106	89	69	45	49	32	83	59	859
Total.....													7482
<b>VESSELS ARRIVED.....</b>													
	14	14	17	16	24	18	25	15	16	14	15	15	203
<b>PREMISES DISINFECTED.....</b>													
													712
<b>DEAD ANIMALS REMOVED.....</b>													
													3947
<b>NUMBER OF DOGS DESTROYED.....</b>													
						31	17	61	206	397	306	31	1049

PLUMBING PERMITS GRANTED.	First District.		Second District.	
	Ex.	New.	Ex.	New.
Ex.....			307½	342
New.....			362	203
Total.....			769½	545

## KEARNEY TOWNSHIP.

MEMBERS AND OFFICERS—C. J. Silliman, Arlington; W. J. Gorsuch, Arlington; E. J. Goldberg, M. D., Kearney; Wm. Beardsley, Kearney; Robert F. Lord, Kearney; James A. Exton, M.D., Health Officer, Kearney; James M. Matthews, Arlington; Clark W. Beach, Inspector, Arlington; J. Franklin Crowell, Attorney, Arlington.

Number of dwellings in township, 2,000. Communicable diseases were reported as follows: Diphtheria, 5; membranous croup, 2; scarlet fever, 22; typhoid fever, 32. All of the typhoid cases occurred in different dwellings. Fourteen hundred dwellings are connected with the public water-supply. One and one-half miles of water-pipe have been laid during the past year. Twelve miles of vitrified sewer-pipe have been laid and 1.66 miles of brick sewer have been constructed. About 1,500 premises are connected with the sewer system. Garbage, ashes and rubbish are collected by the township authorities at an annual cost of \$1,236, and disposed of by dumping upon the ground. Two hundred and ninety complaints were investigated and all nuisances found to exist were abated. One suit was brought for violation of the requirement relating to the reports of vital statistics. Monthly meetings were held.

## WEST HOBOKEN TOWNSHIP.

MEMBERS AND OFFICERS—Wm. White, M. D.; Edward McDermott, Assessor; John C. Robertson, Secretary.

There are about 3,200 dwellings in the township. Thirty complaints were investigated. Two prosecutions were begun for the abatement of nuisances. Monthly meetings were held.



## HUNTERDON COUNTY.

## BETHLEHEM TOWNSHIP.

MEMBERS AND OFFICERS—John Johnson, Bloomsbury; J. V. Williver, Bloomsbury; Wm. Creveling, Bloomsbury; E. D. Riegel, M.D.; Samuel O. Myers, Assessor and Secretary; M. H. Wyckoff, Attorney, Asbury.

The following hamlets are located in the township: South Asbury, population about 150; West Portal, population about 350; Bloomsbury, population about 850. Two slaughter-houses are in the township; one owned by John D. Sidders, Bloomsbury, and one is conducted by Henry Kraus, Glen Gardner. Two nuisances were investigated and both were abated. Three meetings were held by the board.

## BOROUGH OF CLINTON.

MEMBERS AND OFFICERS—F. A. Ety, W. H. Baker, M. D. Knight, M.D.; Chester Thompson, Secretary; J. W. Berry, Inspector.

There are about 200 dwellings in the borough. Eight births were reported and 15 deaths. A public water-supply has recently been introduced. Four meetings were held by the board.

## CLINTON TOWNSHIP.

MEMBERS AND OFFICERS—W. E. Berkaw, M. D., Annandale; Theodore J. Starner, Annandale; Cyrus A. Conover, Potterstown; Garret S. Kinney, Annandale; Bergen B. Berkaw, Assessor and Secretary.

The following hamlets are situated in the township: Annandale, estimated population, 375; Lebanon, estimated population, 375; Allerton, estimated population, 50; Hamden, estimated population, 30; Potterstown, estimated population, 25; Cokesburg, estimated population, 100. There are about 600 dwellings in the township. Births, 28; deaths, 25; deaths under one year, 2. One case of scarlet fever was reported. A public water-supply has been provided for Annandale and the borough of Clinton. One slaughter-house is located in the township, near Lebanon, operated by Edward W. Davis. One complaint was investigated and one nuisance abated. Four meetings were held by the board.

## HUNTERDON COUNTY—Continued.

## DELAWARE TOWNSHIP.

MEMBERS AND OFFICERS—Samuel S. Robinson, Raven Rock; Anderson Bray, Sergeantsville; Wm. H. Brewer, Sergeantsville; Geo. N. Best, M.D., Rosemont; John E. Barker, Secretary and Assessor, Oakdale; A. P. Chamberlain, Attorney, Flemington.

One slaughter-house, conducted by Sherman Bros., is located in the southern portion of the township. Two meetings were held by the board.

## EAST AMWELL TOWNSHIP.

MEMBERS AND OFFICERS—Edward Larowe, Rocktown; Wm. Hixson, Wertsville; Chas. Case, Reaville; P. C. Young, M.D., Secretary, Ringoes; Wm. Clayhammer, Assessor, Wertsville; O. J. Blackwell, Attorney, Ringoes.

Small settlements are located in the township as follows: Ringoes, estimated population, 400; Wertsville, estimated population, 50; Van Liew's Corner, estimated population, 50; Unionville, estimated population, 20; Rocktown, estimated population, 15; Clover Hill, estimated population, 25; Reaville, estimated population, 25. There are about 350 dwellings in the township. One case of diphtheria and 3 cases of scarlet fever were reported. Two slaughter-houses are situated in the township, one at Ringoes, conducted by Ira Munson, and one at Linvale. Five meetings were held by the board.

## FRANKLIN TOWNSHIP.

MEMBERS AND OFFICERS—I. Mathis, Pittstown; W. S. Scott, Quakertown; John Anderson, Quakertown; Q. E. Snyder, M. D., Quakertown; Isaac Snyder, Assessor and Secretary, Quakertown.

Quakertown has about 113 inhabitants; Pittstown, 200 and Sidney, 25. There are about 350 dwellings in the township. One nuisance was abated. Three meetings were held.

HUNTERDON COUNTY—*Continued.*

## BOROUGH OF FRENCHTOWN.

MEMBERS AND OFFICERS—Wm. Hoffman, Benj. Philhill, Chas. Sigafoss; P. W. Bloom, Secretary; Geo. Stintzman, Inspector; L. D. Hagaman.

Two meetings were held.

## BOROUGH OF HIGH BRIDGE.

MEMBERS AND OFFICERS—P. J. Murray, Percival Chrystie, Samuel Tait; Charles F. Halsted, M. D., Inspector; Geo. F. Hummer, Assessor; John F. Phillips, Secretary; John Ayers, Glen Gardner.

One slaughter-house is located in the borough, conducted by John Lunger. Four complaints were investigated and the objectionable conditions were removed. Three meetings were held.

## KINGWOOD TOWNSHIP.

MEMBERS AND OFFICERS—Jacob W. Bloom, Baptisttown; Isaac N. Search, Baptisttown; Thomas McAlone, Baptisttown; Frank S. Grimm, M. D., Inspector, Baptisttown; Samuel J. Snyder, Assessor and Secretary, Locktown.

Hamlets are located in the township as follows: Baptisttown, population about 75; Barbertown, population about 50; Milltown, population about 30. Total number of dwellings, 406. Births reported, 37; deaths reported, 11; 1 death under one year. There is one slaughter house in the township, which is conducted by Frank Fisher. One meeting was held.

## CITY OF LAMBERTVILLE.

MEMBERS AND OFFICERS—Gervas Ely, Frank W. Davison, M. D., Albert D. Anderson, Wm. A. Cole, Chas. A. Jewell; James H. Reynolds, Secretary; John D. Coryell, Inspector; L. H. Sergeant, Attorney.

Number of dwellings in city, 1,180. Births reported, 98; deaths reported, 84; deaths under one year, 18. Twelve cases of diphtheria, five cases of scarlet fever were reported. Two hundred and sixty-six dwellings are connected with the public water mains; an extension of about 2,600 feet of water-supply pipes was made during the year.

HUNTERDON COUNTY—*Continued.*

Garbage is collected under contract at an annual expense for the year 1897 of \$400; there are two collections per week during July, August and September, and one collection in each week for the remainder of the year, the disposal being by dumping upon low-lying lands.

Two vehicles and two men are employed in this service. Rubbish and ashes are disposed of in the manner already described in the case of garbage. Forty complaints were investigated by the board during the year, and all nuisances found were abated. House-to-house inspections are made at stated intervals and records are kept. Thirty-six meetings were held by the board.

## LEBANON TOWNSHIP.

MEMBERS AND OFFICERS—Stewart Lance, Anthony; Wm. V. Prall, Change-water; Geo. Apgar, Califon; A. S. Banghart, Secretary and Assessor, Glen Gardner; F. B. Fulper, M. D., Inspector.

The following hamlets are located in the township: Glen Gardner, population about 500; Califon, population about 200; Change-water, population about 150; Anthony, population about 100; Pennville, population about 100; New Hampton, population about 80. There are about 800 dwellings in the township. Births reported, 31; deaths reported, 34. Eight cases of scarlet fever and one of typhoid were reported. Chas. Creveling conducts a slaughter-house at Change-water, and M. M. Hanna also maintains a slaughter house in Anthony. Six complaints were investigated and the nuisances were abated in each instance. Three meetings were held by the board.

## RARITAN TOWNSHIP.

MEMBERS AND OFFICERS—Wilson B. Moore, Asa Fisher, Joseph Seargent, John H. Ewing, M. D.; Charles Alpaugh, Secretary; H. L. Stout, Attorney. All of Flemington.

There are about 1,000 dwellings in the township; births reported, 70; deaths, 80. One case of diphtheria was reported. About 150,000 gallons of water is the average daily quantity used. One hundred and ninety dwellings are connected with the water-supply.

HUNTERDON COUNTY—*Continued.*

A system of sewerage is under construction. Ten complaints were investigated and 9 nuisances were abated. A preliminary injunction was granted at the suit of the board, restraining a slaughter-house from maintaining a nuisance. Fifteen meetings were held by the board.

## READINGTON TOWNSHIP.

MEMBERS AND OFFICERS—William R. Ewing, Pleasant Run; John R. Foster, Three Bridges; Wm. H. Reger, White House Station; F. L. Johnson, Stanton; Eugene Hoffman, Assessor and Secretary, White House Station.

White House Station has 375 inhabitants; Three Bridges, 200; White House, 140; Stanton, 110, and Pleasant Run, 90. Births reported, 61; deaths, 48. One case of diphtheria and one of typhoid fever occurred. One meeting was held by the board.

## UNION TOWNSHIP.

MEMBERS AND OFFICERS—Sylvester Taylor, Pittstown; J. W. Hawk, Clinton Jonas Thorp, Pattenburg; N. E. Boileau, Inspector, Jutland; John Little, Assessor, Jutland; P. A. Queen, Attorney, Flemington.

Total number of dwellings in the township, 235. Births reported, 18; deaths, 14. One case of diphtheria was reported. There are two slaughter-houses in the township, one at Pattenburg, managed by John S. Gano, and the other at Jutland, managed by John S. Young. Two meetings were held.

## WEST AMWELL TOWNSHIP.

MEMBERS AND OFFICERS—R. H. Fisher, Lambertville; Wm. N. Holcombe, Mt. Airy; John M. Smith, Lambertville; Frank W. Larison, M. D., Lambertville; G. H. Carr, Assessor and Secretary, Lambertville.

There are 193 dwellings in the township. Four births and 6 deaths were reported. One death under one year occurred. Two nuisances were abated. Four meetings were held, including one meeting with the Lambertville board of health.

## MERCER COUNTY.

## EWING TOWNSHIP.

MEMBERS AND OFFICERS—J. A. H. Delp, Trenton; Samuel T. Atchley, Ewingville; H. G. Hough, Trenton; J. S. Hough, M. D., Trenton; J. M. Mathews, Assessor and Secretary, Trenton.

Total number of dwellings, 550. Communicable diseases are not promptly reported by physicians. Two complaints were investigated and two nuisances were abated.

## HAMILTON TOWNSHIP.

MEMBERS AND OFFICERS—Wm. Sykes, Trenton; Geo. C. Cubberly, Trenton; Amos H. Cole, Yardville; George R. Robbins, M. D., Hamilton Square; Timothy Scooby, Yardville; Azariah Cubberly, Secretary, Hamilton Square; John Sykes, Attorney, Hamilton Square.

The following hamlets are located in the township: Hamilton Square, population about 900; Yardville, population about 450; Groveville, population about 350; Holmdell, population about 400. Total number of dwellings in township, about 2,000. Four slaughter-houses are located in the township, as follows: One at Hamilton Square, managed by Wm. F. Hughes; one at Yardville, managed by J. K. Tindall; one at Groveville, managed by John Hepburn, and one at Hamilton Square, managed by C. L. Rogers. Two nuisances were abated. Four meetings were held by the board.

## BOROUGH OF HOPEWELL.

MEMBERS AND OFFICERS—Wm. W. Drake, E. P. Hawke, M. D., S. V. Van Zandt, Wm. I. Phillips, T. A. Pierson, M. D.; W. J. Phillips, Secretary; C. E. Voorhees, Inspector.

There are about 260 dwellings in the borough. Seventeen births were reported, and 16 deaths. Six meetings were held.

MERCER COUNTY—*Continued.*

## HOPEWELL TOWNSHIP.

MEMBERS AND OFFICERS—John Fleming, Pennington; N. Stout Voorhees, Glen Moore; Pearson B. Hunt, Titusville; Wm. M. Radcliffe, M.D., Inspector, Pennington; Wilson D. Hunt, Secretary, Harbourton.

A slaughter-house, managed by Benjamin Taylor, is located near Pennington. One nuisance was abated. Seven meetings were held.

## LAWRENCE TOWNSHIP.

MEMBERS AND OFFICERS—John B. Cranston, Lawrenceville; James W. Philips, Slackwood; Clark Flock, Lawrence Station; Edmund De Witt, M. D., Lawrenceville; Isaac B. Baker, Assessor and Secretary, Lawrence Station.

The following incorporated communities are located in the township: Lawrenceville, resident population about 150; Lawrence Station, population about 40. A preparatory school located in Lawrenceville increases the population of this locality to about 628. Number of births reported, 11. Number of deaths reported, 19. One complaint was received by the board and one nuisance abated. Eight meetings were held.

## CITY OF TRENTON.

MEMBERS AND OFFICERS—G. D. W. Vroom, Thomas S. Chambers, F. V. Cantwell, M. D., Frank J. Epple, Adam Extor, Wm. H. Milburn; Wm. Cloke, Secretary; E. W. McGalliard, M. D., Inspector; Wm. C. Allen, Assistant Inspector; Edward L. Titus, Assistant Inspector; Edwin R. Walker, Attorney.

Communicable diseases were reported as follows: Diphtheria, 96 cases, with 13 deaths; scarlet fever, 111, with 3 deaths; typhoid fever, 110 cases, with 15 deaths. The average daily quantity of water used during the year was 5,234,000 gallons. About 3,700 feet of water-mains have been laid. Thirty-six and one half miles of sewers are in use in the city and 573 premises have been connected with the sewers during the year.

Garbage is removed three times a week, four men and four vehicles being employed at this service, at an annual cost to the city of \$5,000. Eight hundred and forty complaints were investigated, and two suits

MERCER COUNTY—*Continued.*

were instituted for failure to abate nuisances. House-to-house inspections are made from time to time, and records of the same are kept in the office of the board of health. Eight meetings were held.

## WASHINGTON TOWNSHIP.

MEMBERS AND OFFICERS—Forman Hutchinson, Windsor; Harrison Hutchinson, Hamilton Square; Laban H. Brown, Robbinsville; George S. Silvers M.D., Windsor; John B. Yard, Robbinsville.

One case of typhoid fever was reported; one nuisance was abated; two meetings were held.

## MIDDLESEX COUNTY.

## BOROUGH OF DUNELLEN.

MEMBERS AND OFFICERS—C. D. Boice, G. W. Churchill, S. W. Brakeley, M.D.; G. E. Lowry, Secretary; J. Peters, Inspector.

Number of dwellings in borough, about 300. Total births reported, 19; total deaths reported, 11; 1 death under one year. Eleven cases of diphtheria, with two deaths, were reported. Four cases of scarlet fever occurred. One meeting was held.

## CRANBURY TOWNSHIP.

MEMBERS AND OFFICERS—A. M. Davison, I. M. Cubberly, Edward Clayton, H. C. Symmes, M.D.; J. H. Goodwid, Assessor and Secretary.

The following hamlets are located in the township: Cranbury, having about 700 inhabitants; Plainsboro, with about 300 inhabitants. Two slaughter-houses are located in the township, near Cranbury. One is managed by J. Murphy and one by Wm. M. Baker. One meeting was held by the board.

## MIDDLESEX COUNTY—Continued.

## BOROUGH OF HELMETA.

J. L. Elliot, borough clerk, informs us that no board of health has yet been organized in this borough.

## MADISON TOWNSHIP.

MEMBERS AND OFFICERS—Ambrose Green, Old Bridge; N. H. Lamberson, Cheesequakes; James Fountain, Browntown; D. H. Brown, Assessor and Secretary, Browntown; G. W. Farrington, Browntown.

The board held three meetings during the year.

## BOROUGH OF MILLTOWN.

MEMBERS AND OFFICERS—F. E. Riva, M. D., C. Wagner, A. Wagner, R. Hustis, G. C. Lewis, B. Christ; C. W. Kuhltan, Secretary.

Three meeting were held.

## NORTH BRUNSWICK TOWNSHIP.

MEMBERS AND OFFICERS—Wilson Williamson, New Brunswick; John B. Herbert, New Brunswick; Theo. H. Buckalew, New Brunswick; A. E. Bowman, Secretary and Assessor; John D. Ten Eyck, Inspector, Franklin Park.

One nuisance was abated. Two meetings were held.

## PERTH AMBOY.

MEMBERS AND OFFICERS—Rev. Jas. S. Lancaster, F. O. Pierson, Louis Garben, Jas. B. Toomey, Jas. E. Chapman, Wm. D. Sofield, Louis Fade; E. A. Hults, M. D., Secretary and Inspector; Jas. S. Wight, Attorney.

Number of dwellings, 2151. Births reported, 340; deaths reported 279; deaths under one year, 94. Fifty-two cases of diphtheria were reported with 16 deaths; membranous croup, 8 cases reported with 6 deaths; scarlet fever, 24 with no deaths; typhoid fever, 2 cases and 2 deaths. Average daily quantity of water supplied for

## MIDDLESEX COUNTY—Continued.

the city has been 2,000,000 gallons, and the number of dwellings connected with the water-mains is about 1100. About one mile of water pipes have been laid during the past year. Eleven miles of sewers are in use in the city, there being 297 premises connected to them, 91 of which were connected during the past year. About three-fourths of a mile of new sewers are at present under construction. Garbage is collected under contract by the city and is disposed of by dumping upon the surface of the ground. It is collected four times in each week in the summer season and twice weekly in winter, there being two wagons and four men employed in this service, at an annual expense of \$2,300. Rubbish and ashes are not separated from the garbage. About 1,800 privy vaults are in use in the city. Three hundred and forty-six complaints were investigated during the year, and 351 nuisances were abated. Six suits were brought for failure to comply with the health ordinances. Fifteen meetings were held by the board.

The Secretary, E. A. Hults, M. D., reports as follows:

The water problem, as it affects our city, is still a vexing one. The degree of contamination present in the city water during the hot summer months was very alarming. This condition of the water must affect vitally, to a greater or less degree, the health of every person using it.

The water as it emanates from its source was found by analysis to be pure and wholesome. If it be permitted to flow through the pipes to the consumers in its virgin purity, one factor in municipal progress and the conservation of health will have been supplied.

A new pumping engine is being put in at Runyon, which will render the plant more effectual in its work.

An open well is to be dug, and some artesian wells are under consideration. When these improvements are completed the city will be able to furnish its inhabitants with water fit to use.

We can report much progress in the direction of sewerage. Two new branch sewers have been constructed during the past year, aggregating about one-half mile.

Another branch sewer on New Brunswick avenue is to be built soon, connecting with the Fayette street system.

This sewer at its head is to be supplied with an automatic syphon for the intermittent flushing of the sewer. This will be a valuable adjunct to the sewer in question, and the same principle extended to our whole sewerage system would render it more sanitary and therefore more healthful.

One great defect or disadvantage in our sewer system is that many of the sewers have been found inadequate for carrying away the water, especially

## MIDDLESEX COUNTY—Continued.

that which comes to them during a heavy rainfall. In consequence of this many houses on the line of these sewers often have their cellars covered with sewage that backs in after a rain, carrying with it matter that is very offensive and detrimental to health, as well as destroying much property.

This will be remedied to some extent in the vicinity of Hall avenue by diverting a portion of the water accumulating there and carrying it around by another channel and discharging elsewhere. The incapacity of other sewers will also be remedied as soon as possible by relieving the already overburdened sewers.

A careful study of the sewer map of this city shows about 11.21 miles of sewers, 5.12 miles of trunk systems and 6.09 miles of branch systems.

Two sections of our city are yet greatly in need of sewers.

By the free use of disinfectants we have been enabled to keep under control for the time being many otherwise foul spots.

Several stagnant ponds and sunken lots have been filled in during the past year, so that now the danger from this source is comparatively little.

While the collection of garbage and disposal of it is under the control of the city, the board maintains an inspection over the dumping places.

Much good has been accomplished by filling in gullies and sunken lots.

During the summer months this work is confined to one or two places, and the material is well covered with earth after each day's dumping.

The same difficulty is experienced with night-soil as with garbage, there being no suitable place for the disposal of it. Most of the night-soil is taken out of the city, covered with manure and cared for by the farmers.

Many of the people living in the outlying districts are ignorant of the fact that they are not permitted to clean their own privy-vaults.

Many defective vaults have been found and ordered to be made water-tight.

A large number of these vaults are on property owned by the laboring class, and not on the line of a sewer. As fast as possible these will be removed and others will be required to conform to the code. While we do not desire to impose any needless expense on thrifty law-abiding citizens, yet we recognize in the old, defective wooden vaults a possible source of danger to the health of our city.

A complete inspection of dairies and dairy premises was made during the months of December, 1897, and January, 1898.

The inspection was made according to the following order:

Number of cows kept; food; condition of cows; condition of stable and yard; manure, where stored; quantity of milk produced; where milk is stored; is milk cooled? water-supply for stock; water-supply for washing cans; license number; number of quarts sold daily.

According to a city ordinance passed last year each dealer is required to register his or their name with the city clerk, together with the address, whether they produce their own milk or not and to display his or their name and license number on their wagons.

When this inspection was made about forty persons were engaged in the sale of milk. A record is kept of the inspections made.

## MIDDLESEX COUNTY—Continued.

The items as taken from the records were arranged in tabular form and from this table the following important facts are gathered:

Number of cows kept, 238.

Condition of cows was generally good.

Only one milkman was found who fed brewer's grains, and this a very small amount, which was discontinued.

Seven stables were classed as in fair condition. One was very unclean; cows were not clean; persons milking were careless; there was insufficient air-space, light and ventilation. A large quantity of manure was stored just outside of the stable in a low, damp place.

This stable was ordered enlarged and put in a clean condition. Subsequent inspections showed that the suggestions and recommendations of the board had been carried out. The other stables were also ordered to be kept clean.

All but eight (8) of the milkmen cool their milk before selling it. So far as could be ascertained, only five bottle their milk before selling it.

Eighteen hundred and twenty quarts are produced daily, and 2233 quarts sold daily. The difference between amount produced and that sold is obtained from dairies and creameries outside of our city.

These dairies and creameries were also inspected and found to be in good condition.

It was found out during the past summer that some of our milk dealers were using "preservative." A sample of this was submitted to the State Dairy Commissioner for analysis. This question is now under consideration.

The question of prosecuting non-residents for violation of the health code should receive more consideration at the hands of those in authority. The law seems to be defective on this point.

Another new school building was erected this year in a densely populated portion of our city. This is a large, commodious building, well lighted and ventilated. The sanitary system is excellent.

## PISCATAWAY TOWNSHIP.

MEMBERS AND OFFICERS—John M. Dayton, New Market; Jos. V. D. Field, Bound Brook; John H. Sebring, Bound Brook; M. J. Whitford, M.D., New Market; C. E. Kelly, Assessor and Secretary, New Market.

Births reported, 24; deaths, 30. Eight cases of diphtheria were reported. Two meetings were held.

## RARITAN TOWNSHIP.

MEMBERS AND OFFICERS—Luther Tappan, William Thornal, Oscar Martin; Wm. Van Sicklen, Assessor and Secretary; Wm. McKenzie, M.D. All of Metuchen.

MIDDLESEX COUNTY—*Continued.*

## BOROUGH OF SAYREVILLE.

MEMBERS AND OFFICERS—Joseph Smith, Casper Boehm, John M. Blew; B. F. Samsel, Secretary; Thos. Keegan, Inspector; Howard MacSherry, Attorney, New Brunswick.

Total number dwellings, 500. Births reported, 90; deaths, 30; deaths under one year, 4. Thirteen cases of diphtheria, eight of scarlet fever and one of typhoid fever were reported. A meeting of the board is held each month.

## BOROUGH OF SOUTH AMBOY.

MEMBERS AND OFFICERS—J. L. White, M. D., Bernard Roddy, John I. Taylor; J. F. Fulton, Secretary; Thomas Baker, Inspector; H. B. Willis, Counsel, New Brunswick.

Births reported, 136; deaths, 104; deaths under one year, 38. Four cases of diphtheria occurred. An extension of the sewer system was made during the year and a new outlet was provided. Forty-eight nuisances were abated. Fifteen meetings were held.

## SOUTH BRUNSWICK TOWNSHIP.

MEMBERS AND OFFICERS—Willard McDowell, Dayton; Frank W. Stout, Monmouth Junction; Edgar Carroll, M.D., Dayton; H. E. Hathaway, Secretary and Assessor, Monmouth Junction; John S. Voorhees, Attorney, New Brunswick.

Dayton has 250 inhabitants, Monmouth Junction, 200; Kingston, 250; Franklin Park, Deans and Plainsboro have each 100. One case of diphtheria and 2 of scarlet fever occurred. A slaughterhouse, managed by Wm. S. Smith, is located at Deans. Physicians do not report communicable diseases promptly. One meeting was held by the board.

## BOROUGH OF SOUTH RIVER.

MEMBERS AND OFFICERS—Arthur M. Clark, Wilbur Conover, Robert Davison, Chas. E. Burnett, M. D.; R. Van Dyke Reid, Secretary.

Fourteen cases of diphtheria and seven of scarlet fever were reported. Physicians are not prompt in reporting communicable diseases,

MIDDLESEX COUNTY—*Continued.*

several days often elapsing after the appearance of cases before notice is sent to the health office. Five nuisances were abated. The board was organized July 5th. For a time semi-monthly meetings were held. At present the board meets monthly.

## WOODBIDGE TOWNSHIP.

MEMBERS AND OFFICERS—Jas. V. Freeman, Woodbridge; E. W. Christie, Sewaren; T. F. Dunnigan, Woodbridge; C. M. Liddle, Secretary, Woodbridge; Ira T. Spencer, M. D., Inspector, Woodbridge; C. C. Hommann, Attorney, Perth Amboy.

Births reported, 150; deaths, 70; deaths under one year, 16. About fifty dwellings are connected with the public water-supply. About five miles of sewers are in use and three miles will be added in the near future. Fifty nuisances were reported and investigated. All nuisances found were abated. Monthly meetings are held.

## MONMOUTH COUNTY.

## CITY OF ASBURY PARK.

MEMBERS AND OFFICERS—N. E. Buchanan, President; James A. Bradley, Theodore H. Beringer, David W. Sexton, Walter W. Davis, Randolph Ross, Jesse Minot; David C. Bowen, Secretary; Sam. A. Patterson, Attorney.

The secretary writes as follows:

In presenting the annual report of the board of health for the year ending October 1st, 1898, it is gratifying to be able to show that the results of the efforts of this department of the local government in guarding the sanitary interest of the city have been marked with some advancement.

Among the important works which have been carried on by this board during the past year are (1) the improvement of the public garbage service; (2) efforts to improve the public milk-supply; (3) the prevention of the sale of ice known to have been harvested from polluted waters.

The death-rate for the year has been the lowest ever recorded in Asbury Park. The number of cases of communicable diseases

## MONMOUTH COUNTY—Continued.

reported is also smaller than before recorded, and but one death from the notifiable communicable diseases has occurred.

Perhaps the most distinguishing feature in the local sanitary administration of this city is that of keeping a sanitary record of each individual premises. These records have been continually kept since the establishment of the board of health in 1880, and they are growing more valuable each succeeding year. They are frequently consulted by persons contemplating the purchase or lease of properties, and house-owners are becoming interested to know how their property is rated on the sanitary records of the health office.

The following specimen records give an idea of this work, and it will be noted that one of these records shows conditions on a lot where the improvements are new, while the other record relates to a house which was built in 1878, ten years earlier.

These record sheets are bound in books, and a book is provided for each street, and every property on the street is recorded, the record being corrected and extended from time to time.

## RECORD OF SANITARY INSPECTION.

No....., Eighth Avenue.  
Owner..... Address—Asbury Park.  
Agent.....

*Site of House.*

1. Size of lot—50 feet x 150 feet. Area of lot—7,500 square feet. Area covered by buildings—About 2,100 square feet.
2. Has lot been filled in? No.
3. Elevation of house sill above curb—About 6 feet.
4. Ground water level below curb—About 8½ feet.
5. Height of buildings on adjoining lots—Two and a half stories on east, about 17 feet distant; two and a half stories on west, about 15 feet distant.
6. Yard—Covered with grass; graveled driveway.
7. Privy-vault—None.
8. Catch-basin: size—16 inches x 16 inches x 44 inches; size of grating, 16 inches x 20 inches; how covered, flagging-stone and iron; is ventilation adequate? Yes.
9. Cesspool—None.
10. Water-supply—Public water-works.
11. Stable—None (See Note); number of stalls, 3; how floored, concrete of gravel and hydraulic cement; disposal of fluid excrement, conveyed to sewer through iron pipe; storage of solid excrement, upon receptacle; manure receptacle, concrete basin above ground surface; size, about 5 x 6 feet; cover, water-tight roof.

## MONMOUTH COUNTY—Continued.

12. Chickens kept on premises? No.
13. Garbage: how stored? Covered metal can.

*House.*

14. House erected—Winter 1896-7.
15. House used for boarders? No. For other business? No.
16. House faces—North; sun exposure, unobstructed.
17. Number of sleeping-rooms—Eleven.
18. Rooms without windows—None.
19. Heating—Hot-air furnace; has furnace an air-tight fresh-air box? Flagging-stone and wood.
20. Lighting—Gas and electricity.
21. Number of stories high—Two and a half.
22. Material of construction—Wood; sheathed and covered with building-paper? Yes.
23. Fire-escape—None.
24. Roof—Shingles.
25. Back dwelling on lot—No.
26. Foundation: thickness.....; damp? No.
27. Cellar: how floored—Cement; under all of house? Yes. Outside entrance? Yes. Number and size of windows, 10—24 x 28 inches; is cellar dry or damp? Dry. Is ground-water level below cellar bottom? Yes. Is cellar well ventilated? Yes.

*Plumbing.*

28. Water-closets: number—Two; located, one on first floor in separate apartment, one on second floor in apartment adjoining bath-room; style, syphon jet and washout; condition, good; windows in water-closet apartment, yes; is apartment used for sleeping-room? No.
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? Private family.
35. Number of families? One.
36. Diseases reported during past year? None.
37. Diseases reported during past ten years? None.
38. Deaths during past year? None.
39. Deaths during past ten years? None.

D. C. Bowen, *Inspector.*

March 1st, 1897.

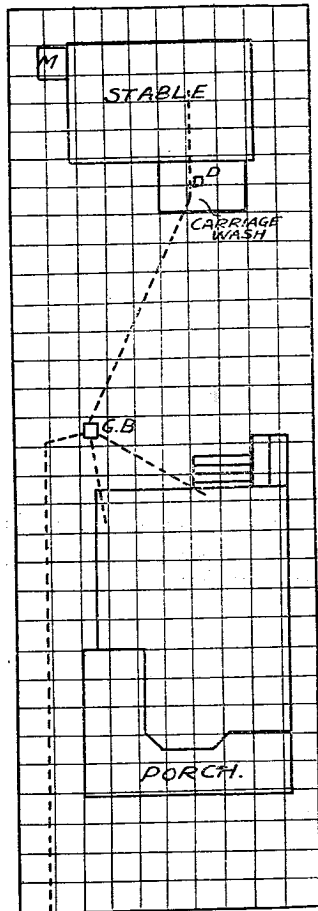


## MONMOUTH COUNTY—Continued.

PLAN OF PREMISES.

SCALE.—One inch, 25 feet; one-fifth inch, 5 feet. Each square represents 25 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; O.B., catch-basin; M, manure receptacle.



## MONMOUTH COUNTY—Continued.

## RECORD OF SANITARY INSPECTION.

No. ...., Third avenue.  
 Owner..... Address—Asbury Park.  
 Agent.....

*Site of House.*

1. Size of lot—50 feet x 150 feet. Area of lot—7,500 square feet. Area covered by buildings—About 2,500 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 9 feet.
5. Height of buildings on adjoining lots—Two stories on west, 3 feet distance; two and a half stories on east, about 15 feet distance.
6. Yard—Contains bakery, stable-manure receptacle and privy.
7. Privy-vault: size—32 inches x 32 inches; distance from privy-vault to dwelling, 75 feet; distance from privy-vault to well, about 40 feet; construction of privy-vault, brick and cement. Vault has no connection with the sewer.
8. Catch-basin: size—16 inches by 16 inches x 4 1/2 inches; size of grating, 16 inches x 20 inches; how covered, flagging stone and iron; is ventilation adequate?—Yes. (See note).
9. Cesspool: size, construction, location and ventilation—None.
10. Water-supply—Well and public water-works; analysis of well water, August 13th, 1891.
11. Stable—Yes; number of stalls, two; how floored, boards; disposal of fluid excrement, on ground; storage of solid excrement, manure receptacle; manure receptacle, cement basin enclosed by boards; size, 4 x 7 x 5 feet; cover, none.
12. Chickens kept on premises—No. (See note.)
13. Garbage: how stored? Covered metal can.

*House.*

14. House erected—1878.
15. House used for boarders? No. For other business? Yes; bakery.
16. House faces—North; sun exposure, unobstructed.
17. Number of sleeping rooms—Seven.
18. Rooms without windows—None.
19. Heating—Furnace. Has furnace an air-tight fresh-air box? Wooden box.
20. Lighting—Kerosene and electricity.
21. Number of stories high—Two and a half.
22. Material of construction—Wood. Sheathed and covered with building paper? No.
23. Fire escape—None.
24. Roof—Shingles.
25. Back dwelling on lot—No.

## MONMOUTH COUNTY—Continued.

26. Foundation: thickness..... Damp? No. Cause.....  
 27. Cellar; how floored—Cement. Under all of house? No. Outside entrance? No. Number and size of windows, three 24 inches x 18 inches. Is cellar dry or damp? Dry. Is ground-water level below cellar bottom? Yes. Is cellar well ventilated? Yes.

*Plumbing.*

28. Water-closets: number—Two; located, one on first and one on second floor; style, washout and hopper, flushed from cisterns; condition, good. (See note.) Windows in water-closet apartment—Yes. Is apartment used for sleeping-room? No.  
 29. House drain: material—Tile. (See note.) Size, 4 inches; fall, ample.  
 30. Trap on main drain—Yes.  
 31. Inlet for fresh air—No. (See note.)  
 32. Are all fixtures trapped—No. (See note.) Traps vented?.....  
 33. Premises connected with street sewer? Yes.

*Vital Statistics.*

34. Population of house—Private family.  
 35. Number of families—One.  
 36. Diseases reported during past year.....  
 37. Diseases reported during past ten years—Measles, January, 1885; diphtheria, December 14th, 1894.  
 38. Deaths during past year.....  
 39. Deaths during past ten years—One, December 20th, 1894.

August 15th, 1894.

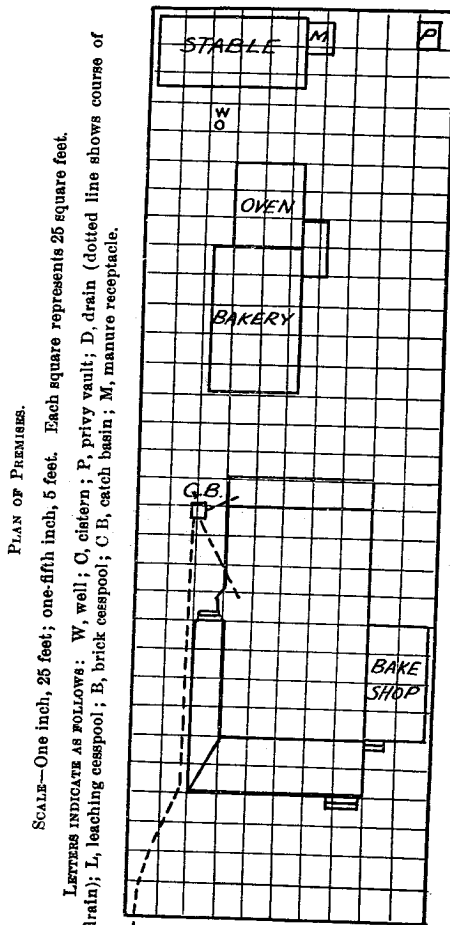
C. E. F. HETRICK,  
*Inspector.*

8. New catch-basin constructed.  
 12. Chickens kept on premises.  
 28. Water-closets introduced into dwelling.  
 29. New iron drain laid.  
 31. Fresh-air inlet placed on drain.  
 32. All fixtures trapped and traps vented.

October 26th, 1898.

D. C. BOWEN,  
*Inspector.*

## MONMOUTH COUNTY—Continued.



MONMOUTH COUNTY—Continued.

The high standard of the quality of the water furnished to consumers by the city has been maintained by the water department during the past year, and the supply has at all times been equal to the demand.

The supply is derived entirely from artesian wells ranging from six to eleven hundred feet in depth. The water is raised from the wells by the air-lift into a receiving-basin where the iron which is held in solution by the water is precipitated, and the water is then passed from the receiving-basin through filters into a standpipe.

There are now but 13 dwellings in Asbury Park which are not supplied with water from the public water-works.

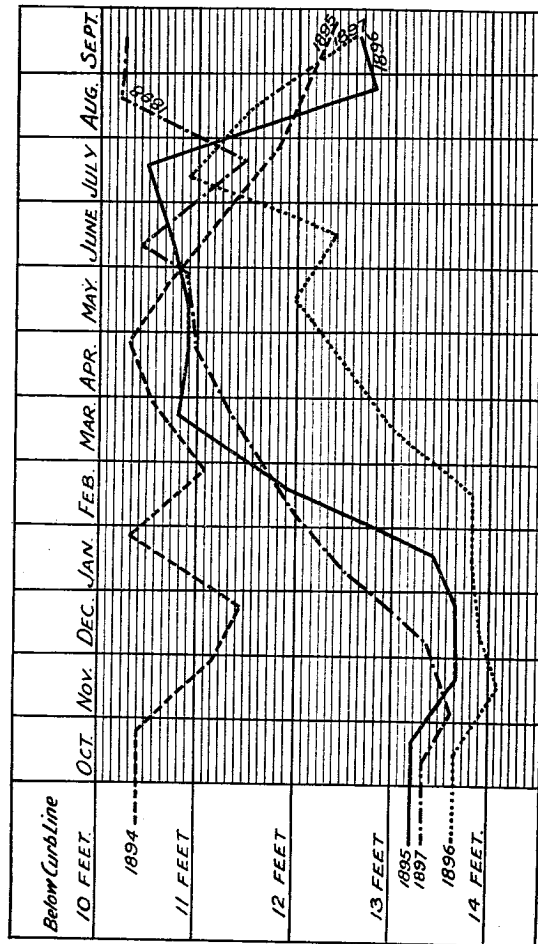
The following table shows the number and character of domestic wells which are still on premises in this city. Not all of these wells are in use, in fact, the greater number of them are not in use, but they have been allowed by the owners to remain on the premises. All of these surface wells are regarded with suspicion, and they are shown on the sanitary maps in the office of this board. The private wells in the city number as follows :

Surface (or shallow) wells .....	96
Artesian (or deep) wells.....	4
Wells on premises having no other water-supply.....	13
Wells in public grounds.....	8
<b>Total.....</b>	<b>121</b>

The relation which a saturated soil beneath and about dwellings bears to health was appreciated by this board in its early history and observations of the rise and fall of ground-water in the soil underlying the site of Asbury Park were begun soon after the establishment of the board of health. To more fully study the fluctuations of the ground water levels, 13 observation tubes were sunk in different parts of the city in 1894, since which time regular monthly readings of the rise and fall of the water in the soil have been made and recorded on charts in the health office.

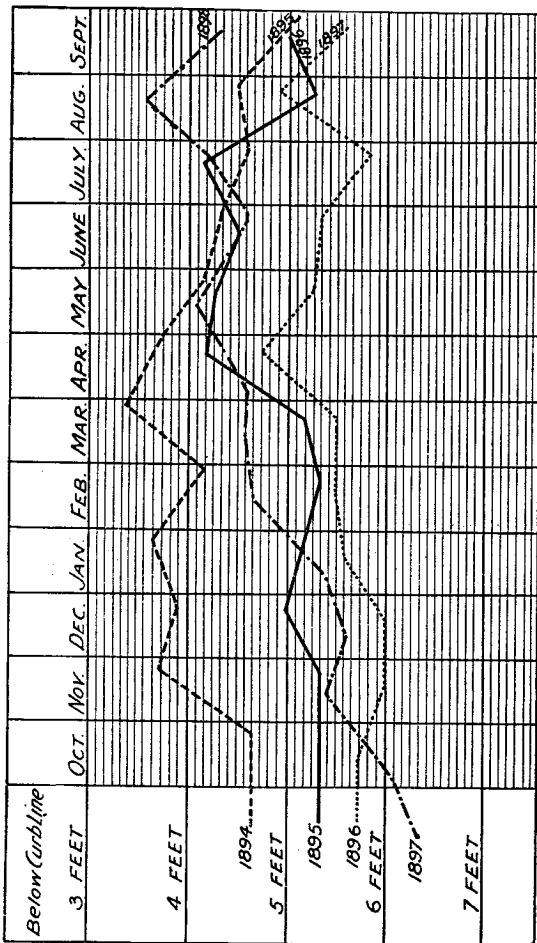
The following diagrams show the measurements of the water-levels in two of these tubes—the one showing the highest and the other the lowest levels :

MONMOUTH COUNTY—Continued.



STATION No. 12. LOCATION, BOND STREET AND ASBURY AVENUE.

MONMOUTH COUNTY—Continued.



STATION No. 5. ASBURY AVENUE AND HICK STREET

MONMOUTH COUNTY—Continued.

ICE.

Both natural and artificial ice have been furnished by dealers in Asbury Park during the past year. The artificial ice is manufactured by a local company and the natural ice is harvested on Lake Hopatcong.

The following reports of analyses show the comparative purity of the ice from these two sources:

	Parts per 100,000	
	Artificial Ice.	Natural Ice.
Total solids.....	1.500	2.500
Loss on ignition.....	0.500	1.000
Inorganic solids.....	1.000	1.500
Chlorine.....	0.200	0.300
Free ammonia.....	0.002	0.003
Albuminoid ammonia.....	0.002	0.003

Attempts are made at times by unscrupulous dealers to deliver ice in Asbury Park which has been harvested on polluted waters, and were it not for the efforts made by this board in enforcing the law in this city relating to the cutting and sale of ice, large quantities of this polluted ice would be supplied to unsuspecting consumers and to a certain class of economical boarding-house keepers who are indifferent to the quality of the ice or water which they supply to their patrons if only the price be low.

An ice company having a permit to sell artificial and also Lake Hopatcong ice in Asbury Park was found in July last to be delivering ice of another quality and for which they had no permit and investigation showed that the ice being sold by them had been harvested on a small pond on the borders of Shark river. This pond showed numerous sources of pollution from the dwellings, stables and hog-pens situated on its borders. When questioned, the dealers in this ice claimed that the ice from the pond referred to had been analyzed at the instigation of the State board of health and pronounced by them to be fit for domestic uses.

The following inquiry was addressed to the secretary of the State board of health:

BOARD OF HEALTH,  
646 MATTISON AVENUE.  
ASBURY PARK, N. J., July 6th, 1898. }

Dr. Henry Mitchell, Secretary State Board of Health:

DEAR SIR—This board has refused to permit the sale in Asbury Park of the ice which was harvested on Heroy's pond, in West Belmar, bordering on Shark

## MONMOUTH COUNTY—Continued.

river, on the ground that the ice is unfit for domestic use because of the visible sources of pollution which surround said pond. Matthews and Van Deuesen, ice dealers, who attempted to sell ice from said pond in this city, have assured me that Heroy (owner of the ice pond) claims to have received a certificate from the State board of health, or its chemist, setting forth that the analysis of a sample of ice claimed to have come from said pond shows that the ice is pure and fit for domestic use.

Judging from a physical examination of the surroundings of said pond it would seem utterly impossible that ice taken therefrom could be wholesome, and I therefore make inquiry to learn if there is any foundation for the statement which, it is claimed, Heroy is making.

Yours very respectfully,

D. C. BOWEN, *Sec'y.*

A reply to this letter assured us that the State board of health had made no examination of the ice in question, and had no knowledge of the matter whatever.

During the past year the camera has been employed to assist in making records of inspections, and a few photographs are used in this report to show the character of work done. The developing, printing and mounting is done in the health office. The accompanying cut shows the platform in front of ice-house, with sources of pollution. A hotel about 100 feet distant is seen on the opposite shore of the pond. Excreta from two privy buildings in yard flows down the bank into pond.

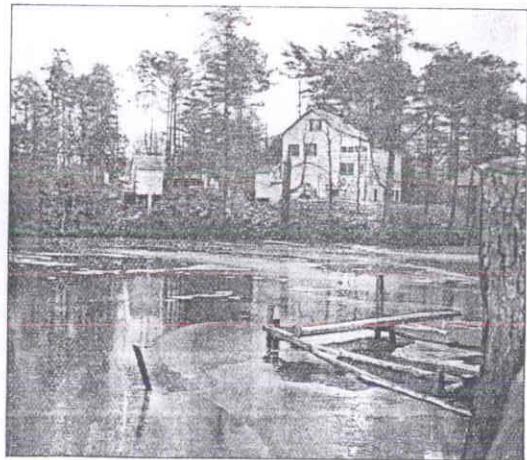
The efforts to protect the public against the use of contaminated and adulterated milk have been continued during the year, and in order to correct the defects found to exist in our ordinances relating to the sale of milk, the following milk-ordinance has been adopted and enforced, under authority given by chapter 183, laws of 1898:

AN ORDINANCE RELATING TO AND REGULATING THE SALE OF MILK IN THE CITY  
OF ASBURY PARK, NEW JERSEY.

1. Be it ordained by the board of health of the city of Asbury Park that any person or persons engaged in the sale of milk in the city of Asbury Park, in the county of Monmouth, State of New Jersey, shall furnish forthwith, when requested so to do by said board of health, or any inspector or officer thereof, a true statement, in writing upon blanks to be supplied by said board of health, setting forth 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 persons or customers to whom such persons selling said milk in said city shall supply or deliver the same.

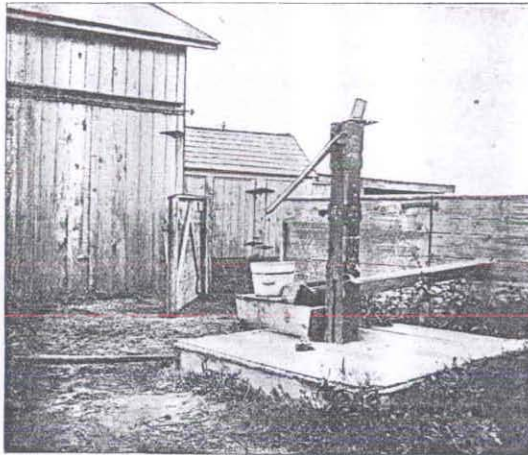


Pollution of Ice Pond from Rubbish Dump.



Direct Ice Pollution.

## MONMOUTH COUNTY—Continued.



A Dairy Well.

2. Be it further ordained, that such statements in writing shall be signed by the person selling such milk in said city to whom the same shall be tendered.
3. Be it further ordained, that it shall be the duty of every person engaged in selling milk in said city to notify, in writing, said board of health immediately upon changing the source of supply of said milk of such change, and such notice shall also state the name or names of persons supplying said milk and the locality from which the same is procured.
4. Be it further ordained, that no person shall sell or deliver, or have in possession for sale, in the city of Asbury Park any milk which has been watered or adulterated, or which contains any unhealthful ingredient, constituent or substance, or which has been transported or stored in an unclean manner, or which is produced from cows which are kept or stabled under unhealthful conditions or which may be diseased.
5. Be it ordained, that any person or persons who shall violate any of the provisions of this ordinance shall be subject and liable to a fine of \$50.
6. Be it ordained, that this ordinance shall take effect immediately.

Adopted June 16th, 1898.

D. C. BOWEN,  
*Secretary.*

NELSON E. BUCHANAN,  
*President.*

While the supervision which local boards of health are now by statute empowered to exercise over the production and sale of milk undoubtedly tends to improve the quality and purity of this important article of food, yet many difficulties are encountered in the guarding of the milk-supply in a town in which the population fluctuates as it does in Asbury Park, and it would seem that still further safeguard must be provided by the legislature before a pure milk-supply can be assured.

Inspection of the dairies on which milk is produced shows that many such premises are supplied with water for washing cans and utensils from polluted wells, and the methods of milking and the subsequent handling of the milk are too frequently found to be unhygienic to say the least.

Water from this well furnishes the only supply for watering stock, washing utensils, and for all domestic purposes on a dairy farm from which milk has heretofore been regularly sent to the city. The well is located about six feet from the cow-yard, where a large herd of animals stand for several hours every day.

None of the milk sold in Asbury Park is produced in the city, and inasmuch as a local board of health has no jurisdiction beyond the

MONMOUTH COUNTY—Continued.

limits of its own sanitary district we are obliged to call upon the State board of health for information concerning the sanitary conditions which exists upon the dairy premises which furnish milk to Asbury Park. The following table shows the localities from which milk has been shipped for sale in this city during the past summer :

LOCALITY IN WHICH MILK IS PRODUCED.	NAME OF SHIPPER.	NAME OF DEALER RECEIVING SUPPLY.	NO OF QUARTS REC'D DAILY.
Wrightstown, Burlington Co.	George R. Brown	A. J. Atkinson	160
" " "	Jacob S. Humann	Charles T. Sickles	40
Columbus, " "	Thomas S. Gibbs	Edward Brower	320
" " "	T. B. Adsonson	Alva Truax	80
Julistown, " "	V. N. Thompson	C. V. Hurley	120
" " "	B. B. Cox	Chas. T. Sickles	60
Pemberton, " "	Pemberton Creamery	Edward Brower	
" " "	" " "	C. V. Hurley	80
Windsor, Mercer Co.	A. E. Hutchinson	Edward Brower	180
" " "	" " "	" " "	40
Hightstown, " "	J. M. Davison	Clayton & Son	70
" " "	C. H. Dey	W. R. Sickles	60
" " "	Theodore Hermance	H. S. Wilson	60
Trenton, Freehold, Monmouth Co.	Thomas B. DeCoe & Co.	H. Truax & Son	250
" " "	A. S. Lamberson	Edward Brower	180
" " "	Chas. S. Sickles	Alva Truax	140
" " "	James Wykoff	E. T. Wykoff	80
" " "	W. E. Sickles	Chas. T. Sickles	40
Creamridge, " "	T. S. Chamberlain	Edward Brower	40
" " "	Jessie Gilbert	E. T. Wykoff	100
" " "	W. H. Davis	Edward Brower	100
" " "	George Ivens	Chas. T. Sickles	120
" " "	C. B. Mires	Alva Truax	150
" " "	R. T. Ridgway	H. S. Wilson	200
" " "	John Eldridge	E. T. Wykoff	50
Deal Beach, " "	W. H. Brower	Edward Brower	120
" " "	W. L. Robinson	W. L. Robinson	100
" " "	Geo. T. Robbins	Carret Robbins.	30
" " "	J. King	W. R. Sickles	200
" " "	W. S. Hunt	H. Truax & Son	175
" " "	Henry Truax	Edward Brower	80
Ellasdale, Hamilton, " "	C. S. Bird	Clayton & Son	75
" " "	Munroe Shafro	E. L. Shafro	25
" " "	Chas. P. Stout	" " "	25
" " "	J. Hunter	" " "	25
" " "	Tapper	" " "	70
" " "	Milton Tilton	Edward L. Tilton	70
" " "	Amos Tilton	J. E. Tilton	70
" " "	T. G. Sculthort	" " "	40
" " "	J. E. Tilton	" " "	80
" " "	Alan L. Smock	Eastwood White	35
" " "	Mary Jane Fletcher	Mary Jane Fletcher	40
" " "	Britten Renuo White	Eastwood White	70
Nelsonville, " "	James Murphy	Clayton & Son	80
" " "	C. Hunsinger	Alva Truax	170
Glendola, " "	C. V. & D. L. Hurley	C. V. Hurley	50
" " "	James V. Martin	James V. Martin	100
" " "	D. L. Pyle	E. L. Tilton	80
" " "	E. L. Tilton	" " "	80
" " "	I. M. Tilton	J. M.	125
Howell, " "	D. P. Pittenger	C. V. Hurley	60
" " "	Holmes Wilson	Wm. Pothemus	60
" " "	E. Vanvervoer	Elwood Rogers	60
" " "	Chas. Croxon	E. L. Tilton	40
" " "	W. B. Vanderveer	Eastwood White	100
Davis, " "	Robert Johnson	C. V. Hurley	80
" " "	F. Hendrickson	" " "	80

MONMOUTH COUNTY—Continued.

LOCALITY IN WHICH MILK IS PRODUCED.	NAME OF SHIPPER.	NAME OF DEALER RECEIVING SUPPLY.	NO. OF QUARTS REC'D DAILY.
Davis, Monmouth Co.	Frank W. Potter	J. W. Marrener	60
" " "	Alva Truax	Alva Truax	120
" " "	Jacob Fisher	H. S. Wilson	120
Allentown, " "	C. H. Nacross	C. V. Hurley	80
" " "	Clarence Tilton	Wm. Palhemus	80
" " "	A. A. Taylor	W. L. Robinson	280
" " "	" " "	Frank Sutphen	40
" " "	" " "	Chas. T. Sickles	80
Farmingdale, " "	J. C. Winsor	Wm. Palhemus	70
" " "	Elihu W. Williams	L. E. Shafro	40
Lower Squankum, Monmouth Co.	Wilson Farm	Gilman Farm	90
" " "	M. C. Denton	Gilman Farm	80
" " "	A. E. Jennings	" " "	25
Poplar, Monmouth Co.	David Potter	David Potter	115
New Bedford, Monmouth Co.	Henry C. Hance	Henry C. Hance	90
" " "	Wilson Rogers	Wilson Rogers	16
" " "	Thomas Doughubay	Elwood Rogers	20
" " "	I. I. Rogers	" " "	20
New Egypt, " "	A. T. Rogers	A. T. Rogers	40
" " "	Jacob Fisher	Elwood Rogefs	100
" " "	J. M. Burtis	Chas. T. Sickles	60
" " "	J. S. Jobes	H. S. Wilson	100
" " "	Alex. Harding	" " "	100
Allenwood, " "	Elwood Rogers	Elwood Rogers	50
" " "	John Holloway	" " "	30
Dupont, " "	Wm. E. Dennis	L. E. Shafro	30
Tinton Falls, " "	J. H. Leferson	W. R. Sickles	110
" " "	Thomas Johnson	" " "	50
" " "	L. F. Carr	" " "	30
Imlaystown, " "	A. M. King	J. E. Tilton	40
Wayside, " "	Jonathan Youmans	Eastwood White	40
Oakhurst, " "	Jonathan Youmans	Jonathan Youmans	120
Caldwell, Essex Co.	Fairfield Dairy Co.	Fairfield Dairy Co.	40
Shrewsbury Road	Lawrence Tilton	C. V. Hurley	40
Lakewood, Ocean Co.	J. G. Matthews	Wm. E. Matthews	40
Cranbury, " "	Middlesex Dairy Co.	" " "	40
Jersey City, Hudson Co.	Borden's N. Y. Con. Milk Co	E. T. Mitchell	40
Monmouth Junction, Middlesex Co.	H. B. Hensley	Frank Sutphen	100
Plainboro, Middlesex Co.	Walker-Gorden Co.	H. S. Wilson	40

The quantity of milk used in Asbury Park during the summer months varies so much from week to week that the column showing quantity shipped from each place does not represent the average daily amount received. It only shows the amounts being received by the dealer, from each place, on the day on which he furnished the information to the board of health.

Three quarters of the entire amount of milk consumed in Asbury Park is brought here by train. The remainder is produced near by and brought to the city by the dealers in wagons.

All of the milk which is shipped to Asbury Park by train, except that coming from the Fairfield Dairy Company, is received in cans. A portion of this milk is bottled by the dealers after it is received here.

A portion of the milk from the near-by dairies is bottled before leaving the dairy. None of the milk-depots in this vicinity have any facilities for sterilizing bottles and utensils, and the only cleansing which the bottles receive before filling is a superficial washing with lukewarm water and a dirty brush. This is followed by rinsing in a vessel partly filled with milky water. The bottles are then set aside, often without draining, to be refilled.



## MONMOUTH COUNTY—Continued.

This method of bottle-washing is in practice on most of our near-by dairies, and it is highly probable that the consumer who takes milk dipped from the can receives a cleaner supply than those who purchase it in bottles. This is surely true in cases where the milk has been bottled on dairy-farms or depot premises which are supplied with impure water, and where no facilities are provided for cleansing and sterilizing the bottles.

During the past summer the board of health learned that the use of preservatives in milk was being generally resorted to by milk-dealers.

Milk was found to keep without souring at ordinary room temperature from two or three days to a week.

Investigation showed that the substance in general use by the milkmen as a milk preservative was formaldehyde.

Twenty-five samples of milk were taken from as many different dealers on August 24th and sent to the chemist of the State Dairy Commissioner for examination. Out of these 25 samples 17 were found to contain formaldehyde. As a result of these investigations a number of suits were instituted by Mr. George W. McGuire, State Dairy Commissioner, against the offending parties.

Following is a copy of a letter which was mailed to all physicians practicing in this sanitary district:

BOARD OF HEALTH,  
646 Mattison avenue,  
ASBURY PARK, N. J., Sept. 3d, 1898. }

Milk, danger of adding  
formaldehyde to.

....., M. D.,

DEAR DOCTOR—The practice of employing formaldehyde, under the name of "Milk Preservative," for the purpose of improving the keeping qualities of milk, has recently been found to be almost universal among the milk-dealers throughout the State. In Asbury Park twenty-five samples of milk were taken August 24th, and seventeen of these were found, by chemical examination, to contain formaldehyde. The known property, possessed by formaldehyde, of retarding or wholly preventing the coagulation of milk in the stomachs of invalids and children, as well as in the open air, and the consequent indigestibility of the milk to which this substance has been added, renders the milk almost if not entirely innutritious.

## MONMOUTH COUNTY—Continued.

The investigations concerning the extent to which formaldehyde is being used by milkmen are still progressing, and we desire to add any facts which are obtainable relative to the injurious effects of the milk which has been treated with this substance. *Will you, therefore, kindly observe the effects of milk now on the market upon the infants and other patients under your professional care, who are depending mainly upon milk as an article of diet.*

It would add much to the value of the final report upon this subject if we can supplement the chemical work with clinical observations, and we would be under much obligation if you will place in our hands any facts which may come to your notice relating to this matter.

Very respectfully,  
D. C. BOWEN, Secretary.

## GARBAGE AND RUBBISH.

In October, 1897, by request of the common council, a special report was made by the board of health upon the collection and disposal of garbage and town-refuse. This report was given in full in our annual report for 1897. We desire to restate here the recommendations contained in said report. They were as follows:

"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 of garbage and rubbish shall be done by contract. The contractor to furnish the necessary labor and horses, but to use vehicles which are provided by the city."

The report of the board of health was referred by council to a committee, who rendered a report and made recommendations which were subsequently adopted by the council, approving of the propositions above set forth.

The suggestions contained in the reports above referred to were accepted by the council, and an appropriation of \$800 was made for the purchase of garbage-carts. An additional sum of \$400 was subsequently appropriated for the purchase of three rubbish-carts and for cart harness.

Bids were advertised for under the above specifications, and inasmuch as there was not sufficient time before the new contract went

## MONMOUTH COUNTY—Continued.

into effect to secure modern garbage and rubbish vehicles, the contractor was obliged to continue the use of the old style vehicles until such time as the city could secure the new ones.

Two styles of iron garbage-carts were sent to Asbury Park by manufacturers for examination and trial. These carts, while found in general construction to be suitably adapted for the purpose for which they were designed, were not wholly suited for our uses.

A study of our local conditions, particularly of the roads and grades over which the garbage must be hauled, led to the ordering of seven vehicles especially constructed to meet our requirements, from Thomas Hill's Dump-Cart Works, in Jersey City.

The bodies of the carts are made of twelve-gage sheet steel, riveted together and made water-tight. There are no square corners in these bodies, the lower front portion of the body being rounded, and the rear of the body tapering up to the top of the rear end of the cart.

The bodies have a capacity of 36 cubic feet and the load is discharged by dumping, which is the work of but a minute, and the adjustment is so nice that it can be performed with very little effort.

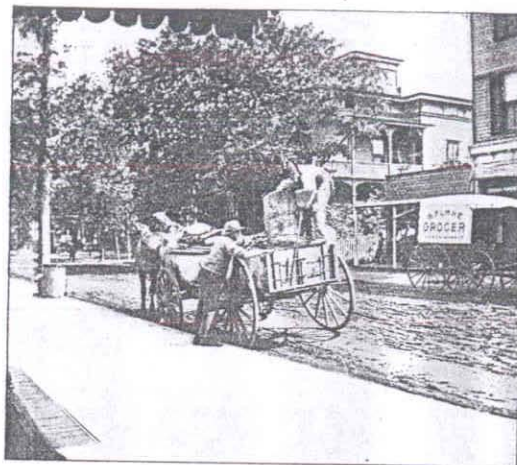
The bodies are mounted on a bent axle, without springs, and the distance from the top of the body to the ground measures 53½ inches.

The carts have 54 inch wheels, with 4 inch tread, and are nicely balanced. The average weight of the carts is 943 pounds.

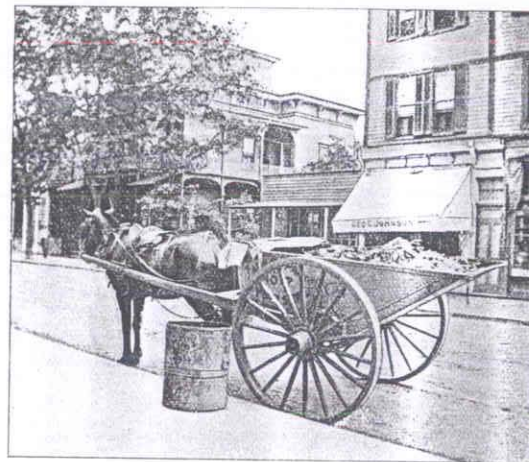
It is found by experiments with one of these vehicles that the average weight upon the horse's back when harnessed to an empty cart is 55 pounds.

This same cart loaded with garbage, gross weight 2,610 pounds, was found to place a weight of but 45 pounds upon the back of the horse, and when a driver, weighing 128 pounds, occupied the seat on the front of the cart there was found to be 70 pounds' weight on the horse's back. The driver on the seat of the cart increased the weight on the horse's back 25 pounds.

The carts have been fitted with 10-ounce canvas covers. The covers are laced to the seat, which is detachable from the body of the cart, and while the cart is being loaded the cover is folded on the seat at the front of the body. When the cart is loaded the cover is pulled down and tied, by means of short lanyards, to rings attached to the body of the cart.



One of the Old-Style Garbage Wagons, 1896.



New Iron Garbage Cart, 1898.

MONMOUTH COUNTY—*Continued.*

These covers are taken off at stated intervals and made clean by washing with soap and hot water.

The body of the carts being constructed entirely of metal and without corners or crevices in which organic matter can find lodgment, they are easily kept clean and odorless by daily washing with a hose.

The advantages gained by replacing the old style wagons with iron carts are :

1. They are clean in appearance and have removed from our streets the unsightly and always offensive wooden-bodied wagons.
2. The bodies of the carts being smaller than those of the wagons, they are more quickly loaded and removed, thereby avoiding the objectionable feature of containing so large a bulk of garbage before completing a load in the streets.
3. A saving of twenty-five minutes' time is effected in unloading each load. A gain which the contractor is quick to realize and appreciate.

That the citizens value the introduction of the new carts has been shown during the past summer, when at times it was found necessary to use a few of the old wagons in order to remove all of the garbage, for numerous requests were received asking that the wagons should be withdrawn and that the carts only should be used.

The vehicles which have been especially designed (also constructed by Thomas Hill, Jersey City,) for use in the collection and removal of rubbish in Asbury Park, have two wheels and large bodies set near to the ground by means of bent axles.

They have 54-inch wheels with 4-inch tread and the top of the body stands 61 inches from the ground, while the rear of the bottom of the body is 15 inches from the ground.

Rubbish is thrown into the carts over the top of the sides of the body, and when loaded a canvas cover is spread over the load and snugly tied down to prevent the light material from blowing off.

The cart is provided at the rear with two hinged doors which, when open, permit the quick discharge of the load from the rear.

These carts weigh 960 pounds, 40 pounds of the weight being supported from the saddle on the horse's back. Frequent trials have shown that, when judgment is used by the driver of the cart in loading, the cart is so evenly balanced that when loaded not more than four or five pounds of the gross weight rests on the horse's back.

MONMOUTH COUNTY—Continued.

The additional weight which is placed on the back of the horse by a driver weighing 128 pounds occupying the seat at the front of the cart is found to be 30 pounds.

The inside dimensions of the body are as follows: Length, 91½ inches; width, 50½ inches; depth, 40 inches; giving a capacity of 107.78 cubic feet, or 3.99 cubic yards.

The average weight of Asbury Park rubbish is found to be 300 pounds per cubic yard. The material varies in weight under different conditions (wet or dry) and from different parts of the city (resident or business section).

The garbage and rubbish carts, having broad tires, tend to improve rather than injure the roads over which they travel.

The accompanying cuts show some of the different styles of vehicles which have, from time to time, been used in the collection and removal of rubbish in Asbury Park.

By the terms of the specifications the contractor is obliged to pay 15 per cent. per annum on the cost of the vehicles furnished by the city and to keep the same well painted and in good repair.

The present contract for the removal of garbage, dead animals and rubbish went into effect October 15th, 1898, under the supervision of this board.

The contract price for the present year for the collection, removal and disposal of garbage, dead animals and rubbish is \$3,300.00. The price paid for the same work last year was \$3,600.00.

The contractor is obliged to call at the health office daily to receive complaints and also to furnish daily reports pertaining to the service, which reports are made on the following blanks:

BOARD OF HEALTH OF ASBURY PARK, N. J.

Form 59.

PUBLIC GARBAGE SERVICE REPORT.

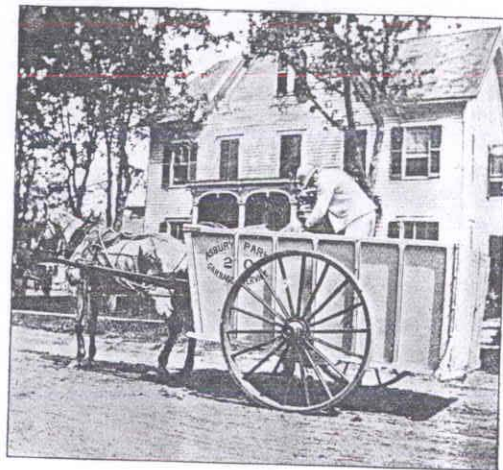
To the Board of Health of Asbury Park, N. J.:

I have this day failed to remove the garbage from the premises No.....  
 .....  
 for the following reasons:.....  
 .....  
 ....., Contractor.

..... 18.....



Old-Style Rubbish Van, 1897.



New Rubbish Cart, 1898.

MONMOUTH COUNTY—Continued.

BOARD OF HEALTH OF ASBURY PARK, N. J.

Form 60.

PUBLIC GARBAGE SERVICE REPORT.

To the Board of Health of Asbury Park, N. J.:

The following information relating to the work performed in the Public Garbage Service, on .....1898, is herewith submitted.  
[Day and month.]

- Number of loads of garbage removed.....
- Number of wagons employed.....
- Number of carts employed.....
- Number of men employed in removal of garbage.....
- Number of loads of rubbish removed.....
- Number of rubbish carts employed.....
- Number of men employed in removal of rubbish.....

Contractor.

REMARKS:

Citizens' complaints of neglect on the part of the contractor are received on the following blank, and, if upon inspection the complaint is proved to be well founded, it is referred to the contractor at the time of his daily visit to the health office:

BOARD OF HEALTH OF ASBURY PARK, N. J.

Form 63.

COMPLAINT RELATING TO PUBLIC GARBAGE SERVICE.

- Day and hour when complaint was received.....
- Nature of complaint.....
- Location.....
- Name of complainant.....
- Report of inspection.....

Inspector.

During the fifteen weeks from June 15th to October 1st, sixty six complaints from citizens of neglect on the part of the garbage-contractor were received. Investigation showed that in a considerable number of these sixty-six cases there was no reasonable cause for complaint. The complaint was in many cases due to the lack of a sufficient number of receptacles on the premises to hold the garbage which accumulated from day to day. Information relating to the service was

## MONMOUTH COUNTY—Continued.

furnished to householders by distributing from house to house the following cards:

Form 61.

THE BOARD OF HEALTH OF THE CITY OF ASBURY PARK, N. J.

INFORMATION RELATING TO THE STORAGE, COLLECTION AND REMOVAL OF REFUSE.

*Garbage* must be stored in galvanized metallic receptacles, not exceeding twenty (20) gallons in capacity, and the receptacles must have metallic covers.

*Garbage* must be kept separated from rubbish and ashes.

*Fluids* must not be placed in the garbage receptacles.

*The contents* of garbage receptacles cannot be removed if frozen.

*Garbage* will be collected daily from June to October, and three times in each week from October to June.

*Dead animals*, except horses, will be removed daily upon notice to the board of health.

*Rubbish* must be kept separated from garbage and ashes. It should be stored in barrels, boxes or other receptacles which can be conveniently carried to the carts.

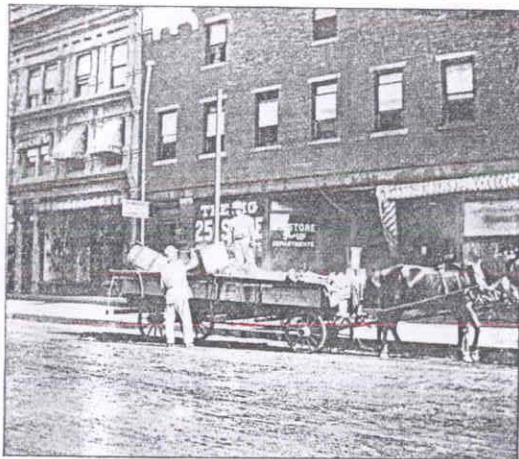
*Rubbish* which is contained in suitable receptacles, when placed on sidewalk near the curb, will be removed daily from all parts of the city south of Summerfield avenue, and from all other parts of the city rubbish will be removed daily, except from October 1st to June 1st, when it will be removed three (3) times in each week, viz., on Tuesday, Thursday and Saturday.

The collection and removal of garbage, dead animals and rubbish is performed by contract under the supervision of the board of health, and all complaints relating to this service should be made at the office of the board, No. 646 Mattison avenue. Written complaints are preferable.

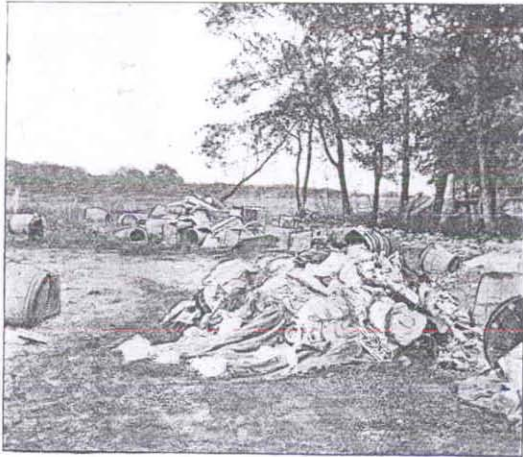
Inasmuch as the time at the disposal of the committee appointed by the common council for investigating and reporting upon a suitable site for the erection of a garbage disposal plant was too short to have the work accomplished for use during the season of 1898, no change from the former method of disposal has thus far been made.

The present place of disposal of the bulk of the garbage, and all of the rubbish, from Asbury Park since June 15th, 1898, to the present date, is on a farm two miles distant from the city limits.

Practically all of the garbage has been fed to hogs. When the quantity of garbage gathered was greater than could be consumed by the five or six hundred hogs which fed upon it, the surplus was disposed of by spreading upon the land and ploughing under. Rubbish was used for filling low lands and for road-making on the disposal farm. It is needless to say that the use of rubbish as a road material proved a



Rubbish Wagon, 1897.



Articles of Value Culled from the Rubbish Dump.



Rubbish Dump, showing Italian Girl Engaged in Her Dally Occupation of Culling Rubbish.



Rubbish Dump, showing Berry Boxes Sorted Out for Refilling with Berries.



## MONMOUTH COUNTY—Continued.

failure, and that the filling of low lands with the stuff creates a nuisance.

The present methods of disposal of these waste-products are far from hygienic, and can only be tolerated because they are conducted in an isolated spot remote from habitations.

The following tables show the daily amount of garbage and rubbish collected and removed from June 15th to October 1st, inclusive.



Method of Unloading Old-Style Garbage Carts.

## GARBAGE.

DATES.	WAGONS.		CARTS.		Total Amount in C. Y.
	No. of Loads.	Cubic Yards.	No. of Loads.	Cubic Yards.	
June 15.....	8	14.51			
" 16.....	4	7.26			
" 17.....	5	9.74			
" 18.....	4½	8.18			
					39.69
" 20.....	8	14.51			
" 21.....	4	7.26			
" 22.....	5	9.74			
" 23.....	5	9.74			
" 24.....	5	9.74			
" 25.....	5	9.74			
					50.81
" 27.....	8	14.51			
" 28.....	5	9.74			
" 29.....	5	9.74			
" 30.....	4	7.26			
July 1.....	5	9.74			
" 2.....	6	10.09			
					60.08
" 4.....	15	27.22			
" 5.....	15	27.22			
" 6.....	5	9.74			
" 7.....	7	12.59			
" 8.....	7	12.59			
" 9.....	10	18.15			
					107.51
" 11.....	12	21.77			
" 12.....	8	14.15			
" 13.....	8	14.15			
" 14.....	6	10.09			
" 15.....	8	14.15			
" 16.....	10	18.15			
					92.46

## MONMOUTH COUNTY—Continued.

DATES.	WAGONS.		CARTS.		Total Amount in C. Y.
	No. of Loads.	Cubic Yards.	No. of Loads.	Cubic Yards.	
July 18.....	16	29.03			
" 19.....	10	18.15			
" 20.....	10	18.15			
" 21.....	10	18.15			
" 22.....	10	18.15			
" 23.....	14	25.40			
					127.03
" 25.....	22	39.92			
" 26.....	12	21.77			
" 27.....	11	19.96			
" 28.....	5	8.70	16	14.07	22.77
" 29.....	5	8.70	14	12.96	21.66
" 30.....	4	6.96	23	21.29	28.25
		106.01		48.22=	154.23
August 1.....	9	14.66	32	29.62	44.28
" 2.....	4	6.96	23	21.29	28.25
" 3.....	4	6.96	18	16.66	23.62
" 4.....	4	6.96	20	18.51	25.47
" 5.....	6	10.44	23	21.29	31.73
" 6.....	8	12.44	25	23.14	35.58
		58.42		130.51=	188.93
" 8.....	12	20.88	33	30.55	51.43
" 9.....	8	12.44	25	23.14	35.58
" 10.....	8	12.44	21	19.44	31.88
" 11.....	8	12.44	24	22.22	34.66
" 12.....	9	14.16	20	18.51	32.67
" 13.....	13	22.62	29	26.85	49.47
		94.98		140.71=	235.69
" 15.....	20	34.81	30	27.77	66.58
" 16.....	10	17.77	20	18.51	36.28
" 17.....	10	17.77	17	15.77	33.54
" 18.....	10	17.77	20	18.51	36.28
" 19.....	11	15.44	23	21.29	36.73
" 20.....	16	27.84	19	17.59	45.43
		131.40		119.44=	250.84
August 22.....	19	33.07	31	28.70	61.77
" 23.....	9	14.16	18	16.66	30.82
" 24.....	9	14.16	25	23.14	37.30
" 25.....	9	14.16	22	20.36	34.52
" 26.....	8	12.44	25	23.14	35.58
" 27.....	12	20.88	25	23.14	54.02
		108.87		135.14=	244.01

## MONMOUTH COUNTY—Continued.

DATES.	WAGONS.		CARTS.		Total Amount in C. Y.
	No. of Loads.	Cubic Yards.	No. of Loads.	Cubic Yards.	
August 29.....	17	29.55	28	25.92	55.47
" 30.....	8	12.44	20	18.51	30.95
" 31.....	7	12.18	18	16.66	28.84
September 1.....	8	12.44	23	21.29	33.73
" 2.....	7	12.18	21	19.44	31.62
" 3.....	10	17.77	20	18.51	36.28
		96.56		120.33=	216.99
" 5.....	14	24.37	24	22.22	46.59
" 6.....	6	10.44	17	15.74	26.18
" 7.....	5	8.70	17	15.74	24.44
" 8.....	5	8.70	16	14.07	22.77
" 9.....	5	8.70	15	13.88	22.58
" 10.....	10	10.44	15	13.88	24.32
		71.35		95.53=	166.88
" 12.....	6	10.44	18	16.66	27.10
" 13.....	2	3.48	14	12.95	16.43
" 14.....	2	3.48	12	11.11	14.59
" 15.....	1	1.81	13	12.03	13.84
" 16.....	2	3.48	12	11.11	14.58
" 17.....			14	12.95	12.95
		22.69		76.81=	99.50
" 19.....	2	3.48	17	15.74	19.22
" 20.....			11	10.18	
" 21.....			10	9.25	
" 22.....			11	10.18	
" 23.....			11	10.18	
" 24.....			10	9.25	
		3.48		64.78=	68.26
" 26.....			16	18.51	
" 27.....			8	7.40	
" 28.....			9	8.33	
" 29.....			9	8.33	
" 30.....			9	8.33	
October 1.....			10	9.21	60.11

## MONMOUTH COUNTY—Continued.

## RUBBISH.

DATES.	WAGONS.		CARTS.		Total amount in C. Y.
	No. of Loads.	Cubic Yards.	No. of Loads.	Cubic Yards.	
June 15.....	7	70.7			232.3
" 16.....	3	30.3			
" 17.....	6	60.6			
" 18.....	7	70.7			
" 20.....	3	30.3			232.3
" 21.....	3	30.3			
" 22.....	3	30.3			
" 23.....	3	30.3			
" 24.....	6	60.6			
" 25.....	5	50.5			
" 27.....	3	30.3			242.4
" 28.....	4	40.4			
" 29.....	3	30.3			
" 30.....	3	30.3			
July 1.....	6	60.6			212.1
" 2.....	5	50.5			
" 4.....	1	10.1			
" 5.....	5	50.5			
" 6.....	3	30.3			
" 7.....	3	30.3			
" 8.....	5	50.5			
" 9.....	4	40.4			
" 11.....	4	40.4			
" 12.....	4	40.4			
" 13.....	2	20.2			
" 14.....	6	60.6			
" 15.....	7	70.7			
" 16.....	7	70.7			
" 18.....	4	40.4			242.4
" 19.....	4	40.4			
" 20.....	4	40.4			
" 21.....	4	40.4			
" 22.....	4	40.4			
" 23.....	4	40.4			
" 25.....	3	30.3			
" 26.....	3	30.3			
" 27.....	3	30.3			
" 28.....	4	40.4			
" 29.....	4	40.4			
" 30.....	7	70.7			

252.5

## MONMOUTH COUNTY—Continued.

DATES.	WAGONS.		CARTS.		Total Amount in C. Y.	
	No. of Loads.	Cubic Yards.	No. of Loads.	Cubic Yards.		
August 1.....	4	40.4			308.0	
" 2.....	4	40.4				
" 3.....	4	40.4				
" 4.....	6	60.6				
" 5.....	4	40.4				
" 6.....	8	80.8				
" 8.....	4	40.4				
" 9.....	4	40.4				
" 10.....	4	40.4				
" 11.....	4	40.4				
" 12.....	4	40.4				
" 13.....	9	90.9				
" 15.....	6	60.6				292.9
" 16.....	5	50.5				
" 17.....	4	40.4				
" 18.....	2	20.2	2	8		
" 19.....	1	10.1	9	36	48.8	
" 20.....	2	20.2	12	48		40.2
" 22.....		202.0		112 =	46.1	
" 23.....				44	68.2	
" 24.....				40	314.0	
" 25.....				44		
" 26.....				44		
" 27.....	2	20.2	12	48		
" 29.....			8	32		
" 30.....			10	40	276.2	
" 31.....			6	24		
September 1.....			9	36		
" 2.....	2	20.2	4	16	36.2	
" 3.....	4	40.4	7	28		68.4
" 5.....				176 =	236.6	
" 6.....	2	20.2	7	28		
" 7.....	1	10.1	8	32		
" 8.....			7	28		
" 9.....	2	20.2	8	32		
" 10.....	2	20.2	6	24		
" 7.....				28		48.2
" 8.....				32		
" 9.....				28		52.2
" 10.....				24		
" 7.....				172 =	242.7	

## MONMOUTH COUNTY—Continued.

DATES.	WAGONS.		CARTS.		Total Amount in C. Y.
	No. of Loads.	Cubic Yards.	No. of Loads.	Cubic Yards.	
September 12.....	3	30.3	3	12	42.3
" 13.....	3	30.3	4	16	46.3
" 14.....	3	30.3	4	16	46.3
" 15.....	2	20.2	3	12	42.3
" 16.....	3	30.3	5	20	50.3
" 17.....	3	30.3	6	24	54.3
		171.7		100 =	271.7
" 19.....			5	20	
" 20.....			6	24	
" 21.....			5	20	
" 22.....			6	24	
" 23.....			5	20	
" 24.....	3	30.3	3	12	42.3
		30.3		120 =	150.3
" 26.....			4	16	
" 27.....			5	20	
" 28.....			5	20	
" 29.....			5	20	
" 30.....	1	10.1	4	16	
October 1.....	3	30.3	4	16	46.3

It will be seen that the seven carts were inadequate to remove all garbage which accumulated, and owing to the small size and feeble condition of the animals furnished by the contractor, and the poor condition of part of the road over which the carts were hauled to the dump, the animals were often unable to draw a full load, and instead of  $1\frac{1}{2}$  cubic yards of garbage being taken at each cart-load, the average load did not exceed 1 cubic yard. This difficulty can and will be overcome by requiring in a new contract that horses or mules used in this service shall be of a stated weight, suited to the labor demanded.

It was found that when the seven garbage-carts were loaded in succession and started for the dump as fast as each load was obtained, the last cart was far on its way to the dumping-ground before the first cart had returned for a second load, thus wasting the time of the extra men employed for the purpose of quickly loading the carts.

## MONMOUTH COUNTY—Continued.

It will be seen from the foregoing tables that 7.26 cubic yards was the smallest and 66.58 cubic yards the largest amount of garbage gathered in any one day from June 15th to October 1st.

The largest daily amount, 66.58 cubic yards, was collected on Monday, August 15th. The largest amount collected in any one week was 250.84 cubic yards, from August 15th to the 21st inclusive.

In order that carts only (not wagons) should be used in the collection and transportation of the garbage, 12 carts would be required to do the work on the busiest day. This estimate is based on the assumption that each of the 12 carts took 5 full loads. But, owing to the distance to the dump and the unavoidable delays the carts cannot be depended upon to take 5 loads each day. This has been done under pressure during the past summer, but it is more than a fair day's work and not more than 4 loads per day can be reasonably demanded.

There were but 5 days when the amount of garbage to be removed exceeded 50 cubic yards, as follows:

Monday August 15th.....	66.58 cubic yds.
Monday " 22d.....	61.77 " "
Monday " 29th.....	55.47 " "
Saturday " 27th.....	54.02 " "
Monday " 8th.....	51.43 " "

On all but two of these days eleven carts would, excluding accidents and delays, have removed all of the garbage, if each cart carried four full loads each day. It is therefore shown to be necessary to add four more carts to the seven now owned by the city for the collection and transportation of garbage. There would then be but two or three days during the summer when it might be found necessary to use any of the wooden-bodied wagons in the work. One or two of such vehicles might be kept in readiness, at small expense, for use in case of accident to the carts, or other emergency.

The largest amount of rubbish which has been removed in any one day was 90.9 cubic yards, on Saturday, August 13th, and the smallest amount (July 4th excepted) was 16 cubic yards, on Monday, September 6th. The largest amount for any one week was 314 cubic yards, from August 15th to August 21st, inclusive. The daily amount removed during this week ranged from 60.6 to 68.2 cubic yards.

MONMOUTH COUNTY—Continued.

There were fourteen days during the summer when the daily amount of rubbish removed exceeded 60 cubic yards; six days when the amount exceeded 70 cubic yards; two days when it exceeded 80, and one day 90 cubic yards was exceeded.

The rubbish carts, owing to the fact that they do not dump, and that it takes longer to load them, cannot make as many trips each, to the dump as can the garbage carts. Three loads a day for each cart has been found to be an average day's work.

Based on the above calculations it will be necessary to add at least two more rubbish carts to the three which are now in use for the removal of rubbish.

The facts which have been gathered during the past season in relation to the amount of garbage and rubbish to be disposed of during the summer months will be of value for study in connection with the erection of a disposal plant for these waste products, as it will be seen that the amount of both garbage and rubbish varies greatly from day to day, and from week to week. It would therefore seem to be necessary that a plant suited to our needs should be so constructed that it could be used in sections, in accordance with the amount of material to be disposed of each day.

Table showing number of days, from June 15th to October 18th, 1898, on which stated amounts of garbage and rubbish were collected and disposed of:

NUMBER OF DAYS ON WHICH THE AMOUNT RANGED FROM		Garbage.	Rubbish.
1 to	5 Tons.....	..	29
5 "	10 ".....	29	56
10 "	15 ".....	18	3
15 "	20 ".....	15	..
20 "	25 ".....	15	..
25 "	30 ".....	8	..
30 "	35 ".....	3	..
35 "	40 ".....	4	..
40 "	45 ".....	1	..
45 "	50 ".....	1	..
Total No. of Days.....		94	94

MONMOUTH COUNTY—Continued.

Sixty-nine plans and specifications for plumbing and drainage of buildings have been approved by this department during the past year. The quality of the materials used in plumbing work is governed by ordinance, and tight constructions are secured by inspections and tests. Air pressure being used for testing pipes before fixtures are set and smoke, under pressure, is used to test the work when finally completed and ready for use.

After the plan has been approved and the work is in progress, and before any of the pipe line has been covered, request is made by the plumber, on the following blank, for inspection or test, as the case may be, and after completion a certificate of final approval must be secured by the plumber from the board of health before water can lawfully be turned on for use in connection with newly constructed plumbing work.

Form XLIII.

BOARD OF HEALTH OF THE CITY OF ASBURY PARK, N. J.

APPLICATION FOR EXAMINATION OF PLUMBING.

ASBURY PARK, ....., 189

To the Board of Health:

The plumbing and drainage work performed under plan No.....  
on the premises No.....is ready  
for examination.

Age: State whether for inspection, air test,  
or smoke test and final inspection.

.....  
.....  
.....  
.....  
.....

Signed.....  
Plumber.

Application received at office of Board of Health,  
.....189.....

Notices of contemplated minor alterations and repairs in drainage work are given by the plumber, before the work is begun, on the following blank:

## MONMOUTH COUNTY—Continued

Form 53.

BOARD OF HEALTH OF THE CITY OF ASBURY PARK.

NOTICE OF PROPOSED MINOR ALTERATIONS AND REPAIRS IN DRAINAGE SYSTEM.

ASBURY PARK,.....189

To the Board of Health:

Pursuant to the provisions of Section 2 of the Plumbing and Drainage Regulations, I hereby give notice that alterations and repairs in the plumbing on the premises.....  
owned by.....  
are to be made by me as follows:

Plumber.

This notice enables the board to cause an inspection to be made of all proposed alterations and repairs in plumbing work, and it is generally found that if any of the plumber's work needs inspection, it is that performed by the man who does the "jobbing."

Eighteen samples of kerosene oil were examined during the year. The flashing point in a closed tester ranged from 97° to 114° F. Four samples flashed a little below 100°.

One accident from the explosion of a kerosene lamp was brought to the attention of the board, but an investigation showed that the accident was due to having filled a lamp with gasoline, which resulted in inflicting a painful burn on the hand and arm of the person who attempted to light the lamp, also endangering property, and possibly the lives of many persons from fire.

Fewer cases of the notifiable communicable diseases have occurred in Asbury Park during the past year than in any preceding year since 1880, when the record was begun.

There has been but one case of diphtheria. This case is believed to have been contracted by the patient from another child who was on a short visit to Asbury Park, and who, it was afterwards learned, was suffering from sore throat.

Three cases of scarlet fever were reported during the year. The source of contagion in two of these cases was not learned. The other occurred in a woman employed in a family as child's nurse and who came to Asbury Park on August 25th. The patient was sick-

## MONMOUTH COUNTY—Continued.

ing with the disease on her arrival here, and the nature of her illness was reported by the physician who was called to see the case two days later.

Investigation showed that the patient came to the family in the capacity of child's nurse about a week or ten days previous to the illness, and that two cases of scarlet fever had existed in the employer's family about two month's preceding the date of her arrival.

The detention hospital for the care of communicable diseases was opened but once during the year, at which time a patient affected by scarlet fever was cared for.

The following table shows the number of communicable diseases reported and the number of deaths which have occurred therefrom in Asbury Park for 14 years, 1885-1897:

YEARS.	POPULATION.		NUMBER OF CASES REPORTED.							DEATHS.				
	Resident.	Non-Resident.	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	.....	.....	.....	2	1	.....	.....	.....	2
1886.....	2,125	17 108	4	2	9	.....	.....	.....	.....	4	.....	.....	.....	5
1887.....	2,250	18 896	82	7	7	.....	.....	.....	.....	7	.....	.....	.....	3
1888.....	2,375	20 684	.....	20	2	1	.....	.....	.....	1	.....	.....	.....	4
1889.....	2,500	22 472	10	3	.....	.....	.....	.....	.....	1	.....	.....	.....	3
1890.....	2,625	24 260	.....	16	6	.....	.....	.....	.....	1	2	.....	.....	4
1891.....	2,750	16 048	1	6	2	.....	.....	.....	.....	.....	.....	.....	.....	5
1892.....	2,875	27 836	36	4	7	1	.....	.....	.....	1	3	1	.....	4
1893.....	3,000	29 624	.....	7	6	.....	.....	.....	.....	.....	1	.....	.....	3
1894.....	3,380	31,412	7	7	2	4	1	8	.....	.....	.....	1	.....	5
1895.....	3,761	33 200	6	5	5	1	1	.....	.....	.....	3	.....	.....	2
1896.....	4,141	35 000	39	3	2	1	.....	.....	.....	1	1	.....	.....	7
1897.....	4,521	36,800	5	14	15	2	1	.....	.....	.....	2	1	.....	2
1898.....	4,901	32,600	5	3	1	1	.....	.....	.....	.....	.....	.....	.....	1
Totals.....	.....	.....	209	100	65	18	3	8	1	5	26	3	50	1

The total number of deaths for the year has been forty-one. Thirteen of these occurred among the non-resident population and twenty-eight were residents. This is the smallest number of deaths which

MONMOUTH COUNTY—Continued.

has occurred in any one year since 1888 and gives the lowest death-rate for this city since the establishment of the board of health, in 1880.

The following table shows the death rate in Asbury Park for each year since 1880 except for the year 1881, which is not available. The table shows the number of deaths occurring both among the resident and non-resident population :

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	48	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.....	2,000	15,320	20	14	34	10.00	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	23	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	35	24	59	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
1898.....	4,901	38,600	28	13	41	5.71	0.33

\* Resident population estimated, except for the years 1880 and 1895.  
 † Estimated.

If all the deaths which occurred in the city, including those among the non-residents, are charged to the resident population, the death-rate would be only 8 per 1000.

MONMOUTH COUNTY—Continued.

TABLE SHOWING CAUSES OF DEATH.

STATED CAUSE OF DEATH.	Resident.	Non-Resident.	Total.
Senility.....	2		2
Cancer.....	5		5
Consumption.....	1		1
Pulmonary Edema.....		1	1
Internal Hemorrhage.....	1		1
Cholera Infantum.....		2	2
Pneumonia.....	1		1
Cerebro-Spinal Meningitis.....	1		1
Acute Meningitis.....	1		1
Chronic Interstitial Nephritis.....	1		1
Acute Bronchitis.....	2		2
Heart Disease.....	3	3	6
Marasmus.....	1		1
Septic Peritonitis following Appendicitis.....		1	1
Bright's Disease.....	2		2
Paralysis.....	2		2
Epilepsy.....	1		1
Apoplexy.....		1	1
Chronic Entero-Colitis.....		1	1
Chronic Nephritis.....	1		1
Gastritis.....		1	1
Insolation.....		1	1
Arterio-Sclerosis.....		1	1
Pharyngeal Paralysis.....	1		1
Pyloric Stenosis.....		1	1
Liver disease.....	1		1
Premature birth.....	1		1
	28	13	41

TABLE SHOWING AGES AT DEATH.

	Males.	Females.	Total.
Under one year.....	4	5	9
From 1 to 2 years.....	0		0
" 2 " 5 ".....	1		1
" 5 " 10 ".....	0		0
" 10 " 20 ".....	1	2	3
" 20 " 30 ".....	1		1
" 30 " 40 ".....	1	2	3
" 40 " 50 ".....	1	3	4
" 50 " 60 ".....	1	3	4
" 60 " 70 ".....	1	5	6
" 70 " 80 ".....	2	2	4
" 80 " 90 ".....	0	6	6
	13	28	41

MONMOUTH COUNTY—Continued.

The reports of births received up to October 1st were as follows:

Males.....	21
Females.....	23
Total.....	44

Still births.....	1
Number of marriages returned.....	42

The reports of births are incomplete. Marriage and death returns are probably complete.

Office and inspection work was conducted as follows:

Number of original inspections made during year.....	1 000
Number of re-inspections.....	275
Number of citizens' complaints investigated.....	181
Number of written orders for abatement of nuisances.....	514
Number of cases in which the order to abate nuisances was known to have been complied with without further action.....	263
Number of cases referred to board with request for instructions.....	28
Number of written communications sent from office.....	1,495
Number of inspections of plumbing work under construction during year.....	267
Number of air-pressure tests applied.....	59
Number of smoke tests applied to plumbing and drainage work.....	72
Number of notices for minor alterations and repairs in plumbing work filed by plumbers and inspections made of same.....	83
Number of plumbing plans filed.....	71
Number of plumbing plans approved.....	69
Number of plumbing plans disapproved.....	2
Number of water-leaks reported by health inspectors to supt. water-works, since January 18th, 1898.....	105
Number of newly-connected drainage fixtures reported to water department since February 23th, 1898.....	242
Number of specimens sent to State bacteriological laboratory for examination.....	39
Number samples of water analyzed.....	3
Number samples of ice analyzed.....	2
Number of premises disinfected.....	10

MONMOUTH COUNTY—Continued.

TABLE SHOWING NUMBER OF WRITTEN PERMITS ISSUED DURING YEAR, BY MONTHS

MONTHS.	Certificates of approval of plumbing plans.	To be by sub-surface drains.	For construction of stable-manure receptacles.	Scavengers' permits.	Burial permits.	Transit permits.	For harvesting ice.	Buchers' ofal.	Total during month.
	October, 1897.....	9			10	1	1		
November, ".....	5	1		2	0	4			12
December, ".....	7			11	0	3			21
January, 1898.....	5		2	16	1	0	2		26
February, ".....	9			6	1	2			18
March, ".....	8			4	1	1			14
April, ".....	13	1	1	8	0	3		2	28
May, ".....	10	1		20	1	0			32
June, ".....	29		1	19	1	1			51
July, ".....	4			17	3	4			28
August, ".....	1			15	1	8			25
September, ".....	9			27	2	3			41
Totals.....	89	2	5	155	12	30	2	2	317

Citizens' complaints are received and entered on the following blanks, and the number and character of the nuisances complained of are shown in the following table:

Form 65.

BOARD OF HEALTH OF ASBURY PARK, N. J.

CITIZEN'S COMPLAINT.

The following complaint was received at the Health Office ....., 189...

Name of complainant, .....

Address of complainant, .....

Location of nuisance.....

Nature of complaint, .....

Report on inspection:

Inspector.



## MONMOUTH COUNTY—Continued.

MONTH.	Complaints of neglect of garbage contractor.	Overflowing or offensive privy-vaults.	Filthy accumulation of rubbish, etc. in back-yards.	Waste fluids on ground.	Overflowing catch-basins.	Private stables, offensive.	Obstructed drains and defective plumbing.	Leaky and offensive garbage receptacles.	Damp cellars.	Livery stables, offensive.	Offensive fish markets.	Unclean streets and street gutters.	Offensive water-closet apartments.	The keeping of chickens.	Dead animals in public streets.	Burning of garbage and offensive substances.	Disturbing noises.	Beating carpets in public parks and grounds.	Against persons selling immature veal.	Offensive odors in dwellings due to causes unknown to occupants.	Objectionable manner of storing stable manure.	Miscellaneous.	Total.
1897.																							
October.....	5	12	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	12
November.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
December.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1898.																							
January.....	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
February.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
March.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5
April.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
May.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
June.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
July.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
August.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
September.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15
Total.....	77	39	17	17	15	13	11	11	9	8	8	6	5	4	3	2	2	1	1	1	1	10	261

It was learned, upon inspection, that the complaints received (excluding those relating to the garbage service) were well founded in 158 cases.

In the remaining 26 cases the nuisance had been abated before the inspection was made or there had been no cause for the complaint.

Anonymous complaints are received and acted upon in the same manner as a complaint regularly signed. In fact, anonymous complaints have always been encouraged by the board, and experience in this community has shown that the correctness of fully as large a percentage of such complaints is to be relied upon as upon those which are regularly signed. Beside, they frequently lead to the detection and prompt abatement of nuisances long before they would otherwise be brought to the attention of an officer of this board.

During the summer months, when thousands of visitors are daily pouring into our city, and every hotel, boarding-house and cottage is filled to overflowing, the health inspector not only finds many demands upon his time and patience, but he needs to be doubly vigilant



A Neglected Back Yard.

## MONMOUTH COUNTY—Continued.

in locating and securing the abatement of nuisances which are too frequently found to exist in the rear of habitations that present a clean and attractive front. The use of a camera has been found helpful in making incontrovertible reports and records of such conditions.

An adverse decision has been rendered during the past year by the New Jersey Supreme Court, in a case brought by the board of health against the keepers of a livery stable to secure compliance with an ordinance requiring that the ground beneath the stable should be protected against pollution by placing impervious floors in the stable building. As the case has more than local interest, we append a copy of the ordinance, together with the finding of the court.

The case was brought in June, 1896, before a justice of the peace, and a judgment for the amount of the penalty provided by the ordinance was secured. The defendants appealed the case to the Court of Common Pleas. A dismissal was secured from this appeal, and the case was then removed to the Supreme Court, where it remained until the following decision was rendered.

The ordinance of this board, under which the suit was brought, is as follows:

Sec. 48. Every stable or building which may be hereafter constructed or reconstructed in the city of Asbury Park, in which any horse, mule or cow is kept or stabled, shall be so constructed and drained that no fluid excrement or refuse liquids shall flow upon or into the ground. All of the surface of the ground beneath every stall in every such building, and for a distance of at least four feet in the rear of every such stall, shall be covered and protected from pollution by a water-tight floor or covering, which shall be constructed as follows:

Where the said water-tight covering rests directly upon the ground surface, the said covering shall consist of concrete made with finely broken stone, one part; sharp sand, one part; hydraulic cement, one part; or coarse gravel, two parts; hydraulic cement, one part; to be laid at least three inches in thickness. Upon this concrete foundation a layer, at least two inches in thickness of best asphalt; or a layer, at least two inches in thickness of coal tar concrete; or a layer at least two inches in thickness of cement concrete made with sharp sand, one part; best Imperial Portland cement, one part, shall be laid.

When the water-tight covering is not in contact with the surface of the ground, it shall rest upon joist or floor beams three inches by ten inches, laid twelve inches from centres, and it shall consist of spruce or yellow pine planking, three inches thick and three inches wide, with beveled edges, and it shall be closely laid so that the joints shall be V shaped, and be open at the top one



A Neglected Back Yard.



Servants are Sometimes Careless.

## MONMOUTH COUNTY—Continued.

quarter of one inch. Said joints shall be calked with oakum and be made water-tight. Every such water-tight covering shall be laid upon a grade not less than one-eighth of one inch to each foot, and shall be so drained that all fluids which may fall upon it will be conveyed to a street sewer or otherwise disposed of, subject to the terms of a permit from this board. Portable wooden racks shall be placed upon all such asphalt, coal tar, concrete or cement concrete floors within said stalls. Said wooden racks or floor coverings shall be constructed of spruce strips, two inches in thickness, made in two sections, and they shall be so placed that they may be readily removed for cleaning.

No refuse liquids nor any fluid excrement shall fall upon or flow or soak into the ground beneath or adjoining any stable or building which is already erected in the city of Asbury Park, and in which any horse, mule or cow may be kept or stabled. Whenever the floor of any stable or building already erected and in which any horse, mule or cow shall be kept or stabled is not water-tight, and is not so graded and drained that all refuse fluids which fall upon it are quickly carried to a street sewer or otherwise disposed of in accordance with the requirements of this section, then the owner, occupant or lessee of every such stable or building shall, within thirty days after having received notice from this board, cause the floor of every such stable and building to be relaid in conformity with the requirements and specifications contained in this section. All of the solid excrement of animals which may accumulate on any premises in the city of Asbury Park or which is stored thereon shall be placed upon a water-tight floor constructed in accordance with the provisions of Sec. 47 of the sanitary code.

Any person or persons or corporation who shall offend against any of the provisions of this section shall forfeit and pay a penalty of one hundred dollars.

The decision of the Court in this case is as follows:

NEW JERSEY SUPREME COURT.  
February Term, 1898.

THE STATE, HARRY W. MORFORD *et al.*,  
vs. } *Certiorari.*  
THE BOARD OF HEALTH OF ASBURY PARK. }

## SYLLABUS.

1. Under the provisions of the acts of February 22, 1888, and March 29, 1892, the Board of Health of Asbury Park has no power to restrict the owners of a stable to the mode of laying a stable floor prescribed by an ordinance of the board. The owners have the alternative of resorting to any other method which will secure the sanitary condition of the stable, but by departing from the prescribed method they take the risk of creating a nuisance.

2. If the stable is a nuisance, the owners must be presented for maintaining a nuisance, and not for failing to comply with the plans specified in the ordinance.

## MONMOUTH COUNTY—Continued.

Argued at November Term, 1897, before Justices VAN SYCKEL, DIXON and COLLINS.

MESSERS. HAWKINS and DURAND for prosecutors.

SAMUEL A. PATTERSON, Esq., for defendants.

The opinion of the court was delivered by VAN SYCKEL, J.

The controversy in this case relates to the validity of the following ordinance, certified into this court.

(Here follows copy of ordinance.)

The board of health derives its power from the following legislative acts:

By the act of February 22, 1888, Revision, page 1642, boards of health are given power to adopt ordinances to compel, prescribe, regulate and control the plumbing, ventilation and drainage of all buildings, public and private, and the connection thereof with outside sewers, cess-pools or other receptacles, etc. And to secure the sanitary condition of all buildings, public and private.

Again by the act of March 29<sup>th</sup>, 1892, Revision, page 1644, power is given to regulate the keeping of all kinds of animals, and to regulate and control the accumulating offal, and to secure the sanitary condition of all public buildings and to protect the public water-supply, and to prohibit and remove any offensive matter or abate any nuisance in any place, public or private.

The act of 1888 also requires plans for the plumbing, ventilation and drainage of buildings to be submitted to the board of health for inspection and approval.

While the courts fully recognize the importance of the powers granted to boards of health, and give them a liberal construction, such boards will be confined in their interference with the lawful business of any individual to such interruptions and regulations as may be reasonably necessary to enable them to abate any nuisance he may create in conducting it.

*Weil vs. Ricord*, 9 C. E. Gr. 169.

The prosecutors insist that the statutes under which boards of health are constituted do not empower them to prescribe the manner in which stable-floors shall be laid with the strictness and particularity contained in the certified ordinance, and that it is therefore unreasonable and void.

In *Gregory vs. City of New York*, 40 N. Y. 273, the board of health had power to carry into full execution whatever the health and safety of the citizens required. The New York Court held that in the exercise of such authority the board could not order generally that all sinks and privies be removed as nuisances, but must find the existence of the nuisance as a fact, and exercise a specific judgment as to the necessity for removal.

The Massachusetts statute in general terms authorizes the boards of health to order the owner or occupant of premises at his own expense to remove a nuisance.

In *Watuppa Reservoir Co. vs. Mackenzie*, 132 Mass. 71, the Supreme Court denied the power of the board to prescribe the exclusive manner in which it should be removed, namely, by filling with gravel, earth or some proper material, to the satisfaction of the board, the flat lands which caused the alleged nuisance. The court declared that the owner had the right to adopt the alternative of excavating or dredging the flats, or keeping them covered with water.

MONMOUTH COUNTY—Continued.

This ruling was in conformity to the view which prevailed in Salem vs. Eastern R. R. Co., 98 Mass. 431, where the owner was not restricted to the mode prescribed by the board of health for removing a nuisance.

In Health Department vs. Lator, 38 Hun 542, the statute provided that the drainage and plumbing of all buildings should be executed in accordance with plans previously approved in writing by the board of health, and in consequence of such specific authority the owner of property was prohibited from departing from the plan so approved.

It is well settled that in order to uphold the action of boards exercising a special statutory jurisdiction, authority for it must be found in the positive law.

In our statutes before referred to, the power is given in general terms to the board of health to pass ordinances to regulate the drainage of stables; there is no language which authorizes the board to prescribe a mode to which stable-owners must rigidly conform. On the contrary, the act of 1888 expressly recognizes the right of the stable-owner to submit plans for drainage to the board for approval, and this negatives the idea that an ordinance may lawfully be adopted which will deprive the owner of that privilege.

The conclusion which results from this view of the statute is, not that the ordinance is void, but that the owner is not restricted to the manner of laying the floor which is prescribed by the ordinance.

The ordinance stands as a protection to those who conform to it. If the owner secures the sanitary condition of his building by adopting some other plan, he is not amenable to prosecution. In departing from the directions contained in the ordinance he takes the risk of creating a nuisance. If the plan he resorts to is a failure, he may be held for the penalty, not on the ground that he has not conformed to the plan specifically set out in the ordinance, but on allegation and proof that his stable is a nuisance.

Whether in this case the complaint is in such form, and the ordinance so framed, that upon proper proof the penalty could lawfully be imposed upon the owners of the stable, it is not necessary to decide.

The justice before whom the proceedings below were had convicted the owners of the offense of violating the ordinance, and imposed the penalty for that alleged offense, and not for maintaining a nuisance. They may have violated the ordinance without committing the offense of creating a nuisance.

No conviction could lawfully have been had except for maintaining a nuisance.

The judgment below must therefore be set aside.

Number of cases referred to the attorney for prosecution during the year...	12
Number of cases withdrawn on settlement by defendant and abatement of the nuisance.....	3
Number withdrawn because of insufficiency of law to cover the case...	2
Number of convictions secured.....	4
" cases lost.....	2
" " pending.....	2

MONMOUTH COUNTY—Continued.

Amount of judgments rendered.....	\$70 00
" collected.....	20 00
" uncollected.....	\$50 00

FINANCIAL STATEMENT.

Dr.		Cr.	
Balance on hand April 21st, 1897.....	\$22 92	Total expenditures.....	\$2,620 65
Amount received on appropriation.....	2,099 93	Balance.....	13 44
Received from fines and permits.....	272 85		
Amount transferred from reserved permit fund.....	238 39		
Total amount received.....	\$2,634 09		\$2,634 09

Following is a list of the items of expenditures:

Paid to employes.....	\$1,903 41
Postage and stationery.....	54 38
Printing.....	299 10
Subscriptions to journals.....	4 39
Analysis and bacteriological work.....	67 85
Drugs and disinfectants.....	53 24
Quarantine expenses.....	5 25
Hospital maintenance.....	5 90
Office furniture and supplies.....	94 95
Cleaning premises and abating nuisances.....	35 61
Miscellaneous.....	85 63
Carriage hire.....	3 50
Typewriting.....	7 44
	<u>\$2,620 65</u>

The pressing needs for the further advancement of sanitation in this city are:

1. An improvement in the present method of sewage disposal.
2. The construction by the city of a garbage and rubbish-disposal works.
3. The erection of an isolation hospital for the detention of communicable diseases to take the place of the one now gratuitously supplied by Mr. James A. Bradley.

The first two questions are now in the hands of a joint committee of the council, members of this board and citizens for solution, and the third is also receiving attention.

MONMOUTH COUNTY—*Continued.*

## ATLANTIC TOWNSHIP.

MEMBERS AND OFFICERS—Samuel Vandever, Colts Neck; Daniel Shults, Tinton Falls, George Wilkins, Jr., Freshold; Levi Scobey, Secretary and Assessor, Scobeyville.

Colts Neck has a population of 150; Scobeyville, 75; Vanderberg, 50. No meetings were held.

## BOROUGH OF BELMAR.

MEMBERS AND OFFICERS—Chas. H. Thompson, M.D., Joab Titus, Geo. W. Oswald, Wm. M. Bergen, F. S. Hutchinson, F. P. Philbrick; Neil H. Miller Secretary; Samuel C. Hoppock, Inspector; H. H. Wainwright, Attorney.

Total number of dwellings, 450. Number of births, 8; number of deaths, including transients, 21; number of deaths under one year, 4. Contagious diseases were reported as follows: Diphtheria, 2 cases; scarlet fever, 1 case. A public water-supply, furnishing water from artesian wells, has been introduced, and 200 dwellings have been connected. The daily consumption of water during the past summer averaged 150,000 gallons. Eight miles of sewers are in use, and 225 dwellings are connected, 111 of which were added during the past year. Refuse materials are collected under contract and transported outside of the borough limits. The collection of garbage is performed daily during the summer, three vehicles being employed in this service, at an annual cost to the borough of \$297. About 250 privy vaults are still in use in the borough. Six meetings were held by the board.

## BOROUGH OF BRADLEY BEACH.

MEMBERS AND OFFICERS—Samuel Layton, Joseph Stewart, Robert Reynolds, Thomas Layton, Charles Crawford; Elmer C. Benner, Secretary; David F. Gant, Inspector.

There are about 257 dwellings in the borough. Two cases of diphtheria were reported. Garbage is removed under contract once each week during the winter time and daily during the summer season, one wagon and two men being employed in the service at an

MONMOUTH COUNTY—*Continued.*

annual cost of \$250. Frequent meetings have been held by the board.

## EATONTOWN TOWNSHIP.

MEMBERS AND OFFICERS—E. W. Crater, M.D., Oceanport; C. O. McFadden, Long Branch; Geo. L. Gibbs, West Long Branch; R. F. Hopper, Eatontown; Daniel Morris, Secretary, Eatontown; James Steen, Attorney, Eatontown.

About 500 dwellings in the township. Two cases of diphtheria, seven of scarlet fever, and three of typhoid fever occurred. Only two physicians practicing in the township regularly report communicable diseases in accordance with the requirements of the law. Refuse material is deposited in places which are designated by the board of health. Eight complaints were investigated—eight nuisances were found and all were abated. Twelve meetings were held by the board. In response to a request from the local board of health an investigation was made concerning the deposit of night soil in the township by parties living in Long Branch and the following report was made:

Kensington Park is a small collection of houses located in Eatontown township, about 1 mile from Long Branch.

It has been the custom for the scavengers to cart night soil from Long Branch and parts of Eatontown township and deposit the same on a property owned by Mr. West. The contents of cesspools is also emptied in the same field. Mr. West's farm is located at the south end of Elkwood Park and faces Oceanport avenue.

I examined the premises and found at least fifteen spots where fresh material from water-closets and cesspools had been dumped, and many places in the field gave evidence of dumping at no very distant date. There is no attempt made to cover the foul smelling masses, and those who sign the petition do so because of odors carried to dwellings by prevailing westerly winds.

The dumping has been complained of before and arrests have been made, but no action taken to stop it entirely.

Dr. E. W. Crater, of Oceanport, is physician of the local board, and it is stated that a contractor from Long Branch has leased a farm near the present location of dumping ground and proposes to build a building and carry on a fertilizing establishment.

The place where dumping of night-soil and cesspool matter is now carried on is a nuisance, and should be conducted under better supervision or immediately stopped.

The ordinance of the local board, which is hereto attached, seems to give sufficient power of control.

## MONMOUTH COUNTY—Continued.

## AN ORDINANCE TO PROHIBIT NUISANCES IN EATONTOWN TOWNSHIP.

Be it ordained by the board of health of the township of Eatontown:

SECTION 1. That nuisances within the township of Eatontown are defined and declared to be, and include and embrace: (1) the placing or depositing on any street, alley, or in or upon any public or private property any dead animal, or part of the same, filth from privies, or any foul or offensive or noxious matter or substance whatever; (2) the carrying or conveying through the township of Eatontown any dead carcass, any substance which shall have been removed from any privy vault or cesspool, or of any butchers' offal, sea swill, refuse vegetables or garbage, unless the same shall be enclosed in air-tight barrels; (3) the permitting or allowing the deposit thereof, or of any other refuse material which shall emit foul, noxious or disagreeable odors, or of allowing such deposit to remain upon any lands within said township.

SECTION 2. And be it further ordained, That each and every such nuisance is hereby prohibited and forbidden within the township, and any person or persons making, causing or maintaining any of said nuisances, and any person or persons permitting such nuisances upon any lands owned or controlled by him, her or them, shall forfeit and pay a penalty of fifty dollars for each and every offence.

SECTION 3. No person shall transport, collect or carry through the highways of this township any dead carcass, night soil, sea swill, butchers' offal, refuse vegetables or other refuse garbage, or noxious material, or any decomposing solid or fluid, except in strict conformity with the requirements of a written permit or license therefor, first received from the board of health of this township; and each and every person offending against this section shall forfeit and pay a penalty of fifty dollars.

Adopted May 4th, 1896.

ELLIS W. CRATER, M. D.,  
President.

Attest:

T. ELWOOD SNYDER, Clerk.

## BOROUGH OF ENGLISHTOWN.

MEMBERS AND OFFICERS—Garret Forman, A. T. Applegate, D. E. Laird, Samuel Davison; L. V. Dey, Secretary.

Total number of dwellings, 100. Births reported, 4; deaths reported, 4.

## TOWN OF FREEHOLD.

MEMBERS AND OFFICERS—John Bawden, O. R. Freeman, M. D., I. S. Long, M. D., D. S. Smith, S. L. Bennett; J. O. Burtt, Secretary.

## MONMOUTH COUNTY—Continued.

About 300 dwellings are connected with the public water-service. Thirty-six connections have been made with sewers during the past year, making a total of 260 premises in the town having sewer connections. Five meetings were held.

## FREEHOLD TOWNSHIP.

MEMBERS AND OFFICERS—Peter F. Conover, President; Charles D. B. Forman, Millard F. Conover, John B. Parker; Rufe V. Lawrence, Assessor and Secretary; O. R. Freeman, M. D., Inspector.

Four cases of diphtheria were reported, accompanied by three deaths, and four cases of typhoid fever, with two deaths. One of the cases of typhoid fever was traced to contaminated well-water. The board secured the closing of the well, and caused it to be filled with earth. Three nuisances were reported to the board, and abatement was secured in each case.

## HOLMDEL TOWNSHIP.

MEMBERS AND OFFICERS—Wesley Mason, Keyport; J. I. Holmes, Holmdel; Jacob O. Lamberton, Keyport; Aaron Longstreet, Secretary, Keyport; Fred V. Thompson, M.D., Holmdel.

There are about 300 dwellings in the township. No meetings were held.

## HOWELL TOWNSHIP.

MEMBERS AND OFFICERS—B. M. Cooper, Lakewood; Robert H. Morris, Turkey; Chas. E. Terry, Farmingdale; Stephen M. Dibrow, M.D., Inspector, Farmingdale; James H. Butcher, Assessor and Secretary, Ardena; Aaron E. Johnson, Farmingdale.

The following hamlets are located in the township: Farmingdale, having 200 inhabitants; Turkey, 100; Southard, 125; Jerseyville, 75; Ardena, 100; Squankum, 125. Number of dwellings, 700. Births reported, 36; deaths reported, 44. Six meetings were held.

## MONMOUTH COUNTY—Continued.

## COMMISSION OF LONG BRANCH.

MEMBERS AND OFFICERS—Wm. J. Smythe, Jr., Geo. H. Baker, M.D., Theodore Howland, E. H. Clark, J. V. Jordan, Paul F. Brzo; E. B. Blaisdell, Secretary; Benj. S. Vanhuel, Inspector; Thos. F. Fay, Attorney.

Births reported, 155; deaths reported, 170. Communicable diseases were reported as follows: Diphtheria, 20; scarlet fever, 20; typhoid fever, 11. About 1,200 dwellings are connected with the public water-supply; 1,500,000 gallons are used daily, and the mains have been extended during the last year about 2,000 feet. About 13 miles of sewers are in use. Six hundred premises are connected, 60 of which were attached during the past year. The disposal of sewage is through a pipe extending 1,000 feet into the ocean. About 1,500 privy vaults are in use. Seventeen hundred and fifty complaints were received, and in 900 of these cases improvement was secured. Prosecutions for failure to abate nuisances were instituted in ten cases. Twenty meetings were held.

The following complaint was received, signed by 18 residents of Long Branch, and dated August 11th, 1898:

*The State Board of Health:*

GENTLEMEN—The undersigned make complaint to your Honorable Body of the condition of the brook between Bath avenue and Broadway, in Long Branch, New Jersey, known as Wardell's Brook. The local authorities take no action in this matter, although frequently requested to do so. The brook is in a filthy condition and a constant menace to the public health, and we earnestly request your prompt attention in suppressing this nuisance. The local board of health refuses to do anything in this matter because they have no money, and the board of commissioners fail to furnish the funds needed to perform this very necessary work.

The following communication was sent to the commissioners of Long Branch:

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

TRENTON, September 7th, 1898.

To the Board of Commissioners of Long Branch, N. J.:

GENTLEMEN—A petition signed by seventeen persons, dated August 11th, 1898, was received by this board. Said petition states that the condition of the brook between Bath avenue and Broadway, in Long Branch, is unhealthy and a source of offensive odors. An inspection made by an officer of this

## MONMOUTH COUNTY—Continued.

board shows that the conditions described in the petition are objectionable, and that the impounded water is filthy and offensive. Your attention is called to the urgent necessity of abating this nuisance.

Very respectfully,

HENRY MITCHELL,  
Secretary.

## BOROUGH OF MANASQUAN.

MEMBERS AND OFFICERS—H. H. Wainwright, Robt. C. Conover, R. V. W. Borroughs, R. W. Herbert; M. R. Mulford, Secretary; B. Chamberlain, Inspector.

Births reported, 9; deaths, 5; deaths under one year, 2. One case of diphtheria was reported. Ten meetings were held.

## MARLBORO TOWNSHIP.

MEMBERS AND OFFICERS—A. Hardy, Morganville; H. C. M. Dennis, Freehold; J. Dely, M.D., Marlboro; Wm. Carson, Marlboro; D. A. Baird, Secretary, Marlboro.

Marlboro has 250 inhabitants, Morganville 100, Hillsdale 100, Brush Neck 75. Births reported, 11; deaths, 16; deaths under one year, 1. Twenty-five cases of diphtheria accompanied by 6 deaths, and 1 case of typhoid fever occurred. One slaughter-house, managed by T. P. Hayward, is located in the township. Four meetings were held.

## BOROUGH OF MATAWAN.

MEMBERS AND OFFICERS—Edwin Lambert, Wm. Hardwick, John W. Hornor, Isaac W. Bedle, A. J. Jackson, M.D.; Wm. Rodgers, Secretary; J. W. Maggs, Inspector.

Number of dwellings, 328. Births reported, 75; deaths reported, 34.

## MIDDLETOWN TOWNSHIP.

MEMBERS AND OFFICERS—Geo. E. Jenkinson, Atlantic Highlands; D. W. Van Note, Belford; G. C. Morris, New Monmouth; O. W. Budlong, M. D., Belford; Omar Sickles, Assessor and Secretary, Navesink; John E. Foster, Attorney, Atlantic Highlands.

## MONMOUTH COUNTY—Continued.

Births reported, 85; deaths, 56; deaths under one year, 7. Four cases of diphtheria, 3 of scarlet fever and 5 of typhoid fever occurred. Seven meetings were held.

## MILLSTONE TOWNSHIP.

MEMBERS AND OFFICERS—Wm. Parker, Etra; Curtis B. Forman, Smithburg; John H. Ely, Perrineville; Wm. T. McMillen, M.D., Perrineville; Geo. J. Ely, Assessor and Secretary, Perrineville.

## BOROUGH OF NEPTUNE CITY.

MEMBERS AND OFFICERS—E. Finley, John Slocum, Monroe Newman, James King; Wm. Rogers, Secretary.

Three cases of scarlet fever were reported. Three meetings were held by the board.

## NEPTUNE TOWNSHIP.

MEMBERS AND OFFICERS—John Hulsbart, Wm. A. Berry, Samuel B. Gurin, Alex Williamson, M.D.; Samuel A. Cliver, Secretary and Assessor; Walter Gravatt; S. A. Patterson, Attorney. All of Asbury Park.

There are about 1,600 dwellings in the township. Births reported, 123; deaths reported, 108; deaths under one year, 35. Sixteen cases of diphtheria were reported, with 3 deaths; membranous croup, 2 cases, both of which were fatal; scarlet fever, 1 case. Garbage is collected under contract, the collections being daily in the summer and three times each week for the remainder of the year; \$509.25 was paid for this service during the year 1897. Twenty-four meetings were held. At a meeting of the board, held October 1st, 1898, an ordinance was introduced to regulate and control the location of hog-pens. This course was found necessary because of the large number of swine brought to this locality from distant points to be boarded during the hot weather, these animals being fed on garbage collected from the large hotels in the vicinity. The following ordinance was adopted by the township committee, November 9th, 1898, and it

## MONMOUTH COUNTY—Continued.

seems probable that work will soon begin for the introduction of a water-supply, the water to be obtained from artesian sources:

Be it ordained and enacted by the township committee of the inhabitants of the township of Neptune:

That whereas, by a certain resolution of the township committee of the inhabitants of the township of Neptune, passed on the twentieth day of October, A. D. eighteen hundred and ninety-eight, consent was given to the formation of the East Jersey Coast Water Company, for the purpose of supplying the said township of Neptune and the inhabitants thereof with water and to lay pipes in the streets and roads of said township.

And whereas, the said company has now been incorporated and has submitted to the said inhabitants of the township of Neptune, certain propositions for the furnishing of a supply of water as aforesaid, which propositions are embodied in a certain contract, of which the following is a true copy:

This agreement made this ninth day of November, in the year of our Lord one thousand eight hundred and ninety-eight,

Between the East Jersey Coast Water Company, of the first part, and the inhabitants of the township of Neptune, in the county of Monmouth and State of New Jersey, of the second part, both parties being corporations under the laws of the State of New Jersey:

Witnesseth, that the said party of the first part, in consideration of the covenants and agreements hereinafter contained, and on the part of the said party of the second part to be done, kept and performed, hereby covenants and agrees to and with the said party of the second part, within three months from the date hereof, to begin the construction in some suitable location, of a system of water-works and the laying of the pipes hereinafter mentioned, and to build the same within twelve months from the date of the said commencement, laying not less than five miles of pipe of from twelve to four inches in diameter, and upon the pipes so laid, upon the completion of the said works, to erect fifteen double nozzle fire-hydrants at such places as shall be designated by the township committee of the said township, and furnish water for them free to said township for the extinguishment of fires only during the term of this contract; and at the expiration of five years from the date hereof, to furnish free, five additional hydrants of the character aforesaid; and at the expiration of ten years from the date hereof, to furnish free, five additional hydrants of the character aforesaid; and at the expiration of fifteen years from the date hereof, to furnish free, five additional hydrants of the character aforesaid. All of said hydrants to be used for the extinguishment of fires only. To furnish and place additional hydrants of the character aforesaid and for the purpose aforesaid upon any pipes laid of the company, which the township committee may from time to time order, and at such places as they may direct, provided that the said committee shall pay for the use of said last-mentioned additional hydrants the annual sum of fifteen dollars for each and every one so ordered; and erect on said pipes such cranes that may be required for sprinkling purposes.



## MONMOUTH COUNTY—Continued.

To furnish pure water to the inhabitants of the said township of Neptune at a price not exceeding the following schedule: All water required by the township committee, whether for street sprinkling, sewers or for public schools or municipal buildings, at the rate of twelve and one-half cents (12½) for each one thousand gallons as registered through water meters, which shall be furnished by the water company. Payments for all water used, and rentals for fire hydrants ordered, shall be made each three months, on the first days of January, April, July and October of each year.

All water used by private consumers shall be charged for at the rate of twenty-five (25) cents per one thousand (1,000) gallons, through water-meters furnished by the company; the company to have the right to charge a minimum annual rate of six dollars (\$6), whether the quantity used at the rate aforesaid shall amount to that sum or not, and an additional sum of two dollars (\$2) per year for the use of the meter and costs of keeping the same in repair. And provided, however, that any consumer may purchase his own meter of the design adopted by the water company, and in that case no charge for the meter will be made, but the said meter will be under the supervision of the water company, and if out of order must be replaced or repaired upon written order of said company. All water used in excess of the minimum rate shall be charged and paid for at the rate of twenty-five cents per one thousand gallons.

The company shall have the right to make all reasonable rules for the management of its business, the collection of rentals and other rules relating to said business, necessary for the operation thereof.

To keep open the streets, roads, alleys or avenues in which any pipes or mains shall be laid no longer than a period of forty-eight hours, and after said work is completed to leave the said roads, streets, alleys and avenues in as good condition as the same were in before they were opened by the said company.

To lay said pipes and mains within ten feet of the curb-line along the said roads, streets, avenues or alleys.

To file within sixty days from the time of adoption of this ordinance with the clerk of the township a bond in the sum of five thousand dollars, conditioned for the faithful performance of this agreement.

And the said party of the second part hereto in consideration of the covenants and conditions set forth and on the part of the said party of the first part, to be done, kept and performed, hereby covenants and agrees to and with the said party of the first part, its successors and assigns, to observe the conditions and stipulations of this contract, and to pay the prices mentioned in the above schedule at such times during the year as shall be hereafter agreed upon by the parties hereto.

It is hereby mutually agreed and understood by and between the parties hereto, this contract shall continue in force and effect for and during the term of twenty-five years from the date hereof.

In witness whereof, the said party of the first part hereto, in pursuance of a resolution of the board of directors thereof, has caused its common or corporate seal to be hereto affixed, attested by its proper officers, and the said party of

## MONMOUTH COUNTY—Continued.

the second part hereto, in pursuance of an ordinance duly passed and adopted by the governing body thereof, has caused its common or corporate seal to be hereto affixed, attested by the chairman and clerk of the township committee thereof.

EAST JERSEY COAST WATER CO.

By J. W. HAWLEY,  
President.

Attest:

H. BAYARD HODGE,  
Secretary.

And whereas, the said contract is satisfactory in its terms, conditions and stipulations:

Therefore be it enacted, that said contract above set forth be and the same is hereby adopted, and the proper officers of the said the inhabitants of the township of Neptune are hereby authorized and directed to execute the same on the part of the said the inhabitants of the township of Neptune.

## OCEAN GROVE ASSOCIATION.

MEMBERS AND OFFICERS—Rev. A. E. Ballard, James L. Hays, George W. Evans, Rev. R. J. Andrews, Rev. J. R. Daniels, H. W. Murphy; H. B. Alday, M. D., Inspector; J. C. H. Alday, M. D., Secretary.

There are about 1,250 dwellings in the district. Births reported, 23; deaths, 38; under one year, 10. Four cases of diphtheria and four of scarlet fever were reported. About 1,200 dwellings are connected with the sewers. The out-fall of the sewage is into the sea, through an iron pipe 12 inches in diameter and 1,200 feet in length. No meetings were held.

## BARTAN TOWNSHIP.

MEMBERS AND OFFICERS—Augustus Maurer, Frank Mason, Wm. Con Smith, E. Roberts, M. D.; Asbury F. Bedle, Assessor; Wm. Gelherly, Secretary; James M. Walling, Inspector. All of Keyport.

Number of dwellings in township, about 700. One case of membranous croup and two of typhoid fever occurred. One nuisance was abated. Sixteen meetings were held.

## TOWN OF RED BANK.

MEMBERS AND OFFICERS—Charles D. Warner, H. J. Chied, James Walsh; Samuel Sabath, Secretary; W. H. Wilson, Inspector.

## MONMOUTH COUNTY—Continued.

Two cases of diphtheria were reported, but other cases of communicable diseases occurred of which no report was received. Four meetings were held.

## BOROUGH OF SPRING LAKE.

MEMBERS AND OFFICERS—D. H. Hills, Geo. Eckman, Wm. W. Trout, M. D., Edward Remsen; Levi L. Wooley, Secretary; Hawkins & Durand, Attorneys, Asbury Park.

Total number of dwellings, 100. Births reported, 2; deaths, 7; deaths under 1 year, 2. Three miles of sewers are in use in the borough. Six meetings were held.

## UPPER FREEHOLD TOWNSHIP.

MEMBERS AND OFFICERS—Wm. Kirby, Cream Ridge; Edward A. Hyres, Red Valley; Isaac S. Dames, Imlaystown; Franklin C. Price, M. D., Secretary, Imlaystown; Wm. Quicksall, Assessor, Hornerstown.

Hornerstown has a population of 150; Cream Ridge, 40; Imlaystown, 200; Ellisdale, 59; Sharon, 40. Number of dwellings in township, 481. Births reported, 69; deaths, 22; deaths under one year, 9. Slaughter houses in the township are located as follows: One near Allentown, managed by D. M. Bunting; another near Allentown is managed by H. Riley. Two meetings were held.

## WALL TOWNSHIP.

MEMBERS AND OFFICERS—Chas. Gifford, Allenwood; Benj. E. Allgor, New Bedford; R. A. Allgor, Como; W. W. Trout, M.D., Spring Lake; Geo. E. Rogers, Assessor, New Bedford; E. P. Longstreet, Attorney, Manasquan.

Number of dwellings in township about 850. Sixty-three births were reported, 71 deaths, 21 deaths under one year. Twenty cases of diphtheria, 4 cases of membranous croup, 30 cases of scarlet fever and 10 cases of typhoid fever occurred. Three nuisances were abated and six meetings were held.

## MORRIS COUNTY.

## TOWN OF BOONTON.

MEMBERS AND OFFICERS—Wm. I. Powers, Wm. J. Milner, Edward J. Griffith; George Blanchard, Secretary; Thomas Hammond, Inspector; Milton S. Kitchell, Attorney.

Births reported, 46; deaths reported, 53; deaths under one year, 11. Communicable diseases were reported as follows: Diphtheria, 7, deaths, 2; membranous croup, 1; scarlet fever, 4. Water-supply is connected with 200 dwellings and the average daily quantity consumed is 125,000 gallons. Garbage is collected under contract and the removals are semi-weekly. Two men and one vehicle are employed in this work at an annual cost to the town of \$360. Disposal of garbage is by dumping upon vacant lots and covering with earth. Three hundred and thirty inspections were made during the year.

## BOONTON TOWNSHIP.

MEMBERS AND OFFICERS—Wm. R. Bailey, John Barrett, Andrew Kincaid, Cuthbert Wigg, M.D.; G. D. Crane, Secretary; Joseph Stevenson, Assessor and Inspector; M. T. Kitchell, Attorney.

Total number of dwellings, about 180. Water-supply is obtained partly from the public water works of the town of Boonton, five dwellings being connected with the water mains. The board meets monthly.

## BOROUGH OF CHATHAM.

MEMBERS AND OFFICERS—Geo. H. Kirkpatrick, A. H. Day, W. Elder, Geo. M. Swain, M.D.; M. K. Hopping, Secretary.

The borough contains about 236 dwellings. Communicable diseases were reported as follows: Diphtheria, 4; scarlet fever, 2. A new water-supply has been introduced and 101 dwellings have been connected with it. The water is obtained from six artesian wells. About 30 domestic wells have been examined and evidence of contamination was found in all but two of them. The water flows from each of the artesian wells to a height of eight feet above ground-level.

## MORRIS COUNTY—Continued.

The wells are 100 feet in depth and are located about one quarter mile from the center of the town. Water is pumped to a stand-pipe 25 x 50. The plant is owned by the borough.

## CHESTER TOWNSHIP.

MEMBERS AND OFFICERS—Elwood Pitney, A. W. Cooper, S. F. Leek; Joseph D. Budd, Secretary and Assessor. All of Chester.

Chester has 800 inhabitants. One meeting was held.

## CITY OF DOVER.

MEMBERS AND OFFICERS—Harry S. Peters, John H. Grimm, Chas. F. Hel-lander, Eugene Buchanan, Jos. V. Baker, Secretary; James H. Neighbour, Attorney.

Total number of dwellings in the city is estimated to be 1,250. Number of births reported for the year ending June 30, 1898, 139; deaths, 81; deaths under one year, 18. The following communicable diseases were reported: Diphtheria, 10; three deaths. Membranous croup, 1; one death. Scarlet fever, 65; two deaths. Typhoid fever, 8; three deaths. It is believed that the typhoid fever cases were caused by polluted drinking-water. Refuse materials are collected and removed from the city limits at an annual cost of \$1,500. The service is conducted under the supervision of the board of health, and it is estimated that 1,375 cubic yards of garbage were removed during the year. There are about 150 stables in the city. Eighty-two complaints were investigated, and in all cases where a nuisance was found to exist, abatement of the same was secured. Fifteen meetings were held by the board.

## HANOVER TOWNSHIP.

MEMBERS AND OFFICERS—Phineas Farrand, Troy Hills; Livingston Petrey, Hanover; E. J. Spenser, Morris Plains; L. B. Ford, Assessor.

## MORRIS COUNTY—Continued.

## JEFFERSON TOWNSHIP.

MEMBERS AND OFFICERS—Frederick Matthews, Dover; Edward Blanchard, Dover; Amzi D. Allison, Milton; H. W. Kice, M. D., Port Oram; Charles Chamberlain, Assessor and Secretary, Woodport.

Two meetings were held.

## MENDHAM TOWNSHIP.

MEMBERS AND OFFICERS—Jesse N. Forsyth, Mendham; Calvin Willett, Mendham; Harry Baldwin, Brookside; John Stiger, M. D., Mendham; John D. Lindsley, Assessor, Mendham; John Kennedy, Secretary, Mendham.

No meetings were held.

## MONTVILLE TOWNSHIP.

MEMBERS AND OFFICERS—Fred Van Duyn, Glen View; John H. Capstick, Montville; Joseph Starkey, Boonton; John G. Ryerson, M. D., Boonton; Asa T. Cook, Assessor and Secretary, Montville.

Montville has 400 inhabitants, Pine Brook 300, Lower Montville 250, Taylortown 250, and Whitehall 200. Five meetings were held.

## MORRIS TOWNSHIP.

MEMBERS AND OFFICERS—Charles Y. Swan, Morristown; H. L. Pruden, Morristown; G. B. Parsons, Morris Plains; C. M. Phillips, Assessor and Secretary, Morristown; Henry C. Pitney, Jr., Attorney, Morristown.

There are about 475 dwellings in the township. One slaughter-house, located on West avenue, is managed by John D. Guerin, and one in Washington Valley is owned by Arnold Bros. One nuisance was abated. Five meetings were held.

## BOROUGH OF MT. ARLINGTON.

MEMBERS AND OFFICERS—R. J. Chaplin, F. W. Zuck, Geo. W. Cisco, D. T. Trundy; Cyrus E. Cook, Secretary.

About 208 dwellings in the borough, a number of which remain unoccupied for a portion of the year, this being a summer resort.

## MORRIS COUNTY—Continued.

Two births were reported and one death. Two cases of diphtheria occurred, one of which was fatal. Water-supply is from surface wells and waste fluids are discharged into cesspools, no drainage being conducted to the lake. Garbage is collected under contract at an annual expense of \$433. Ten complaints received and ten nuisances abated. Seven meetings were held by the board.

## MT. OLIVE TOWNSHIP.

MEMBERS AND OFFICERS—D. H. Wolfe, Budd's Lake; Jacob W. Wack, Drake-town; J. W. Lindebury, Bartley; C. N. Miller, M.D., Flanders; S. W. Salmon, Assessor and Secretary, Mt. Olive.

The population of Flanders is about 240, and Bartley 85. Number of dwellings in township, 250. Births reported, 31; deaths reported, 13; deaths under one year, 1. One case of scarlet fever was reported. Two slaughter-houses are located in the township as follows: One managed by A. J. Read and one by Watson Huff, both near Flanders. One meeting was held by the board.

## BOROUGH OF MT. TABOR.

MEMBERS AND OFFICERS—H. L. Cort, M.D., C. L. Pitts, A. A. Campbell, S. M. Long, F. N. Barrett, Joseph Shaw; P. F. Cook, Secretary; J. H. Cox, Inspector, Mt. Tabor. All non-resident with exception of Inspector.

Number of dwellings, 215. About 60,000 gallons of water are supplied daily during the summer season, all dwellings in the borough being connected with the mains. Waste fluids are disposed of by discharge into cesspools. There are only ten horse-stables in the borough. Two meetings were held by the board.

## BOROUGH OF POMPTON LAKES.

MEMBERS AND OFFICERS—W. S. Colfax, J. C. Moyan, F. S. Wilson; W. B. Longyear, Secretary; Lemuel Van Ness.

## MORRIS COUNTY—Continued.

Number of dwellings, 200; births reported, 9; deaths reported, 11; deaths under one year, 2. One meeting was held.

## BOROUGH OF PORT ORAM.

MEMBERS AND OFFICERS—H. W. Kice, R. F. Oram, Jr.; J. J. Langdon, Secretary.

Total number of dwellings, 500; births reported, 45; deaths reported, 20; deaths under one year, 7. Communicable diseases reported as follows: Scarlet fever, 16, with 3 deaths. Water-supply is mostly from cisterns. Four meetings were held by the board.

## BOROUGH OF ROCKAWAY.

MEMBERS AND OFFICERS—John Morris, Geo. S. Dearborn, M.D., David C. Berry, Henry D. Tuttle, E. H. Todd, J. W. Bruen, F. W. Flagge, M.D.; Wm. May, Secretary; A. Q. Broadwell, Inspector.

Number of dwellings in borough, 300. Births reported, 29; deaths, 20; deaths under 1 year, 6. One case of scarlet fever and one of typhoid fever were reported. About 20 dwellings are connected with the public water-supply. Seven nuisances were abated. Four meetings were held.

## ROCKAWAY TOWNSHIP.

MEMBERS AND OFFICERS—James Arthur, Port Oram; Thomas Helm, Hibernia; Morris Fox, Rockaway; F. W. Flagge, M.D., Rockaway; David Wiggins, Assessor and Secretary.

The following hamlets are located in the township: Hibernia, population 1100; Mt. Hope, 400; Denville, 800; Franklin, 400; Greenville, 200; Richard Mine, 1000. Total number of dwellings, about 1000. Births reported, 55; deaths, 56; deaths under 1 year, 10. Three cases of diphtheria and one of membranous croup occurred. Three slaughter-houses are located in the township. Four meetings were held.

## MORRIS COUNTY—Continued.

## ROXBURY TOWNSHIP.

MEMBERS AND OFFICERS—George Gelig, Succasunna; Theodore F. King, Ledgerwood; Joseph McConnell, Port Morris; F. M. Flowers, Secretary, Landing.

There are 416 dwellings in the township. Births reported, 64; deaths, 34. One case of diphtheria and 15 of scarlet fever were reported. Five nuisances were abated. Six meetings were held.

## OCEAN COUNTY.

## BOROUGH OF BAY HEAD.

MEMBERS AND OFFICERS—A. S. Pennington, C. Priest, T. B. Pierce, B. F. Hawley, M. D.; Julius Foster, Secretary.

A public water-supply is furnished from artesian wells. The average daily consumption during the past year was 50,000 gallons. One hundred and five dwellings are connected with the public water-mains. Cesspools are still in use for receiving waste fluids. Refuse materials are removed by private arrangement. There are no stables in the borough east of the line of the Pennsylvania Railroad track. One nuisance caused by a piggery was investigated during the year and is still unabated. Two meetings were held by the board.

## BERKLEY TOWNSHIP.

MEMBERS AND OFFICERS—Peter E. Runyon, Toms River; Thomas J. Haring, Bayville; Wm. H. Patten, Bayville; Clarence Disbrow, M.D., Toms River; Devine Butler, Assessor and Secretary, Bayville.

Bayville has 300 inhabitants, and Bushwick has 60. There are 151 dwellings in the township. Births reported 11, deaths 15. Four cases of typhoid fever occurred, accompanied by two deaths. Twelve meetings were held.

## OCEAN COUNTY—Continued.

## LACEY TOWNSHIP.

MEMBERS AND OFFICERS—George Frazee, Forked River; A. G. Wilbur, Forked River; Henry Scout, Lanoka; D. W. Blake, M.D., Inspector, Forked River; B. F. Holmea, Assessor, Forked River; A. G. Wilbert, Secretary.

Forked River has a population of 800 and Lanoka of 200. Number of dwellings in the township, 300. Two cases of typhoid fever occurred during the year. One nuisance was abated and two were investigated. One meeting was held.

## LAKEWOOD TOWNSHIP.

MEMBERS AND OFFICERS—George Mathews, John Shearman, W. C. LaComple, H. H. Cale, M.D.; R. B. Robbins, Assessor; John B. Peters, Secretary.

Total number of dwellings in township about 550, including the unincorporated district called Lakewood. Births reported during the year, 82; deaths reported, 66; deaths under one year, 9. Three cases of diphtheria and 9 cases of scarlet fever were reported. Six complaints were investigated and six nuisances were abated. A public water-supply and sewerage system is in use in Lakewood. One meeting was held by the board.

## LITTLE EGG HARBOR TOWNSHIP.

MEMBERS AND OFFICERS—Jos. I. Smith, Thomas Kelly, Chas. M. Berry; T. T. Price, M.D., Secretary; Otis Jones, Assessor. All of Tuckerton.

The following unincorporated districts are located in the township: Tuckerton, population about 1,600; Parkertown, population about 300. A new public water-works has been constructed during the past year. The source of supply is the mill-pond located in the village. Two slaughter-houses are located in the township, one of which is conducted by Geo. W. Austin at East Tuckerton, and one by U. G. Jones at West Tuckerton. One meeting was held.

## OCEAN COUNTY—Continued.

## MANCHESTER TOWNSHIP.

MEMBERS AND OFFICERS—Wellington Howland, Lakehurst; Gilbert Harkins, Lakehurst; Frank Brower, M.D., Lakehurst; P. H. Emley, Assessor and Secretary, Lakehurst; James Bowers, Whitings.

The population of Whitings is about 50 and Ridgeway has about 25. Sixteen births were reported and 8 deaths. Two cases of typhoid fever occurred, both of which were traced to polluted water. One meeting was held.

## OCEAN TOWNSHIP.

MEMBERS AND OFFICERS—Chas. F. Jones, Elvin R. Penn; Wm. B. Wilkins, Assessor and Secretary.

There are about 100 dwellings in the township. The following is a report of an inspection made by an officer of the State board of health May 18th, 1898:

## REPORT OF INSPECTION OF IMPERFECT DRAINAGE AT WARETOWN, OCEAN TOWNSHIP, OCEAN COUNTY, MAY 18TH, 1898.

I found upon examination that there is a small stream which crosses the main street near the residence of Mr. Howard in Waretown, and runs for a distance of about half a mile to Barnegat Bay. On either side of this stream and east of the main street the property is owned respectively by Mr. Holmes, of Waretown, and the Messrs. Valentine of Woodbridge, New Jersey. At times after storms the mouth of the stream becomes narrowed by deposits and the flow of water from the uplands is thereby interfered with, and as a result a marsh has formed on the west side of the main road which is objected to by the residents. Heretofore the owners having property abutting the stream have cleaned the outlet from time to time after heavy storms, so that there has been no cause for complaint, but on account of neglect during the past year the present conditions have arisen. It is very necessary that the stream should be kept open, as it is one of the natural drainage outlets for the town, and overflowing of lands with stagnant water is liable to produce unhealthful conditions.

While at Waretown I also had an interview with the assessor of the township and ascertained that the board had regular meetings twice in each year and that returns of births, marriages and deaths were satisfactorily made, and also that physicians were prompt in reporting communicable diseases, and there were no cases of this character at present. The following letter was addressed to Mr. Howard:

## OCEAN COUNTY—Continued.

"Mr. J. G. Howard, Waretown, N. J.:

"DEAR SIR—In fulfillment of my promise made to you at the time of my visit, I have called upon Mr. Valentine at Woodbridge and he expressed himself as willing to do all that he could to assist you in having the stream cleared so as to allow the free flow of water into the bay, and would write at once to parties in Waretown who would look after the matter for him. Will you kindly inform me at some future date as to what has been done?"

## PLUMSTEAD TOWNSHIP.

MEMBERS AND OFFICERS—Geo. W. Ivins, New Egypt; Dayton Hopkins, Hornerstown; Elmer Cowperthwaite, New Egypt; Chas. E. Woodward, M.D., New Egypt; Daniel W. Bussum, Secretary and Assessor, New Egypt.

New Egypt has a population of 600 and Archertown 100. Total number of dwellings, 350. Births reported, 33; deaths, 30; deaths under one year, 7. Three slaughter-houses located at New Egypt are managed by B. P. Bussom, Walter Cottrell and A. Errickson. One nuisance was abated. Two meetings were held.

## BOROUGH OF SEA SIDE PARK.

The total number of permanent residents, 20. Total number of dwellings, 40. About 20 houses are connected with the public water-supply, which is obtained from artesian wells. About 15 of these houses are also connected with the sewer which extends six or seven blocks from the outlet. No board of health has been organized.

## STAFFORD TOWNSHIP.

MEMBERS AND OFFICERS—John L. Lane, M.D., Manahawkin; Chas. H. Cranmer, Manahawkin; Thomas H. Letts, Manahawkin; Geo. A. Cranmer, Cedar Run; John B. Courtney, Manahawkin.

Estimated number of dwellings in township is 225. Cedar Run has a population of 200, Meyeta about the same, and Cedar Grove about 50. Births reported, 14; deaths, 10; deaths under one year, 1. Three cases of scarlet fever occurred. A slaughter-house, man-

OCEAN COUNTY—*Continued.*

aged by Geo. P. Brown, is located in Manahawkin. One meeting was held.

## UNION TOWNSHIP.

MEMBERS AND OFFICERS—E. Bennett, M.D., Joseph A. Pharo, Geo. H. Van Note, John R. King; E. R. Wills, Secretary, all of Barnegat; T. R. Brown, Attorney, Toms River.

Number of dwellings in township, about 200. Births reported, 16; deaths, 10. Meetings were held.

## PASSAIC COUNTY.

## ACQUACKANONK TOWNSHIP.

MEMBERS AND OFFICERS—Wm. H. Conradi, Hiram Keasler, Nicholas Aleya, Joseph P. Hamil, Wm. Hoffmeister; Richard Berry, Secretary and Assessor, Clifton; Wm. B. Gourley, Attorney, Paterson.

Total number of dwellings in township, 720. Births reported, 29; deaths, 22; deaths under 1 year, 6. Five cases of diphtheria were reported. Forty houses are connected with the public water-supply. One meeting was held.

## LITTLE FALLS TOWNSHIP.

MEMBERS AND OFFICERS—H. L. Crane, G. W. McKennon, C. H. Booth, J. H. Francisco, N. A. Cole; R. W. Furbeck, Assessor and Secretary. All of Little Falls.

Little Falls has 1,000 inhabitants; Singac has 300. Total number of dwellings, 800. One slaughter-house, located at Peckman River, is managed by Fritz Sengling. Twelve nuisances were abated. Twelve meetings were held.

PASSAIC COUNTY—*Continued.*

## MANCHESTER TOWNSHIP.

MEMBERS AND OFFICERS—G. M. Daniels, Haledon; P. Bridge, Haledon; J. Graham, Haledon; A. Branch, Haledon; F. Breem, Haledon; G. Planten, Secretary and Assessor, Paterson; S. Uter, M.D., Inspector, Hawthorne; L. F. Tynan, Attorney, Paterson.

Haledon has about 1,200 population; Prospect Park about 1,000; total number of dwellings, 585. There are two slaughter-houses in the township as follows: One conducted by Wm. Steegenga, at 288 North Sixth street, and one by Richard Vanderwall, at 286 North Sixth street. Thirty complaints were received and all nuisances which on investigation were found to exist were abated. Thirteen meetings were held.

## PASSAIC CITY.

MEMBERS AND OFFICERS—A. Ward Van Riper, J. J. Radcliffe, P. J. Delaney, W. H. Gilmore, F. R. Low; C. E. Denholm, Secretary; Albert H. Smith, Inspector; Wm. B. Davidson, Plumbing Inspector; I. Payne Lowe, M. D., Veterinarian; Walter Kip, Attorney.

Twenty-one cases of diphtheria, 48 of scarlet fever, and 19 of typhoid fever were reported. About 2,500 dwellings are connected with the public water-supply, the average daily quantity pumped being 875,000 gallons. About two miles of mains have been added to the water system. There are about 26 miles of sewers, and 1,695 dwellings are connected with the system. Connections to sewers during the past year, 164. Garbage, ashes and rubbish are collected under contract at an annual cost of \$3,400. Five carts and eight men are employed in this service, and the refuse material is disposed of by dumping upon the ground. Excreta is collected by licensed scavengers. About 350 nuisances were abated, nine prosecutions being necessary to secure compliance with the ordinances. Fifteen meetings were held by the board.

## CITY OF PATERSON.

MEMBERS AND OFFICERS—Theo. Y. Kinne, M. D., Andrew F. McBride, M. D., Thos. L. Paton, M. D.; John L. Leal, M. D., Health Officer; Thos. M. Ryle, John T. Pollitt, Isaac H. Voorhis; James W. Smith, M. D., Assistant Inspector;

PASSAIC COUNTY—*Continued.*

James P. McNair, Secretary; Wm. H. McDonald, Plumbing Inspector; James Fitzpatrick, Sanitary Inspector; Foster W. Freeman, Counsel.

Number of births, 2,083; number of deaths, 1,722; number of deaths under 1 year, 489. Communicable diseases reported as follows: Diphtheria, 410 cases, with 66 deaths; scarlet fever, 207 cases, with 10 deaths; typhoid fever, 276 cases, with 38 deaths; varioloid, 1 case. The average daily quantity of water used in the city during the year was 20,000,000 gallons. Number of dwellings connected with the water-mains is about 9,500. Extensive improvements have been made to the water-plant during the past year. About sixty-seven miles of sewers are in use in the city and 542 premises are connected with the same.

Garbage is collected, under contract, twice in each week in summer and once each week in winter. Four vehicles and six men are employed in this service. Garbage is disposed of by a modification of the Merz reduction system. Total quantity of garbage removed during the year, 4,443 tons. Rubbish and ashes are disposed of by dumping on low-lying lands. Five hundred and seventy-one complaints were investigated during the year, and 554 nuisances were abated, suits being instituted for the penalty in 22 of these cases. Offensive trades are conducted under special permits granted by the board of health, seven of which have been issued during the year. Fifteen meetings of the board were held.

## POMPTON TOWNSHIP.

MEMBERS AND OFFICERS—John F. Sisco, Butler; D. A. Wheeler, Erskine; J. E. Sloat, Midvale; D. N. Shippey, M.D., Wanaque; J. V. Beam, Assessor and Secretary.

## SALEM COUNTY.

## ALLOWAY TOWNSHIP.

MEMBERS AND OFFICERS—John D. Drummond, Alloway; Joseph G. Curlin, Alloway; John Van Leer, Friesburg; Warren L. Ewan, M. D., Alloway; W. E. Simpkins, Assessor and Secretary, Yorktown.

Alloway has 450 inhabitants; Aldene, Penton, Friesburg and Cohansey each has about 100. Number of dwellings in the township, 344. Births reported, 18; deaths, 34. Seven cases of diphtheria and two of typhoid fever occurred. Three slaughter-houses are located in the township, and complaints have been received, showing that these establishments create a nuisance. One meeting was held.

## LOWER ALLOWAY CREEK TOWNSHIP.

MEMBERS AND OFFICERS—W. W. Patrick, Hancock's Bridge; Edward F. Brown, Canton; Isaac Sinnick, Canton; Richard Grier, Secretary and Assessor, Salem.

## LOWER PENNS NECK TOWNSHIP.

MEMBERS AND OFFICERS—R. D. Batten, Pennsville; D. Dixon, Salem; H. Jaquett, Pennsville; W. H. James, M. D., Pennsville; J. G. Mitchell, Assessor, Pennsville; Wm. Hannah, Secretary, Pennsville; John Callahan, Inspector, Pennsville; E. W. Wheaton, Attorney, Pennsville.

The population of Pennsville is about 600. There are 500 dwellings in the township. Births reported, 11; deaths reported, 12. One meeting was held.

## MANNINGTON TOWNSHIP.

MEMBERS AND OFFICERS—S. Preston Carpenter, Samuel Lippincott, Aaron E. Fogg; Jonathan B. Grier, Assessor and Secretary. All of Salem.

Claysville has about 200 inhabitants and Marlboro has about 125. It is estimated that not more than twenty per cent. of the births which occur in the township are reported, as the law requires. Nine cases of diphtheria, with four deaths, and four cases of typhoid fever and two deaths occurred during the year. The typhoid cases were caused by polluted well-water.



## SALEM COUNTY—Continued.

## OLDMANS TOWNSHIP.

MEMBERS AND OFFICERS—Joseph Roberts, Auburn; Wesley Hewitt, Pedricktown; Henry Reymer, Pedricktown; Henry T. Johnson, Pedricktown; Levi C. Justice, Secretary and Assessor, Pedricktown.

Pedricktown has 450 inhabitants and Auburn 150. Total number of dwellings, 304. Births reported, 24; deaths, 13; deaths under 1 year, 2. One case of diphtheria and one of typhoid fever occurred. A slaughter-house, managed by Tull & Cawley, is located near Pedricktown. Two meetings were held.

## BOROUGH OF PENNSGROVE.

MEMBERS AND OFFICERS—Henry M. Flanagan, M. D., Walter Springer, Richard F. Shannon, Warren English; Harry E. Crompton, Secretary.

Two cases of diphtheria were reported. One nuisance relating to the disposal of waste fluids was abated by the board at a cost of \$30. Several minor complaints were received, improvement being secured in each case.

## CITY OF SALEM.

MEMBERS AND OFFICERS—Lewis Hoetzel, Thomas Hewes, J. F. Sinnickson, Lewis Pancoast; Clinton Bowen, Secretary; A. T. Walton, Inspector.

Total number of dwellings, 1,266. Births reported, 48; deaths, 134; deaths under 1 year, 19. The following cases of communicable diseases occurred: Diphtheria, 88; membranous croup, 2; scarlet fever, 3; typhoid fever, 1. About 600 dwellings are connected with the public water-works. The daily consumption of water is 300,000 gallons. Three miles of sewers are in use. There are 300 house connections. There is no systematic method for the removal of garbage and other refuse materials. One hundred and fifteen complaints were investigated and 95 nuisances. Ten meetings were held.

## SALEM COUNTY—Continued.

## QUINTON TOWNSHIP.

MEMBERS AND OFFICERS—John Touser, Salem; Watson Davis, Shiloh; W. T. Good, M. D., Quinton; Josiah T. Harris, Assessor, Quinton; Chas. H. Fox, Secretary, Alloway.

Quinton has a population of 500. Number of dwellings in township, 210. Births reported, 25; deaths, 15; deaths under one year, 2. One case of scarlet fever and three of typhoid were reported. One slaughter-house, managed by Hires & Co., is located in the township. Two meetings were held.

## UPPER PENNS NECK TOWNSHIP.

MEMBERS AND OFFICERS—John M. Bevis, Joseph E. Clark, James Hutchinson, John M. Summerill, M. D.; Geo. W. Hewitt, Assessor and Secretary. All of Penns Neck.

Three cases of typhoid fever were reported. Two meetings were held.

## UPPER PITTSGROVE TOWNSHIP.

MEMBERS AND OFFICERS—Israel Newkirk, Elmer; John D. Schade, Pittsgrove; Henry Coombs, Elmer; G. W. H. Fitch, M. D., Daretown; Joseph N. Gray, Assessor, Pittsgrove.

Number of dwellings in township, about 300. Births reported, 26; deaths, 27. One slaughter-house is located in the township at Monroeville, managed by J. McFarland. One meeting was held.

## BOROUGH OF WOODSTOWN.

MEMBERS AND OFFICERS—Edgar C. Moore, D. W. C. Hinchman, J. G. Borton, Secretary; D. F. Davis.

There are 383 dwellings in the borough. Births reported, 36; deaths, 40; deaths under one year, 6. One case of typhoid fever occurred. Two meetings were held.

## SOMERSET COUNTY.

## BEDMINSTER TOWNSHIP.

MEMBERS AND OFFICERS—R. E. Duyckinck, Lamington; R. B. Nevins, Bedminster; W. P. Sutphen, Bedminster; J. B. Beekman, M.D., Pluckamin; H. L. Kennedy, Assessor and Secretary, Gladstone; E. T. Farrow, Inspector, Peapack.

Two slaughter-houses are located in the township, as follows: One owned by James Woods in Pluckamin, and one owned by Charles Ludlow in Peapack. Three nuisances were investigated, all of which were abated. One meeting of the board was held.

## BERNARDS TOWNSHIP.

MEMBERS AND OFFICERS—Henry Scheurman, Basking Ridge; E. H. Schley, Bernardsville; John Layton, Liberty Corner; Fred Sutphin, Bernardsville; L. H. Bowers, Assessor, Basking Ridge.

The following hamlets are located in this township: Basking Ridge, population about 500; Bernardsville, population about 500; Liberty Corner, population about 150. Total number dwellings in township 500. Number of births, 29; number of deaths, 33; number of deaths under one year, 6.

Communicable diseases were reported as follows: Membranous croup, 2; scarlet fever 3; typhoid fever, 1. The case of typhoid fever is believed to have originated outside of the township.

Two slaughter-houses are located in the township, as follows: One owned by David Lewis & Son, situated  $1\frac{1}{2}$  miles from Basking Ridge; one owned by Mr. Bailey, 1 mile from Basking Ridge.

Five nuisances were reported to the board and abatement was secured in each case. Two meetings were held during the year.

## BOROUGH OF BOUND BROOK.

MEMBERS AND OFFICERS—John B. Coddington, C. R. P. Fisher, M. D., N. E. Nesimer, W. S. Negus, Secretary; Chas. McNabb, Inspector.

Three hundred and seventy-five dwellings in the borough. Number of births, 60; number of deaths, 32; number of deaths under 1

## SOMERSET COUNTY—Continued.

year, 12. Communicable diseases were reported as follows: Diphtheria, 15; deaths, 5; scarlet fever, 14. Sixteen nuisances were inspected and improvement of conditions was secured in each case. Sixteen meetings were held.

## BRANCHBURG TOWNSHIP.

MEMBERS AND OFFICERS—H. S. Van Fleet, Readington; John T. Engle, North Branch Station; W. H. Dolliver, Neshanic Station; Adonis Nelson, M. D., Neshanic Station; L. T. Schenck, Assessor and Secretary, Readington.

There are about 238 dwellings in the township.

## BRIDGEWATER TOWNSHIP.

MEMBERS AND OFFICERS—Peter Gulick, Raritan; John H. Bartle, Martinville; James Ten Eyck, Somerville; A. L. Stillwell, M. D., Somerville; Chas. L. Voorhees, Secretary and Assessor, Somerville; A. A. Clark, Attorney, Somerville.

Nine cases of scarlet fever were reported during the year. Three complaints were investigated. Two nuisances were abated. Two meetings were held by the board.

## HILLSBOROUGH TOWNSHIP.

MEMBERS AND OFFICERS—John French, Millstone; Joseph Van Cleef, Hillsborough, Assessor; Peter T. Huff, Montgomery; Spencer Van Cleef, Raritan; W. H. Merrell, M.D., South Branch.

The following hamlets are located in the township: South Branch, population 100; Flagtown, population 75; Roycefield, population, 30; Neshanic, population, 100. Three cases of diphtheria were reported. One slaughter-house, managed by Dennis Ryneanson, is located near Neshanic.

## SOMERSET COUNTY—Continued.

## MONTGOMERY TOWNSHIP.

MEMBERS AND OFFICERS—E. C. Taggart, Griggstown; J. H. Stout, Stoutsburg; Garret Durling, Harlingen; A. B. Mosher, M.D., Griggstown; John S. Hoagland, Secretary and Assessor, Griggstown; James Griggs, Attorney, Somerville.

Harlingen has about 100 population; Blawenburg, 50, and Stoutsburg, 25. Number of dwellings in township is about 300. Only 8 births were reported during the year; 14 deaths occurred, one of which was under one year. One slaughter-house is located at Harlingen, managed by Edward W. Cain. One nuisance was abated by the board. Two meetings were held.

## BOROUGH OF NORTH PLAINFIELD.

MEMBERS AND OFFICERS—Andrew Love, D. C. Adams, M.D., L. E. Barcalow, N. B. Smalley; W. E. Honeyman, Secretary; Wm. N. Pangborn, Inspector; Chas. A. Reed, Attorney.

Total number of dwellings about 1,500. Births reported, 89; deaths reported, 68; deaths under one year, 16. Two cases of diphtheria, 15 of scarlet fever and one of typhoid fever were reported. Three hundred and eleven complaints were received and all nuisances found to exist were abated. Four prosecutions were instituted and in each case the board was sustained by the court and a penalty was imposed. Ten meetings were held by the board.

## NORTH PLAINFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Theodore Luerssen, Plainfield; Wm. Demler, Plainfield; Lofters Hollingsworthe, Scotch Plains; Augustus Molner, Plainfield; Wm. H. Smith, Plainfield; Thos. H. Taylor, Plainfield; Chas. Sebring, Bound Brook; Robert M. Clark, Secretary, Plainfield; Geo. M. Stewart, Plainfield.

Total number of dwellings, 222. Only one birth was reported during the year, showing that the law relating to the returns of vital statistics is not complied with in this district. Three nuisances were abated. Two meetings were held.

## SOMERSET COUNTY—Continued.

## BOROUGH OF RARITAN.

MEMBERS AND OFFICERS—Rev. Wm. De Hart, J. Hecht, M. D., John W. Weaver, Jas. Cooper; Wm. Killiger, Secretary; Albert Conyne.

There are about 400 dwellings in the borough. Number of births, 24; deaths, 34; deaths under one year, 13. Eleven cases of scarlet fever and one of typhoid fever occurred. About 100 premises are connected with the public water-works. About 200 dwellings have sewer connections. Garbage, ashes and rubbish are collected by private arrangement. Forty nuisances were abated. Fourteen meetings were held.

## TOWN OF SOMERVILLE.

MEMBERS AND OFFICERS—Aaron L. Stillwell, M. D., Lewis T. Reed, J. B. Betts, L. R. Vreedenburg, Wm. R. Sutphen, Secretary; Theo. Barcalow, James L. Griggs, Attorney.

Number of dwellings in the town, 975. Three cases of diphtheria, 11 of scarlet fever and 3 of typhoid fever were reported. The average daily quantity of water pumped during the year was 900,000 gallons, supplying 680 dwellings. Eleven miles of sewers are in use in the town, and 240 premises have sewer connections, 102 premises having been connected during the past year. Fifty-six nuisances were abated. One suit was brought for violation of the sanitary code and the penalty of \$20 was inflicted. Monthly meetings were held. The following report was filed in the office of the State board of health April 27, 1898:

The town of Somerville is located on the Central Railroad of New Jersey, in Somerset county, and was incorporated four years ago. The board of health, of which Wm. Sutphin is the secretary, was duly appointed at that time. A sanitary code, with the recommendation as to plumbing, was passed in 1884. The board holds regular monthly meetings, employs an inspector, and is making progress. Reports of communicable disease are promptly returned by physicians, and definite action is taken by the board to prevent the extension of such outbreaks. Reports of births, marriages and deaths are received in full. There is some difficulty, however, in securing reports of births from physicians.

During the past year the sewer system has been very much extended, and a large area of the town which formerly was a source of a great deal of trouble

SOMERSET COUNTY—*Continued.*

to the local board has been entirely relieved. There is no systematic house-to-house inspection, but the local board attends to every case of nuisance reported. The water-supply is obtained from the Raritan river. (For a full description of this plant see the report of the State board for 1896.) There are but two public institutions in Somerville, one being the almshouse, which is located outside of the town limits, and the other is the Somerset county jail, located in Court-house square.

The jail is built of brick, is fairly well lighted as the cells are opposite the windows. Each cell is provided with two ventilators which are designed to carry the foul air to the roof. Corridors are heated by stoves. The water-supply for the jail is the same as for the city. The cells were carefully examined and with one exception were in good order. The corridors had been recently white-washed and there was evidence of an attempt at cleanliness. Since the last inspection the plumbing of the jail has been somewhat altered. The water-flush for the closets is not sufficient and the bathing facilities are entirely inadequate. Another objection to present methods is the use of straw mattresses in the cells. These should be done away with at once as it is impossible to keep them in a clean condition. Some form of a canvas mattress or cot should be used, and these should be washed each week. With these suggestions carried out the jail could be kept in good sanitary condition with little difficulty.

## WARREN TOWNSHIP.

MEMBERS AND OFFICERS—Wm. H. Rogers, Plainfield; Thomas C. Bird, Gallia Henry S. Williams, Warrenville; Peter Neumiller, Assessor & Secretary, Warrenville.

Number of dwellings in township, 240. One case of typhoid fever was reported. Two nuisances were abated and two meetings were held.

## SUSSEX COUNTY.

## ANDOVER TOWNSHIP.

MEMBERS AND OFFICERS—Wm. M. Slater, Newton; B. K. Stiff, Andover; W. S. Vansyckle, Andover; J. C. Clark, M. D., Andover; Emery Bonker, Assessor and Secretary.

There are 240 dwellings in the township. One case of diphtheria was reported, terminating fatally. There is one slaughter-house in the

SUSSEX COUNTY—*Continued.*

township, owned by Pierson H. Cooper, situated one mile from the village of Andover. Two nuisances were investigated, both of which were abated. One case of actinomycosis was reported to the board and the animal was promptly killed. Two meetings were held during the year.

## BYRAM TOWNSHIP.

MEMBERS AND OFFICERS—Samuel Peterson, Stanhope; R. S. Slaght, Stanhope; Theodore Conn, Andover; C. K. Davison, M.D., Stanhope; E. O. Valentine, Secretary and Assessor, Stanhope.

Births reported, 23; deaths, 18; deaths under 1 year, 5. One slaughter-house is located near Stanhope. One nuisance was abated, and one meeting was held.

## GREEN TOWNSHIP.

MEMBERS AND OFFICERS—J. J. Decker, Andover; G. M. Runion, Huntsville; A. Snook, Freedom; Dr. Rosenberg, Andover; M. N. Nirthrup, Assessor and Secretary, Andover.

Hamlets are located in this township as follows: Huntsburg, population about 25; Greenville, population about 30; Tranquillity, population about 40. Number of dwellings in township, about 139. Births reported, 8; deaths reported, 4. Two slaughter-houses are in the township, as follows: F. P. Hawk, Huntsville; G. W. Lewis, Tranquillity. Two nuisances were investigated and one was abated. A carcass of cow beef affected with tuberculosis was shipped by F. P. Hawk to New York city and was there seized and condemned.

## HAMPTON TOWNSHIP.

MEMBERS AND OFFICERS—John H. Williams, Baleville; Alonzo Emmans, Halsey; Frank Emmans, Newton; Shepherd Voorhees, M.D., Newton; John W. Thompson, Blair; Lewis Van Blarcom, Attorney, Newton.

Total number of dwellings about 167. One case of diphtheria was reported. One meeting was held by the board.

## SUSSEX COUNTY—Continued.

## HARDYSTON TOWNSHIP.

MEMBERS AND OFFICERS—John P. Wilson, Hamburg; Caleb Farber, Hamburg; Smith Simpson, Assessor, Hamburg; Wm. B. Pollard, Secretary, Franklin Furnace.

Franklin Furnace has 500 inhabitants, Hamburg 400, Stockholm 200. Births reported, 6; deaths, 22; 1 death under one year. Two meetings were held.

## LAFAYETTE TOWNSHIP.

MEMBERS AND OFFICERS—Edward Mabee, John D. Ackerman, Martin Mabee, John Demerest, Assessor and Secretary. All of Lafayette.

No meetings were held by the board.

## MONTAGUE TOWNSHIP.

MEMBERS AND OFFICERS—Loren T. Cole, Tri-States, N. Y.; Jacob Nearpass, Tri-States, N. Y.; Joseph S. Hornbeck, Montague; Geo. N. Cole, Secretary and Assessor, Montague.

No meetings were held.

## NEWTON TOWNSHIP.

MEMBERS AND OFFICERS—Shepard Voorhees, M.D., Lewis J. Martin, James Northrup, F. D. Whyne; George Harden, Secretary; I. L. Halleck, Inspector.

One case of diphtheria was reported and 4 cases of typhoid fever. About 100,000 gallons of water are used daily, and 460 dwellings are connected with the water-mains. Eight hundred feet of water-pipe have been laid during the past year. Ten meetings were held.

## STILLWATER TOWNSHIP.

MEMBERS AND OFFICERS—John A. Wintermute, Middleville; Charles R. Westbrook, Stillwater; Wm. E. Titman, Swartswood; Aaron C. Huff, Secretary, Middleville; Lewis J. Martin, Attorney, Newton; A. W. Cassady, M.D., Stillwater.

## SUSSEX COUNTY—Continued.

Stillwater has a population of 200, Middleville of 50, and Swartswood of 150. Total number of dwellings in township, 350. Births reported, 15; deaths, 10; deaths under one year, 1. Four meetings were held.

## VERNON TOWNSHIP.

MEMBERS AND OFFICERS—Daniel Forgerson, Kampe; James Stidworthy, Vernon; R. Rhodes, Glenwood; Abram Van Winkle, Secretary and Assessor, Glenwood.

Vernon and Glenwood have about 150 inhabitants each, McAfee has 250 and Owen 100. Number of dwellings in township, about 500. Wm. Forshee conducts a slaughter-house at Glenwood. No meetings were held.

## WALPACK TOWNSHIP.

MEMBERS AND OFFICERS—N. Van Auken, Flatbrookville; Philip S. Rosenkraut, Flatbrookville; Elmer T. Roe, Walpack Centre; C. D. Gunn.

No meeting was held during the year.

## WANTAGE TOWNSHIP.

MEMBERS AND OFFICERS—Brice Roy, Deckertown; Irving Brink, Coleville; B. W. Furgerson, M. D., Beemerville; Emmet Wilson, Secretary, Deckertown; S. M. Parcel, Assessor, Deckertown; L. J. Martin, Attorney, Newton.

Coleville has 100 inhabitants, Libertyville 75, and Beemerville, 40. One slaughter-house, near Deckertown, is managed by Moses Ayers. One meeting was held.

## UNION COUNTY.

## CLARK TOWNSHIP.

MEMBERS AND OFFICERS—Benj. King, Picton; Edward Mays, Rahway; Isaac Terhune, Rahway; W. E. Cladek, Rahway; F. B. Bullman, Assessor and Secretary, Picton; C. D. Ward, Attorney, Rahway.

There are about seventy dwellings in the township. Two births were reported and three deaths. One meeting was held.

## CRANFORD TOWNSHIP.

MEMBERS AND OFFICERS—Jasper C. Hunt, Nathaniel R. Foster, Alfred McIntyre, Crossman Lyon, Joseph N. Severance, Jos. K. McConnell, M.D.; E. S. Crane, Assessor and Secretary; F. C. Marsh, Attorney, Elizabeth.

There are about 500 dwellings in the township. Two cases of diphtheria and one of scarlet fever were reported.

The public water-supply is obtained from artesian wells at Netherwood. Seven miles of sewers, having 221 house connections, are in use. Eighteen houses have been connected during past year.

The removal of refuse is performed by voluntary service.

Three meetings were held by the board.

Pollution of the Rahway river has been complained of by the residents of Cranford, and their representative has been advised to cooperate in an application to the legislature for more definite authority to control the defilement of the rivers of the State.

## CITY OF ELIZABETH.

MEMBERS AND OFFICERS—John W. Whelan, N. L. Wilson, M. D., V. Mravlag, M. D., S. T. Quinn, M. D., John J. Donahue, James J. Manning, Louis J. Richards, Inspector; James J. Manning, Secretary; James J. Connelly, Attorney.

Births reported, 1,072; deaths reported, 808; deaths under 1 year, 270. Communicable diseases were reported as follows: Diphtheria, 194, with 25 deaths; scarlet fever, 225, with 6 deaths; typhoid fever, 12, with 2 deaths. About 46 miles of sewers are at present in use in the city and 347 premises were connected with the same during the

## UNION COUNTY—Continued.

past year. Garbage is collected under contract, the cost for the past year having been six thousand dollars. It is collected and removed two and three times each week, according to the location of premises. It is stored in wooden receptacles, collected in covered wagons, and dumped on the salt meadows. There is no separation of garbage, ashes and rubbish. Night-soil is treated with acid and converted into fertilizer. 516 complaints were investigated and 439 nuisances were abated. Suit was brought against an undertaker for conveying in a public conveyance the dead body of a child who had died of diphtheria, and judgment was rendered in favor of the board of health. An isolation hospital has been provided for small-pox cases, but no facilities exist for the removal and treatment of other contagious diseases. Six meetings were held by the board.

## BOROUGH OF FANWOOD.

MEMBERS AND OFFICERS—F. W. Westcott, M.D., Wm. Gibbs, Edward Austin; Geo. F. Carter, Secretary; E. S. Hall, Inspector.

Total number of dwellings, 72. Births reported, 4; deaths reported, 1. One case of scarlet fever occurred during the year. About 45 dwellings are connected with the public water-supply. About 800 feet of water-mains have been laid since the last report. Garbage is collected by volunteer collectors. Rubbish and ashes are used for filling sunken lots. About 25 horse-stables are located in the borough. Eight meetings were held.

## FANWOOD TOWNSHIP.

MEMBERS AND OFFICERS—Thomas J. Nicholl, Scotch Plains; Wm. H. Terry, Plainfield; Theodore Bruckman, Scotch Plains; F. W. Westcott, M.D., Inspector, Fanwood; Chas. H. French, Assessor and Secretary, Westfield; W. R. Coddington, Attorney, Plainfield.

Total number of dwellings in township about 240. Four certificates of birth were received. Deaths reported, 9. Number under one year, 4. Four cases of scarlet fever were reported. Seven meetings were held.

## UNION COUNTY—Continued.

## LINDEN TOWNSHIP.

MEMBERS AND OFFICERS—S. B. Redmond, Linden; John T. Winans, Tremly; W. E. Mitchell, Linden; J. Rose, Linden; H. P. Hough, M. D., Rahway; Asa Collins, Assessor and Secretary, Linden; M. C. Lowden, Inspector, Linden.

One case of diphtheria and one of scarlet fever were reported. Five meetings were held by the board.

## NEW PROVIDENCE TOWNSHIP.

MEMBERS AND OFFICERS—Wm. N. Dean, Murray Hill; John M. Badgley, New Providence; Kasper Fuchs, Berkley Heights; A. M. Cory, Secretary and Assessor, New Providence.

Births reported, 12; deaths reported, 13. One slaughter-house is located in the township, at West Summit, managed by E. R. Morehouse. Three nuisances were abated. Two meetings were held.

## CITY OF PLAINFIELD.

MEMBERS AND OFFICERS—Henry B. Newhall, B. Van D. Hedges, M. D., J. Augustus Smith, A. J. Gavett; Wm. H. Murray, M. D., Secretary; Wm. Addis, Inspector; Craig A. Marsh, Attorney.

There are 2,790 dwellings in the city. Births reported for the year ending June 3d, 269; deaths, 212; deaths under one year, 48. Communicable diseases were reported as follows: Diphtheria 33, scarlet fever 27, and typhoid fever 13. The average daily quantity of water used during the year is about 1,000,000 gallons, and the number of dwellings connected with the water-mains is 1,800.

Twenty-four miles of sewers are now in use in the city, and 1,225 premises have sewer connections, 210 of which were connected during the past year. Garbage is collected by a private arrangement, there being no contract with the city for the removal of refuse materials.

Two suits were instituted for the collection of penalties in cases of failure to abate nuisances. Eighteen meetings were held during the year.

## UNION COUNTY—Continued.

## CITY OF RAHWAY.

MEMBERS AND OFFICERS—Chas. B. Holmes, M. D., H. Page Hough, M. D., Jno. W. Randolph, M. D., H. B. Rollinson; D. K. Ryno, Secretary; Fred J. Mix Inspector.

Births reported, 44; deaths, 118; deaths under one year, 25. Communicable diseases were reported as follows: Diphtheria, 6; scarlet fever, 7; typhoid fever, 4. About 1,500,000 gallons of water are used daily, there being about nine hundred dwellings connected with the supply. Fifteen hundred feet of six-inch pipe were laid during the past year. Twenty-eight premises have been connected with the sewer system during the year. Refuse materials are collected by private arrangement, disposal being by dumping upon the surface of the ground on the banks of the river. About 75 complaints were investigated and all nuisances found were abated. Four meetings were held by the board.

## SPRINGFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Lewis T. Terry, A. P. Carter, Abner Stiles; J. J. Hoff, Secretary; T. W. Harris, M. D., Inspector.

Births reported, 16; deaths, 9. Five cases of diphtheria and two of typhoid fever were reported. Three nuisances were abated. Four meetings were held.

## SUMMIT TOWNSHIP.

MEMBERS AND OFFICERS—Geo. Wilcox, Chas. F. Wood, Geo. C. Hand, Wm. H. Risk; James W. Reeve, Assessor and Secretary; Wm. McMane, Inspector; C. N. Williams, Attorney.

Number of dwellings in township, about 750. Births reported, 88; deaths, 68; deaths under one year, 14. Two cases of diphtheria, 5 cases of scarlet fever and 6 of typhoid fever were reported. Twelve meetings were held.

## UNION TOWNSHIP.

MEMBERS AND OFFICERS—Daniel H. Beach, Union; John H. Doremus, Lyons Farms; Wm. A. Bainbridge, Roselle; D. H. Sayre, Union; N. C. J. English, Attorney, Elizabeth.

UNION COUNTY—*Continued.*

Lyons Farms has about 600 inhabitants; Vauxhall, 300; Salem, 400; Aldene, 200; Lorraine, 300, and New Orange 300. Dwellings in township, about 3,000. One case of diphtheria and 17 of scarlet fever were reported. Roselle, Aldene and Lorraine are furnished with public water supplies, obtained from the Union Water Company. Slaughter-houses are conducted as follows: One by John C. Bender, near Lorraine, and one by Jacob Glasier, on North Avenue. Three complaints were investigated and two were abated. Six meetings were held.

## WESTFIELD TOWNSHIP.

MEMBERS AND OFFICERS—Geo. H. Embree, Christopher W. Harden, J. Austin Dennis, Joseph B. Harrison, M. D.; J. M. C. Marsh, Secretary and Assessor.

Total number of dwellings in township about 800. Three cases of diphtheria, six of scarlet fever and two of small-pox occurred. Four hundred and eight dwellings are connected with the public water-mains. Twelve and one half miles of sewers are in use, there being 408 premises connected with the sewer system, 186 of which were connected during the past year. Numerous complaints were investigated and several nuisances were abated. Twelve meetings were held.

## WARREN COUNTY.

## ALLAMUCHY TOWNSHIP.

MEMBERS AND OFFICERS—Wm. H. Young, Hackettstown; T. G. Dunlop, Allamuchy; P. G. Hawk, Allamuchy; John Holler, Assessor, Tranquillity; Benj. A. Hendershot, Allamuchy, Secretary; Wm. H. Young, Inspector.

The largest hamlet in the township is Allamuchy, having an estimated population of 200. Total number of dwellings in township, 135. Number births, 9; deaths, 3; deaths under 1 year, 2. One slaughter-house is located in the township; name of the owner, Geo. W. Wilson. One meeting was held by the board.

WARREN COUNTY—*Continued.*

## BLAIRSTOWN TOWNSHIP.

MEMBERS AND OFFICERS—Abram S. Rice, Vail; Wm. C. Howell, Blairstown; Abram L. Smith, Vail; H. O. Carhart, M.D., Blairstown; W. S. Perry, Secretary and Assessor, Knowlton.

Blairstown has a population of about 600. Three cases of typhoid fever occurred and in each instance the disease was contracted outside of the township. Blairstown has a public water-supply which is obtained from an artesian well. Two slaughter-houses are located in Blairstown. Two meetings were held.

## FRELINGHUYSEN TOWNSHIP.

MEMBERS AND OFFICERS—Wm. Durling, Johnsonburg; Wm. Kerr, Marksboro; Geo. Armstrong, Marksboro; Frederick Rorback, M.D., Johnsonburg; W. H. Ackerson, Assessor and Secretary, Johnsonburg.

Johnsonburg has about 125 inhabitants and Marksboro 135. Total number of dwellings, 155. Births reported, 6; deaths, 4. The board of health has held four meetings.

## GREENWICH TOWNSHIP.

MEMBERS AND OFFICERS—George Hamlen, Stewartville; A. P. Kinney, Stewartville; N. A. Painter, Phillipsburg; F. W. Curtis, M.D., Stewartville; Wm. Sherrer, Secretary, Bloomsbury.

## TOWN OF HACKETTSTOWN.

MEMBERS AND OFFICERS—Jacob H. Beatty, James Tamblin, John S. Cook, M.D., Alvin C. VanSickle, M.D., Augustus W. Cutler, Richard G. Clark, Thomas Nolan; O. A. Mattison, Secretary; J. Milton Everett, Inspector.

Births reported, 42; deaths reported, 39; deaths under one year, 9. The following communicable diseases were reported: Diphtheria, 2; scarlet fever, 5. Seven meetings were held by the board.



## WARREN COUNTY—Continued.

## HARDWICK TOWNSHIP.

MEMBERS AND OFFICERS—James C. Teel, Blairstown; Wm. C. Wildrick, Marksboro; B. B. Linaberry, Blairstown; Philip S. Savercool, Assessor, Hardwick; P. W. Squier, Secretary and Township Clerk, Marksboro.

Number of dwellings in township about 114. Board of health is not organized. One slaughter-house, managed by Vanhorne & Walters, is located near Marksboro railroad station.

## HARMONY TOWNSHIP.

MEMBERS AND OFFICERS—Peter E. Cole, Montana; James E. Cruts, Harmony; Jacob W. Cline, Harmony; James D. Dewitt, M.D., Harmony; Cornelius Pittenger, Assessor and Secretary, Harmony; Nicholas Harris, Attorney, Belvidere.

The population of Harmony is about 60, and of Montana about 50. The population of the whole township is about 1,100. Number of dwellings in township, about 280. Births reported, 14; deaths reported, 9; deaths under one year, 1. One meeting was held.

## INDEPENDENCE TOWNSHIP.

MEMBERS AND OFFICERS—Abram Hance, Vienna; J. F. Boyd, Vienna; John Merrill, Danville; F. W. Haggerty, M.D., Vienna; W. J. Barker, Assessor, Vienna; James Fisher, Attorney, Hacketstown.

Number of births, 16; number of deaths, 9. No meetings were held.

## KNOWLTON TOWNSHIP.

MEMBERS AND OFFICERS—George Dewitt, Columbia; Lewis Brands, Polkville; P. B. Mericle, Hainesville; Wm. C. Allen, M.D., Delaware; Wm. E. Moore, Assessor and Secretary, Columbia.

Hamlets are located in the township as follows: Columbia, population about 150; Harrisburg, population about 100; Delaware, population about 150; Polkville, population about 50; Knowlton, 45; Warrington, population about 35.

## WARREN COUNTY—Continued.

Number of dwellings in township, 519; number births reported, 16; deaths, 19; under one year, 6. One nuisance was abated. One meeting was held by the board.

Dr. Wm. M. Baird, of Warrington, under date of August 29th, 1898, asks for information concerning the methods by which the nuisance created by the burning of lime near dwellings may be controlled. Following is the reply sent to his inquiry:

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

TRENTON, Sept. 1st, 1898.

Wm. M. Baird, M.D., Warrington, Warren County, N. J.:

DEAR DOCTOR—We are not aware that the legislature has given to local boards of health direct authority to deal with the pollution of the air which results from the burning of lime in built-up districts. The general statutes governing the abatement of nuisances are well adapted to the control of annoyances of this character, and a complaint by any citizen or group of citizens before the grand jury or to the chancellor, will start the wheels of justice much more certainly than to depend upon action under the health laws. For if the health board should undertake to suppress a nuisance of this nature it would be called upon to show that the public health had been injuriously affected by the gases and vapors which escape from the lime-kiln, while if the action is commenced under the general laws it is only necessary to show the gases and vapors are annoying, or that they are injurious to property.

Very respectfully,

HENRY MITCHELL,  
Secretary.

## CITY OF PHILLIPSBURG.

MEMBERS AND OFFICERS—E. C. Parker, Hiram Kugler, J. C. Perdoe, Dan McMullen, Inspector; Frank Kneidler, Secretary; W. H. Walters, Attorney.

Cases of diphtheria reported, 8; scarlet fever, 92, with 2 deaths; typhoid fever, 10 cases and 1 death. Twenty-five complaints were received and one prosecution was begun for failure to abate a nuisance.

## POHATCONG TOWNSHIP.

MEMBERS AND OFFICERS—Wm. Sherrer, Springtown; Thomas M. Crouse, Finesville; John H. Deemer, Riegelsville; Chas. H. Boyer, M. D., Riegelsville; Jacob Boyer, Assessor, Carpenterville; Wesley B. Laubach, Secretary, Finesville; J. W. Shultz, Attorney, Phillipsburg.

WARREN COUNTY—Continued.

Total number of dwellings, 387. One case of membranous croup and one of typhoid fever were reported. One slaughter-house is located in Springtown. Two meetings were held.

BOROUGH OF WASHINGTON.

MEMBERS AND OFFICERS—F. P. McKinstry, M.D., Geo. C. Campbell, John Hornbaker, A. J. Bigler, H. M. Cox, M.D., Theo. B. Daws; A. J. Craft, Secretary.

Number of dwellings in borough, 786. Births reported, 80; deaths, 51; deaths under 1 year, 9. Fifteen cases of scarlet fever occurred in the borough. About 400 dwellings are connected with the public water-supply. About two miles of sewers are in use. The number of premises having sewer connections is about 80. Three were connected during the past year.

Thirty-five complaints were investigated. Seven meetings were held

WASHINGTON TOWNSHIP.

MEMBERS AND OFFICERS—Robert Bowers, Washington; Wm. Cornell, New Hampton; Wm. H. Appar, Port Colden; Charles B. Smith, M. D., Washington; Samuel Rinehart, Secretary, Washington; David Bartron, Attorney, Washington.

Total number of dwellings, 350. One birth and three deaths were reported. One meeting was held.

List of Sanitary Districts, Showing Population and Names and Addresses of Officers.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1895.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Cities.</i>				
Aebury Park.....	Monmouth.....	3,761	D. C. Bowen.....	D. C. Bowen.
Atlantic City.....	Atlantic.....	18,329	Wm. B. Loudenslager.....	A. T. Glenn.
Bayonne.....	Hudson.....	19,856	F. F. Martinez, Jr.....	J. M. Snyder.
*Baldiere.....	Warren.....	1,834	B. F. Soby, M. D.....	B. F. Soby, M. D.
Beverly.....	Burlington.....	1,924	Dr. W. H. Shipp.....	C. D. Allen.
Bordentown.....	Burlington.....	4,185	Clarence M. DuBois.....	Frank L. Hewitt.
Bridgeton.....	Cumberland.....	13,292	Eugene D. Roberts.....	T. P. Varney.
*Burlington.....	Burlington.....	7,844	Lewis I. Stevens.....	H. F. Douglas.
Camden.....	Camden.....	63,467	Joseph V. Baker.....	Joseph V. Baker.
Cape May City.....	Cape May.....	2,491	V. P. Hoffman.....	V. P. Hoffman.
Dover.....	Morris.....	1,657	J. J. Manning.....	J. J. Manning.
Egg Harbor City.....	Atlantic.....	43,834	C. Lydecker, Jr.....	Robert Jamieson.
Elizabeth.....	Union.....	6,433	A. E. Conklin.....	Daniel F. Lane.
Englewood.....	Bergen.....	6,225	James Havron.....	J. M. Gamewell.
*Gloucester City.....	Bergen.....	7,282	D. W. Benjamin.....	James Havron.
Hackensack.....	Bergen.....	54,083	D. W. Reynolds.....	Jas. H. Reynolds.
Hoboken.....	Hudson.....	182,713	J. H. Hogate.....	L. H. Hogate.
Jersey City.....	Hudson.....	4,620	Richard P. Francis, M. D.....	Thos. Martin.
Lambertville.....	Hunterdon.....	10,465	D. D. Chandler.....	Louis J. Wendell.
Millville.....	Cumberland.....	11,763	Wm. Schlner.....	John L. Jaques.
*Morristown.....	Essex.....	10,290	C. E. Denholm.....	Daniel A. Dugan.
*New Brunswick.....	Essex.....	215,806	James P. McVair.....	Fred. A. Parker.
Orange.....	Middlesex.....	22,792	E. A. Hults, M. D.....	John T. Reilly.
Passaic City.....	Essex.....	13,894	Frank Kneeder.....	Frank Kneeder.
Paterson.....	Passaic.....	97,334	W. H. Murray, M. D.....	Andrew T. Gavett.
Ferth Amboy.....	Middlesex.....	13,030		
Phillipsburg.....	Warren.....	9,081		
Plainfield.....	Union.....	13,629		

## List of Sanitary Districts, Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1895.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Cities.—Cont.</i>				
Railway.....	Union.....	7,945	S. Rusling Ryno.....	S. Rusling Ryno.
Salem City.....	Salem.....	6,337	Clinton Bowen.....	Clinton Bowen.
Trenton.....	Mercer.....	62,518	William Cloke.....	C. Edward Murray.
Woodbury.....	Gloucester.....	3,853	T. E. Parker, M. D.....	D. T. Mathers.
<i>Boroughs.</i>				
Allendale.....	Bergen.....	539	Daniel Anthony.....	Daniel Anthony.
*Allentown.....	Monmouth.....	656	David M. Bunting.....	David M. Bunting.
*Anglesea.....	Cape May.....	247	E. M. Shivers.....	E. M. Shivers.
*Atlantic Highlands.....	Monmouth.....	1,716	E. H. Cook.....	Thos. J. Emery.
*Avalon.....	Cape May.....	106	Julius Foster.....	Chas. M. Preston.
*Avenel.....	Monmouth.....	201	Neil H. Miller.....	Leroy Sofield, Avon.
*Bay Head.....	Ocean.....	230	H. W. Vanderbeck.....	J. R. Hall.
*Beach Haven.....	Bergen.....	544	Peter F. Hopper.....	F. Howard Potts, Beach Haven.
*Bloomington.....	Somerset.....	2,030	W. S. Negus.....	J. Z. Demarest.
*Bogota.....	Bergen.....	707	Elmer C. Benner.....	H. M. Brinkerhoff.
*Bound Brook.....	Somerset.....	2,030	.....	Chas. McNabb.
*Bradley Beach.....	Monmouth.....	707	.....	Frank Herbert.
*Branchville.....	Sussex.....	.....	.....	D. J. Lawrence.
*Brigantine.....	Atlantic.....	.....	.....	J. J. Van Ouden.
*Brooklyne.....	Sussex.....	984	Thomas W. Biggs.....	Lafayette Miller.
*Caldwell.....	Essex.....	136	Herman Poth.....	M. K. Hopping.
*Cape May Point.....	Cape May.....	1,066	Jacob T. Humphries.....	J. T. Humphries.
*Carlstadt.....	Bergen.....	271	A. H. G. Buckingham, M. D.....	Geo. W. Duffield.
*Chatham.....	Morris.....	2,180	E. H. Nutt.....	Jean Henri Roas.
*Chester.....	Camden.....	.....	.....	.....
*Clayton.....	Gloucester.....	.....	.....	.....
*Cliffside Park.....	Bergen.....	592	.....	.....

## List of Sanitary Districts, Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1895.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Boroughs.—Con.</i>				
*Clinton.....	Hunterdon.....	895	C. Thomson.....	C. Thomson.
*Collingswood.....	Camden.....	450	Samuel Raff.....	A. H. K. Doughty.
*Deal.....	Monmouth.....	1,000	J. E. Pratt, M. D.....	E. D. Voorhis.
*Delford.....	Bergen.....	594	Geo. F. Carter.....	F. B. Whittle.
*Dunant.....	Middlesex.....	572	Wm. Leatherbury.....	M. G. Demarest, New Milford.
*Dunellen.....	Bergen.....	1,216	P. W. Bloom.....	Chas. G. Hof.
*East Rutherford.....	Bergen.....	2,250	H. K. Benson.....	Chas. A. Coriell.
*Eastwood.....	Bergen.....	360	W. H. Harrison.....	J. J. McGolrick.
*Elmer.....	Salem.....	1,145	John G. Marvin.....	J. G. H. Kroneser, Westwood.
*Englishtown.....	Monmouth.....	.....	John G. Ropes.....	C. H. Hughes.
*Englewood Cliffs.....	Bergen.....	.....	John G. Ropes, Fort Lee.....	Bismarck Hoxsie.
*Fairview.....	Bergen.....	.....	John C. Bush.....	John G. Ropes, Fort Lee.
*Fanwood.....	Union.....	.....	Henry L. Hall.....	John C. Bush.
*Fieldsboro.....	Burlington.....	.....	B. H. Jarret.....	Henry L. Hall.
*Frenchtown.....	Hunterdon.....	1,052	Frank Maxwell.....	Frank Maxwell.
*Garfield.....	Bergen.....	1,644	.....	.....
*Glen Ridge.....	Essex.....	2,580	.....	.....
*Haddonfield.....	Camden.....	842	.....	.....
*Haddon Heights.....	Bergen.....	.....	.....	.....
*Hawthorne.....	Passaic.....	.....	.....	.....
*Holmdelta.....	Middlesex.....	.....	.....	.....
*High Bridge.....	Hunterdon.....	1,032	.....	.....
*Hightstown.....	Mercer.....	300	.....	.....
*Holly Beach.....	Cape May.....	.....	.....	.....
*Hopewell.....	Mercer.....	.....	.....	.....
*Island Heights.....	Ocean.....	246	.....	.....
*Junction.....	Hunterdon.....	975	.....	.....

## List of Sanitary Districts, Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1895.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Boroughs.—Con.</i>				
*Lavallette.....	Ocean.....	1,113	George Kerr, M. D.....	Geo. E. Willits.
*Leesburgh.....	Cumberland.....	1,408	H. M. Thompson.....	H. M. Thompson.
*Leonia.....	Bergen.....	7,333	A. Woods.....	James Ferrish.
*Linwood.....	Atlantic.....	3,250	Jacob Van Hook.....	A. W. Ads.
*Little Ferry.....	Bergen.....	1,427	E. B. Blaisdel.....	Jacob Van Hook.
*Lodi.....	Bergen.....	1,243	C. E. Cook.....	E. B. Blaisdel.
*Long Branch Com.....	Monmouth.....	1,243	M. R. Mumford.....	Edmund K. Brown.
*Madison.....	Morris.....	1,439	F. T. May.....	M. R. Mumford.
*Manasquan.....	Monmouth.....	1,264	W. B. Stewart.....	F. T. May.
*Maywood.....	Bergen.....	877	Jacob Leenas.....	Wm. B. Stewart.
*Merchantville.....	Bergen.....	354	C. W. Kuhlman.....	Thos. Holt.
*Midland Park.....	Bergen.....	348	Joseph H. Ware.....	Robert A. Harkins.
*Milltown.....	Middlesex.....	4,245	Cyrus F. Cook.....	Cyrus F. Cook.
*Montvale.....	Morris.....	282	Chas. Forster Baltusro.....	Frank King.
*Mount Arlington.....	Morris.....	921	P. F. Cook.....	Rev. W. E. Honeyman.
*Mountain Side.....	Union.....	261	Wm. Rogers.....	Ira S. Champion.
*Mount Tabor.....	Monmouth.....		Rev. W. E. Honeyman.....	
*Neptune City.....	Monmouth.....		Chas. R. Brahn.....	
*Newark.....	Monmouth.....		Wm. Lake, Ocean City.....	
*New Market.....	Middlesex.....		J. H. Alday, M. D.....	
*North Caldwell.....	Essex.....			
*North Plainfield.....	Somerset.....			
*North Springfield.....	Monmouth.....			
*Ocean City.....	Cape May.....			
*Ocean Grove Associat'ns.....	Monmouth.....			
*Old Tappan.....	Bergen.....			

## List of Sanitary Districts, Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1895.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Boroughs.—Cont.</i>				
*Park Ridge.....	Bergen.....	763	W. D. Woodley.....	Garret F. Herring, River Vale.
*Pemberton.....	Burlington.....	816	James B. Hankins, Clerk.....	Henry Strohsahl.
*Pennington.....	Mercer.....	1,497	Chas. K. Yard.....	Barclay Leeds.
*Pennsgrove.....	Salem.....	1,543	Harry E. Orompton.....	Chas. K. Yard.
*Piscataway.....	Atlantic.....	660	John Sanders.....	Geo. S. Kille.
*Point Pleasant.....	Ocean.....	675	.....	Samuel Bardlett.
*Point Pleasant Beach.....	Ocean.....	675	W. B. Longyear.....	Jas. T. Havens.
*Port Oram.....	Passaic.....	923	J. J. Langton.....	D. C. Leaw.
*Princeton.....	Morris.....	2,693	William Killger.....	John O. Wells.
*Raritan.....	Mercer.....	518	M. A. Lumm.....	S. D. Wycoff.
*Ridgefield.....	Bergen.....	569	J. V. E. Voorhis.....	M. W. Hubbard.
*Riverside.....	Burlington.....	1,250	Alex. Marcy, Jr., M.D.....	William Killger.
*Rockaway.....	Morris.....	1,334	David Wiggins.....	M. A. Lumm.
*Roselle.....	Union.....	1,387	.....	J. H. Weston.
*Saddle River.....	Bergen.....	9,972	.....	William T. Stecher, Riverside.
*Sayville.....	Middlesex.....	424	.....	Edward H. Pancost.
*Sea Isle City.....	Cape May.....	5,671	.....	Wm. May.
*Seaside Park.....	Ocean.....	833	.....	G. A. Rawlins.
*Somers Point.....	Atlantic.....	66	.....	Chas. Van Winkle.
*South Amboy.....	Middlesex.....		.....	T. Nelson Woodruff.
*South Atlantic City.....	Atlantic.....		.....	Lefevre Smith, South River.
*South Bound Brook.....	Somerset.....		.....	U. H. Huntley.
*South Cape May.....	Cumberland.....		.....	W. R. Fox.
*South River.....	Middlesex.....		.....	J. F. Fulton.
*Spring Lake Beach.....	Monmouth.....		.....	Chas. Hart.
			.....	F. M. Hunt, Spring Lake Beach.

## List of Sanitary Districts, Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1895.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Boroughs—Con.</i>				
Spring Lake.....	Monmouth.....	331	Levi L. Woolley.....	Jno. Middleton.
*Stockton.....	Hunterdon.....	1,532	J. B. W. Lansing, M. D.....	J. B. W. Lansing, M. D.
*Totowa.....	Passaic.....	1,072	John T. Terhune.....	E. Grant White, Fort Lee.
*Undercliff.....	Bergen.....	1,563	C. H. Raetzraw.....	John J. Hopper.
*Upper Saddle River.....	Bergen.....	4,124	John S. Haney, M. D.....	William Billington.
Vailsburg.....	Essex.....	1,063	James Brennan.....	James Brennan, Carlton Hill.
Washington.....	Bergen.....	3,568	A. J. Craft.....	A. J. Craft.
Wenonah.....	Warren.....	209	Jesse W. English.....	William G. Blattner, Cape May.
West Cape May.....	Cape May.....	646	L. F. Eudredge.....	Jno. J. Bate.
*Wildwood.....	Bergen.....	109	Wm. R. Prentiss, Wildwood.....	W. R. Prentiss.
*Woodcliff.....	Bergen.....	421	G. J. Wortendyke.....	G. M. Ackerman.
Wood Ridge.....	Bergen.....	526	Wm. H. White.....	Wm. H. White.
Woodstown.....	Salem.....	1,470	J. G. Borton.....	H. H. Stepler.
<i>Towns.</i>				
Absecon.....	Atlantic.....	522	John R. Steelman.....	John R. Steelman.
Boonton.....	Morris.....	3,276	Geo. W. Burchard.....	Geo. W. Burchard.
Freehold.....	Monmouth.....	3,157	J. O. Burth.....	R. V. Lawrence.
*Guttenberg.....	Hudson.....	3,626	O. A. Mattison.....	O. A. Mattison.
Hackettstown.....	Warren.....	2,594	Peter J. Goodman.....	J. Louis O'Donnell.
Hammonkton.....	Atlantic.....	3,428	Edwin J. Boyd.....	Mahlon Stockman.
Harrison.....	Hudson.....	9,674	Wm. C. Smith.....	Sam'l Sabath.
Irvington.....	Essex.....	3,368	Sam'l Sabath.....	Sam'l Sabath.
*Keyport.....	Monmouth.....	4,888	Wm. K. Surphen.....	Wm. K. Surphen.
Red Bank.....	Monmouth.....	4,888		
Somerville.....	Somerset.....	4,514		

## List of Sanitary Districts, Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1895.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Towns—Con.</i>				
Stockton.....	Camden.....	8,010	Wm. R. Neff.....	Charles Pedegree, Cramer Hill.
*Town of Union.....	Hudson.....	13,336	Carl Hallberg.....	Thos. Terhune, Hohokus.
*Ridgefield Park.....	Bergen.....		Dr. W. W. Heberton.....	Dr. W. W. Heberton.
*Ridgewood.....	Bergen.....			
South Orange.....	Essex.....			
<i>Townships.</i>				
Aquasnoak.....	Passaic.....	3,598	Richard Berry.....	Richard Berry, Clifton.
*Alexandria.....	Hunterdon.....	1,202	M. D. Knight, Clinton.....	Wm. B. Wean, Mt. Pleasant.
*Alamuchy.....	Warren.....	663	Benj. A. Hendershot.....	E. J. Hadden, Allamuchy.
Alloway.....	Salmon.....	1,628	W. E. Slimkins.....	Wm. E. Slimking, Yorktown.
Andover.....	Sussex.....	1,072	Emery Bonker.....	Emery Bonker, Andover.
Atlantic.....	Monmouth.....	1,455	Levi Scooby.....	Levi Scooby, Scoobyville.
Bass River.....	Burlington.....	853	A. E. Mathis, New Gretna.....	A. E. Mathis, New Gretna.
Bedminster.....	Somerset.....	1,789	H. L. Kennedy, Gladstone.....	H. L. Kennedy, Gladstone.
Belleville.....	Essex.....	4,568	C. H. Winans.....	Wm. Connolly, Belleville.
Bergen.....	Bergen.....	499	Frank Greuter, Woodridge.....	Frank Greuter.
Berkley.....	Ocean.....	737	Devine Butler.....	Devine Butler, Bayville.
Bernards.....	Somerset.....	2,558	L. H. Bowers.....	L. H. Bowers, Basking Ridge.
Bethlehem.....	Hunterdon.....	1,601	S. O. Myers.....	S. O. Myers, Bloomsbury.
Beverly.....	Burlington.....	1,701	Ios. B. Carter, Delanco.....	Ios. B. Carter.
Blairtown.....	Warren.....	1,601	Wm. L. Johnson.....	Wm. S. Perry, Knowlton.
Bloomfield.....	Essex.....	8,093	G. D. Crane.....	Samuel H. Baxter, Bloomfield.
Boonton.....	Morris.....	693	Wm. Warrack, Bordenstown.....	Jos. Stevenson, Boonton.
*Bordentown.....	Burlington.....	991	L. T. Schenck, Readington.....	H. B. Ford.
*Burlington.....	Burlington.....	1,092		Ellsworth Mount.
Branchburg.....	Somerset.....	1,074		L. T. Schenck.
*Brick.....	Ocean.....	2,118		A. W. Downey, Burrsville.

List of Sanitary Districts, Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1895.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Townships—Con.</i>				
Bridgewater.....	Somerset.....	1,700	C. L. Voorhees, Somerville.	C. L. Voorhees.
Byram.....	Sussex.....	1,218	E. O. Valentine, Stanhope.	E. O. Valentine.
Buena Vista.....	Atlantic.....	1,424	Douglas Reed, Landisville.	Alfred Pennock, Buena.
Caldwell.....	Essex.....	1,658	Chas. R. Leavitt.....	Theo. Vincent.
Centre.....	Camden.....	2,017	F. H. Jackson, Magnolia.	F. H. Jackson.
*Chatham.....	Morris.....	2,527	F. A. Cory, Afon.....	F. A. Cory, Afon.
Chester.....	Burlington.....	4,227	Benjamin Rodgers, Moorestown.	Benjamin Rodgers.
Chesterfield.....	Morris.....	1,562	Jos. D. Budd, Chester.	Jas. D. Budd.
Cinnaminson.....	Burlington.....	1,202	C. B. Holloway.....	C. B. Holloway.
Clark.....	Burlington.....	384	Timothy Morton.....	Timothy Morton Parry.
*Clayton.....	Gloucester.....	2,082	F. P. Bullman, Picton.....	F. P. Bullman.
*Clinton.....	Essex.....	1,941	James R. Martlan <sup>4</sup> , Irvington.....	Wm. H. Goldsmith, Newark, Box 243.
*Commerial.....	Hunterdon.....	1,456	James H. Goodwin.....	Berren B. Berkaw, Annandale.
Crabury.....	Cumberland.....	2,145	Edward S. Crane.....	E. J. Cook, Port Norris.
Cranton.....	Middlesex.....	3,115	C. C. Phillips, M. D., Deerfield St.	Elijah K. Parry, Deerfield St.
Deerfield.....	Union.....	1,611	W. B. Jennings, M. D., Haddonfield.	William Geuff, Ellipsisburg.
Delaware.....	Union.....	2,819	John E. Barber, Oakdale.	John E. Barber.
Delran.....	Hunterdon.....	938	Daniel A. Kendall, Bridgeboro.	Daniel A. Kendall.
Dennis.....	Cape May.....	2,370	Leaming M. Rice, Jr.....	Leaming M. Rice, Jr., Dennisville.
Deptford.....	Gloucester.....	1,883	William C. Cartel, Wental.	William C. Cartel.
*Dover.....	Ocean.....	2,580	Thomas B. Irons, Toms River.	Thomas B. Irons.
Downe.....	Cumberland.....	1,808	Geo. R. Butcher.....	Willis A. Sittes.
*Egglewood.....	Ocean.....	589	Geo. W. Craig.....	Eugene F. Cranmer, West Creek.
Eastampton.....	Burlington.....	684	P. C. Young, M. D., Ringoes.	Joseph Fowell, Jr., Smithville.
East Amwell.....	Hunterdon.....	1,273	Asher B. Rue, Old Bridge.	Wm. Clayhammer, Wertsville.
*East Brunswick.....	Middlesex.....	4,928	Walter Heritage, Mickleton.....	Asher B. Rue.
East Greenwich.....	Gloucester.....	1,363		Walter Heritage.

List of Sanitary Districts, Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1895.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Townships—Con.</i>				
East Orange.....	Essex.....	17,927	Winthrop D. Mitchell, M. D.....	Israel L. Dodd.
*East Windsor.....	Mercer.....	2,671	Daniel Morris.....	Wm. H. Ruise, Hightstown.
Eastonown.....	Monmouth.....	2,961	A. R. Vickers.....	Am. T. Hopper, Long Branch.
*Egg Harbor.....	Atlantic.....	935		A. R. Vickers, Bakerville.
*Eggleston.....	Gloucester.....	488	P. V. B. Stroud, M. D.....	Kinsey Morgan, Hardingville.
Essexham.....	Salem.....	1,413	James M. Matthews, Trenton Junc.	R. H. Leeds, Marlton.
Ewing.....	Mercer.....	3,669	E. H. Whitticar.....	James M. Matthews.
Fairfield.....	Cumberland.....	1,802	C. H. French.....	J. B. Mulford, Fairton.
Fanwood.....	Union.....	1,600	John Adams.....	C. H. French, Westfield.
Florence.....	Burlington.....	1,762	John DeKay, Fapakating.....	John DeCook.
*Frankford.....	Sussex.....	1,890	Jno. W. Ackerman, Oakland.	John DeKay.
Franklin.....	Bergen.....	1,825	Adrian Vreeland.....	John W. Ackerman.
Franklin.....	Essex.....	3,078	W. S. Richman, Malaga.	F. Carlisle, Nantley.
Franklin.....	Gloucester.....	2,276	Isaac Suydam, Quakerstown.	W. S. Richman.
*Franklin.....	Hunterdon.....	1,278	Phillip Cook.....	Isaac Snyder.
*Franklin.....	Somerset.....	2,854	Ruif V. Lawrence.....	Sanford Snyder, E. Millstone.
Franklin.....	Warren.....	1,356	Walter Akerson, Johnsonburg.	Phillip Cook, Broadway.
Freehold.....	Monmouth.....	864	Fred. W. Somers, Oceanville.	John B. Parker, Smithburg.
Fringuynissen.....	Warren.....	2,375	Chas. S. Hertges, M. D.....	Walter H. Akerson.
Galloway.....	Atlantic.....	2,094	William T. Gibbs, Clementon.	F. W. Somers, Oceanville.
Glasboro.....	Gloucester.....	3,479	M. W. Northrup.....	David Paulin.
Green.....	Camden.....	588	Morris Bacon.....	William T. Gibbs.
Greenwich.....	Sussex.....	1,323	Jacob Baltager, Paulsboro.	M. W. Northrup, Huntinsville.
Greenwich.....	Cumberland.....	2,157	Wm. Sherrer, Bloomsbury.	Morris Bacon.
Greenwich.....	Warren.....	886	Wm. B. Jennings, M. D., Haddonfield.	Jacob Ballenger.
*Haddon.....	Camden.....	1,206	M. H. Morse.....	Wm. Sherrer.
Hamilton.....	Atlantic.....	3,860	Azariah Cubberly.....	Wm. H. Harrison, Haddonfield.
Hamilton.....	Mercer.....			Joseph Hammill, Mays Landing.
				Timothy Scooby, Yardville.

List of Sanitary Districts, Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1896.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Townships—Con.</i>				
Hampton.....	Sussex.....	869	Frank Emmans, Newton.....	Frank Emmans.
Hanover.....	Morris.....	4,624	L. B. Ford, Whippary.....	L. B. Ford.
Hardwick.....	Warren.....	470	P. W. Squier, Markboro.....	Philip S. Savercool.
Hardyston.....	Sussex.....	2,631	W. B. Pollard.....	Smith Simpson, Hambury.
Harmony.....	Warren.....	1,100	Cornelius Pittenger, Harmony.....	Cornelius Pittenger.
Harrington.....	Bergen.....	2,989	Wm. J. Demarest, Norwood.....	W. J. Demarest.
*High Bridge.....	Gloucester.....	1,608	Eli Heritage, Richwood.....	Eli Heritage.
Hillsborough.....	Hunterdon.....	1,032	Geo. F. Hummer, High Bridge.....	Geo. F. Hummer.
Hohokus.....	Somerset.....	2,847	W. H. Merrill, M. D., South Branch.....	Joseph H. Van Cleef.
*Holmdel.....	Bergen.....	2,377	Jno. Ackerman, Wyckoff.....	Jno. Ackerman.
*Hope.....	Hunterdon.....	1,706	Aaron Longstreet, Keyport.....	F. A. Dalrymple, Millford.
Hopewell.....	Warren.....	1,429	John Miller, Hope.....	Alvin A. Vanhorn.
Howell.....	Cumberland.....	1,849	Walter Minch.....	Wilson L. Minch, Shiloh.
Hudson.....	Mercer.....	4,418	Wilson D. Hunt, Harborton.....	Walter D. Hunt.
Hudson County.....	Monmouth.....	3,246	James H. Butcher, Ardona.....	James H. Butcher.
*Independence.....	Hudson.....	960	C. I. Rooney, Jr.....	C. J. Rooney, Jr.
Jefferson.....	Warren.....	1,650	Wm. T. Barker, Vienns.....	Wm. T. Barber.
Kearny.....	Ocean.....	10,487	Chas. Chamberlain.....	W. S. Hendrickson, Jackson's Mills.
Kingwood.....	Hudson.....	1,580	James M. Matthew.....	Chas. Chamberlain, Woodport.
Knowlton.....	Hunterdon.....	1,375	Samuel J. Snyder, Locktown.....	Samuel J. Snyder.
Lacey.....	Warren.....	1,284	Wm. B. Moore.....	Wm. B. Moore, Columbia.
Lafayette.....	Ocean.....	719	A. G. Wilbert.....	E. F. Hoimes, Forked River.
Lakewood.....	Sussex.....	703	John B. Peters.....	John Demarest.
Landis.....	Cumberland.....	4,660	Richard Johnson, Vineland.....	R. B. Robbins.
Lawrence.....	Cumberland.....	1,729	H. S. Long.....	Richard Johnson.
Lawrence.....	Mercer.....	1,706	I. B. Baker.....	Henry S. Long.
				I. B. Baker, Lawrence Station.

List of Sanitary Districts, Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1893.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Townships—Con.</i>				
Lebanon.....	Hunterdon.....	1,794	A. S. Banghart.....	A. S. Banghart, Glen Gardner.
Little Egg Harbor.....	Union.....	1,061	Asa Collins, Linden.....	Asa Collins.
Little Falls.....	Ocean.....	1,821	Theo. T. Price, M. D., Tuckerton.....	Wm. Oles Jones, Tuckerton.
Livingstone.....	Essex.....	2,410	George R. DeCamp.....	R. W. Furbeck.
Lodi.....	Bergen.....	638	J. Pres, Woodridge.....	George R. DeCamp, Roseland.
*Lopatcong.....	Gloucester.....	1,626	S. B. Platt, Bridgeport.....	J. Preis.
Lower Alloways Creek.....	Warren.....	1,781	Richard Grier.....	S. B. Platt.
Lower.....	Salem.....	1,800	W. C. Rutherford.....	E. Frank Clime, Stewartsville.
Lower Penns Neck.....	Salem.....	1,063	Wm. Hannab.....	Richard Grier, Salem.
*Lumberton.....	Burlington.....	1,350	D. H. Brown, Browntown.....	W. C. Rutherford, Cold Spring.
*Manalapan.....	Middlesex.....	1,715	S. C. Bowne, Tennent.....	John G. Mitchell, Pennsville.
Manchester.....	Monmouth.....	1,944	P. H. Emely.....	H. D. Culin, Hainesport.
Mannington.....	Passaic.....	979	Garret Planter.....	Samuel C. Bowne.
*Mansfield.....	Salem.....	4,993	Jonathan B. Grier.....	P. H. Emely, Lakehurst.
Mantra.....	Burlington.....	1,612	Thomas A. Keeler.....	Garret Planter, Paterson.
Matawan.....	Gloucester.....	1,918	James Beatty, Port Murray.....	Jonathan B. Grier.
Maurice River.....	Monmouth.....	2,012	George E. Hurff.....	Thomas A. Keeler, Columbus.
Medford.....	Monmouth.....	1,851	D. A. Baird.....	James Beatty.
Mendonham.....	Cumberland.....	2,874	Henry Reeves.....	George E. Hurff, Sewell.
Middle.....	Burlington.....	2,716	John Kennedy.....	Wm. Corson, Holmdel.
Middleton.....	Morris.....	1,989	John H. Townsend.....	Charles A. Geran.
Midland.....	Cape May.....	1,462	Omar Sickles, Navesink.....	Henry Reeves, Leesburg.
Millburn.....	Monmouth.....	6,330	Nicholas G. Hopper.....	Wm. M. Potts.
Millstone.....	Essex.....	2,762	George J. Ely, Perrineville.....	John D. Lindsay.
		1,723		Stillwell H. Townsend, Burleigh.
				Omar Sickles.
				Nicholas G. Hopper, Ridgewood.
				John M. Drake.
				George J. Ely.

## List of Sanitary Districts Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population of 1888.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Townships—Con.</i>				
Monroe	Gloucester	2,512	Clayton B. Tice	Clayton B. Tice, Williamsstown.
*Monroe	Middlesex	3,042	George N. Cole, Montague	Chas. G. Hoffman, Jamestown.
Montague	Somerset	868	John S. Hoagland, Griggstown	George N. Cole
Montgomery	Morris	1,644	Asa T. Cook, Montville	John S. Hoagland
Montville	Morris	2,525	C. M. Phillips	Asa T. Cook
Morris	Burlington	1,653	W. P. Lippincott, Hartford	C. M. Phillips, Morrisown
Mount Laurel	Morris	1,273	S. W. Salmon, Mt. Olive	W. P. Lippincott, Hartford
Mount Olive	Morris	825	John T. Irving, Elwood	S. W. Salmon
Mullica	Monmouth	7,253	Samuel A. Oliver	W. W. Phillips, Elwood
*New Barbadoes	Bergen	1,896	Benj. Romaine	Samuel A. Oliver, Asbury Park
*New Hanover	Burlington	934	Dr. A. M. Corey, New Providence	Benj. Romaine
New Providence	Union	3,426	George Hardin, Norton	Dr. A. M. Corey
Newton	Sussex	5,750	M. H. Girvin, Mt. Holly	George Hardin
*Northampton	Burlington	8,427	A. E. Bowman	M. H. Girvin
*North Bergen	Hudson	1,394	Robt. M. Clark	George Bruce, New Durham
North Brunswick	Middlesex	634	Wm. E. Wilkins	A. E. Bowman, New Brunswick
North Plainfield	Somerset	526	H. A. Brindley, Long Branch	Robt. M. Clark
*Ocean	Ocean	3,600	Levi C. Justice	Jonathan H. Wilkins
Oldmans	Monmouth	1,423	Carl Hallberg	H. A. Brindley
Orvil	Bergen	993	L. B. Hoagland, M. D., Oxford	Jas. A. Osborne, Hobokus
Orpeck	Bergen	3,436	Wm. H. Hunter	Wm. H. Hunter
*Oxford	Warren	304	Edward T. Smith, Buttsville	Jas. A. Osborne, Hobokus
*Pataquarry	Warren	689	Fletcher Fuller, Calco	Edward T. Smith, Buttsville
*Palisade	Bergen	2,310	F. Blackburn	Fletcher Fuller, Calco
Palmyra	Burlington	1,843	J. A. Harvey, Shirling	Wm. Ely, New Bridge
*Passaic	Morris	1,704	Ivins Davis	F. Blackburn
*Pemberton	Burlington	3,966	H. B. Horner, Merchantville	J. A. Harvey
*Pensauchen	Camden			Ivins Davis

## List of Sanitary Districts, Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1888.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Townships—Con.</i>				
*Pequanouck	Morris	8,166	Robert C. Gelly, Butler	Robert C. Gelly
*Pilesgrove	Salem	1,779	Chas. E. Kelly	David F. Davis, Woodstown
Piscataway	Middlesex	382	W. B. Lawback, Finesville	Chas. E. Kelly, New Market
*Pittsgrove	Salem	1,865	Daniel W. Busson, New Egypt	Geo. Schrick, Centron
Pohatcong	Warren	1,618	J. V. Bean, Midvale	Jacob O'Boyer, Carpenterville
Plumstead	Ocean	1,888	Chas. H. For, Alloway	Daniel W. Busson
Pompton	Passaic	2,045	Chas. Alpaugh, Flemington	J. V. Bean, Midvale
*Princeton	Mercer	3,488	Wm. Vanicklen, Metuchen	F. C. Borden
Quinton	Salem	1,317	Wm. Gelherly, Keyport	Joash I. Harris
*Randolph	Morris	3,869	Chas. Corker	Joash I. Harris
Raritan	Hudson	3,624	David Wiggins, Rockaway	Frank Brown, Flanders
Raritan	Middlesex	3,919	Peter J. Smith	Chas. Alpaugh
Raritan	Monmouth	2,776	Winfield S. Haines, Tabernacle	W. Vanicklen, Metuchen
Readington	Rutland	4,081	John O'Leary, Vincentown	Asbury F. Bedle, Keyport
Ridgefield	Bergen	2,467	H. E. Hathaway, Harrisonville	Eugene Hoffman, White House Sta.
Rockaway	Morris	4,481	S. F. Stanger, M. D., Harrisonville	Charles Corker, Fort Lee
Roxbury	Morris	2,189	Aron H. Burtis	David Wiggins, Rockaway
*Saddle River	Bergen	3,662	J. J. Hoff	F. M. Flowers, Landing
*Sandyston	Sussex	1,006	John B. Courtney, Manahawkin	S. Chittenden, Paterson, Box 628
*Sayreville	Middlesex	3,420		John J. VanSyckel, Layton
*Shamong	Burlington	965		B. F. Samsel
*Shrewsbury	Monmouth	3,649		S. L. Doughty, Oriental
South Brunswick	Burlington	2,039		A. L. Irving, Red Bank
South Harrison	Middlesex	2,467		John O'Leary
South Orange	Essex	704		H. E. Hathaway
*Spavia	Essex	5,108		D. C. Lippincott, Harrisonville
Springfield	Burlington	1,970		Theo. C. Baker, Maplewood
Springfield	Union	1,623		Sidney S. Byram, Houses
Stafford	Ocean	1,099		Aron H. Burtis, Mt. Holly
				J. J. Hoff



## List of Sanitary Districts, Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1895.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Townships—Con.</i>				
Stillwater.....	Sussex.....	1,225	E. C. Huff.....	A. C. Huff, Middleville.
Stoe Creek.....	Cumberland.....	966	J. H. Fogg.....	Chas. D. Fogg, Shiloh.
Summit.....	Union.....	4,450	Jas. W. Reeve.....	James W. Reeve, Summit.
Teaneck.....	Bergen.....	811	Jonathan Hawkins.....	Jonathan Hawkins, Teaneck.
*Tewksbury.....	Hunterdon.....	1,942	A. G. Banghart, Glen Gardner.....	C. A. Kinkel, New Germantown.
Union.....	Bergen.....	1,852	Thos. E. Buckley.....	Thos. E. Buckley, Lyndhurst.
*Union.....	Hudson.....	5,005	John Little, Jundian.....	John Little.
Union.....	Hunterdon.....	1,073	John Little, Jundian.....	E. R. Willig.
Union.....	Ocean.....	1,055	E. R. Willig, Barnegat.....	D. Hobart Skye.
Upper Freehold.....	Union.....	3,412	D. Hobart Skye.....	William Quickstell, Hornerstown.
Upper Penns Neck.....	Monmouth.....	2,247	F. C. Price, M.D., Imlaysdown.....	Geo. W. Hewitt.
Upper Pittsgrove.....	Salem.....	803	Geo. W. Hewitt, Pennsgrove.....	J. N. Gray, Pittsgrove.
Upper.....	Salem.....	1,741	.....	Albert G. Corson, Palermo.
Vernon.....	Cape May.....	1,073	Jesse T. Young.....	Abram Van Winkle.
Vernon.....	Sussex.....	1,837	Abram Van Winkle, Glenwood.....	Wm. L. Scott.
Verona.....	Essex.....	1,631	H. B. Whitthorne, M. D., Verona.....	Joseph L. Allen, Spring Lake.
Wall.....	Monmouth.....	3,853	G. E. Rogers, New Bedford.....	Cornelius D. Gunn.
Walpack.....	Sussex.....	2,362	Cornelius D. Gunn, Walpack Centre.....	S. M. Purcell.
Warren.....	Sussex.....	1,086	Ernest Wilson.....	Peter Newmiller, Warrenville.
*Washington.....	Somerset.....	1,259	Peter Newmiller.....	John W. Kinmouth, Hillsdale.
Washington.....	Bergen.....	310	A. E. Koster, Green Bank.....	A. E. Koster.
Washington.....	Burlington.....	1,206	C. B. Phillips, M. D., Hurfville.....	Chas. D. Nicholson, Turnersville.
Washington.....	Gloucester.....	1,142	J. B. Yard, Windsor.....	J. B. Yard.
*Washington.....	Morris.....	2,278	.....	W. A. Flock, Schooley's Mountain.
Waterford.....	Warren.....	1,287	Samuel Rinehart, Washington.....	Samuel Rinehart.
Waterford.....	Camden.....	2,789	M. D. Beckley.....	M. D. Beckley, Berlin.
*Wayne.....	Passaic.....	2,090	.....	Andrew P. Hopper, Paterson.
*Weehawken.....	Hudson.....	2,577	.....	Hudson B. Haines.
Westampton.....	Burlington.....	598	Hudson B. Haines, Rancocas.....	

## List of Sanitary Districts, Showing Population and Names and Addresses of Officers—Continued.

SANITARY DISTRICT.	COUNTY.	Population by Census of 1895.	NAME AND ADDRESS OF SECRETARY.	NAME AND ADDRESS OF REGISTRAR OF VITAL STATISTICS.
<i>Townships—Con.</i>				
West Amwell.....	Hunterdon.....	896	George H. Carr.....	George H. Carr, Lambertville.
West Deptford.....	Gloucester.....	1,717	Mark Clement, Woodbury.....	Mark Clement.
Westfield.....	Union.....	3,753	John M. C. Marsh.....	John M. C. Marsh.
West Hoboken.....	Hudson.....	18,296	John C. Robertson.....	
*West Milford.....	Passaic.....	2,169	.....	Joseph H. Schuster, Echo Lake.
West Orange.....	Passaic.....	5,854	Frank A. O'Connor.....	Frank A. O'Connor.
*West Windsor.....	Mercer.....	1,244	.....	Chas. H. Mather, Lawrence Station.
Weymouth.....	Atlantic.....	1,575	Bernard M. Godfrey, Tuckahoe.....	Bernard M. Godfrey.
*Willingboro.....	Burlington.....	704	.....	James M. Stokes, Rancocas.
Winlow.....	Camden.....	2,034	Michael G. Birdsall.....	Michael G. Birdsall, Wilton.
Woodbridge.....	Middlesex.....	5,802	C. M. Little.....	Jas. V. Freeman, Woodbridge.
Woodland.....	Burlington.....	387	George Bozarth.....	George Bozarth, Chatsworth.
*Woolwich.....	Gloucester.....	2,224	B. F. Buzby, M. D., Swedesboro.....	Samuel Avie, Swedesboro.

\*Sanitary districts failing to make annual reports in 1898.

## LIST OF CORONERS.

Atlantic County—Chas. Cunningham, Lemuel E. Wooten, Elisha S. Ingersoll.  
Bergen County—Cornelius Collins, Wm. H. Tracy, Wm. L. Vroom.  
Burlington County—Augustus B. Groebler, Frank G. Stroud, Wm. M. Wells.  
Camden County—Frank O. Stern, Edgar H. Landis, Sylvan G. Bushey.  
Cape May County—John S. Douglas, Wilson A. Lake, Daniel C. Heritage.  
Cumberland County—Waldo F. Sawyer, Paul J. Davis, Leslie L. Hands.  
Essex County—Benj. M. Skinner, Albert J. Hollis, Chas. H. Terrill.  
Gloucester County—James Hunter, Jr., Thomas J. Gaskill, Samuel S. Ledden.  
Hudson County—Wm. Debaney, Chas. Hoffman, Cornelius Greenleaf, Wm. H. Mead.  
Hunterdon County—Patrick F. Burke, Frederick L. Johnson.  
Mercer County—Wm. Glenn, Wm. M. Disbrow, Chas. H. Walker.  
Middlesex County—Thomas F. Burke, Chas. B. Moke, Edward E. Haines.  
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, Moses E. Johnson.  
Passaic County—Abraham Vermeulen, Chas. W. Booth, Herbert S. Emerson.  
Salem County—W. H. Carpenter, Thomas J. Torton, John G. Campbell.  
Somerset County—Aaron L. Stillwell, Louis T. Reed, Henry De Mott.  
Sussex County—Lewis C. Burd, Sidney B. Straley.  
Union County—Chas. W. MacConnell, Robert R. Sinclair, John M. Randolph.  
Warren County—Jesse Smith, Michael Kenney, Joseph Hilbert.

## LIST OF PHYSICIANS OF NEW JERSEY ARRANGED BY COUNTIES.

### Atlantic County.

- Armstrong, L. H., 8 Illinois avenue, Atlantic City.  
 Bailey, A. W., 1809 Pacific avenue, Atlantic City.  
 Ballet, Lorenzo D., 4 Virginia avenue, Atlantic City.  
 Bennett, Francis W., 1604 Pacific avenue, Atlantic City.  
 Bennett, Wm. H., Pacific and Ohio avenues, Atlantic City.  
 Bickel, Samuel D., 1701 Atlantic avenue, Atlantic City.  
 Bieling Theo. G., 16 South Maryland avenue, Atlantic City.  
 Blackburn, Albert E., 1212 Pacific avenue, Atlantic City.  
 Boysen, T. H., Egg Harbor City.  
 Chew, E. C. 1414, Atlantic avenue, Atlantic City.  
 Corson, Walter A., 716 Atlantic avenue, Atlantic City.  
 Crosby, Geo. W., 716 Atlantic avenue, Atlantic City.  
 Crowell, Godfrey M., Hammonton.  
 Cunningham, Charles, Hammonton.  
 Cuskaden, A. D., 2000 Atlantic avenue, Atlantic City.  
 Darnall, W. E., 1719 Pacific avenue, Atlantic City.  
 DeMill, Garret, Pleasantville.  
 Edmonds, Samuel F., Linwood.  
 Eimer, J. U., Egg Harbor City.  
 Evans, H. J., Pacific and Arkansas avenues, Atlantic City.  
 Fagerman, N. B., 34 North Ohio avenue, Atlantic City.  
 Fleming, John R., 1908 Pacific avenue, Atlantic City.  
 Fletcher, Geo. H., 1910 Arctic avenue, Atlantic City.  
 Franklin, Thos. H., 311 Atlantic avenue, Atlantic City.  
 Gardiner, Wm. G., Absecon.  
 Garra-brant, C., 1001 Atlantic avenue, Atlantic City.  
 Harris, G. M., Port Republic.  
 Ingram, Nelson, 1408 Atlantic avenue, Atlantic City.  
 Jahucke, Geo. F., Hammonton.  
 James, H. C., Mays Landing.  
 Johnson, C. R., 28 South Kentucky avenue, Atlantic City.  
 Joy, J. A., 25 South Illinois avenue, Atlantic City.  
 Lake, Eva W., Pleasantville.  
 Madden, E. H., Absecon.  
 Madden, T. W., Absecon.  
 Marvel, Emery, 711 Pacific avenue, Atlantic City.  
 Marvel, Philip, 1616 Pacific avenue, Atlantic City.  
 Morris, S. LeRoy, 115 North Maryland avenue, Atlantic City.  
 Munson, M. L., 1503 Pacific avenue, Atlantic City.  
 North, Edward, Hammonton.  
 North, J. H., Pleasantville.  
 Pennington, B. C., 1212 Pacific avenue, Atlantic City.  
 Pollard, W. M., 25 South South Carolina avenue, Atlantic City.  
 Powell, Wm. M., 16 South Indiana avenue, Atlantic City.  
 Reed, E. L., corner Pacific and Virginia avenues, Atlantic City.  
 Reed, Talbot, 1625 Pacific avenue, Atlantic City.  
 Reed, Thos. K., 22 North Pennsylvania avenues, Atlantic City.  
 Reilly, E. A., 20 South Tennessee avenue, Atlantic City.  
 Reynolds, Walter, 1322 Pacific avenue, Atlantic City.  
 Senseman, Theo., Pacific avenue and South Charles Place, Atlantic City.  
 Sharp, Edward S., 2327 Arctic avenue, Atlantic City.  
 Shimes, A. Barton, 1004 Pacific avenue, Atlantic City.  
 Snowball, Jas. W., 1519 Pacific avenue, Atlantic City.  
 Somers, Milton L., 2012 Pacific avenue, Atlantic City.  
 Sooy, Richard M., Pleasantville.  
 Sooy, Walter C., 1913 Pacific avenue, Atlantic City.  
 Souder, Charles, 2405 Atlantic avenue, Atlantic City.  
 Souder, Lewis R., 1910 Pacific avenue, Atlantic City.  
 Southern, Frank L., Pacific and Texas avenues, Atlantic City.  
 Steelman, Philip S., Linwood.  
 Stewart, W. Blair, Pacific and North Carolina avenues, Atlantic City.

Stille, Samuel, 1546 Atlantic avenue, Atlantic City.  
 Thompson, J. B., 1922 Pacific avenue, Atlantic City.  
 Townsend, Mary E., 13 South Pennsylvania avenue, Atlantic City.  
 Wales, W. R., Mays Landing.

Webster, J. But., 128 South Maryland avenue, Atlantic City.  
 Williams, E. P., 26 South Pennsylvania avenue, Atlantic City.  
 Youngman, M. D., 1618 Pacific avenue, Atlantic City.

## Bergen County.

Ackerman, Dr., Oradell.  
 Adams, Chas F., Union street, Hackensack.  
 Armstrong, Dr., Rutherford Park.  
 Ayres, M. S., Fair View.  
 Baldwin, D. A., Englewood.  
 Banks, Hardy M., Englewood.  
 Best, Geo. B., Englewood.  
 Brooks, Chas. D., Rutherford.  
 Chalhoun, Chas., Rutherford.  
 Collins, Dr., Ramseys.  
 Conover, E. E., Hasbrouck Heights.  
 Conrad E., State street, Hackensack.  
 Contrell, Robert G., Tenafly.  
 Cosgrove, Jas. E., Ridgewood.  
 Cropsy, C., Rutherford.  
 Currie, Daniel, Englewood.  
 Davenport, Dr., Garfield.  
 Davis, Jno. H., Rutherford.  
 De Yoe, C. P., Ramseys.  
 De Groff, E., Ridgefield Park.  
 Demund, Jno. F., Ridgewood.  
 Elsing, Henry, Ridgefield Park.  
 Ford, Helen A., Englewood.  
 Grovesteen, L., Leonia.  
 Hamilton, E. W., Oakland.  
 Haring, Jno. J., Tenafly.  
 Harris, Dr., Union street, Hackensack.  
 Hollister, H. H., Rutherford Park.  
 Huger, Jos., Fort Lee.  
 Jehl, Eugene, Park Ridge.

Knapp, L. P., Main street, Hackensack.  
 Lansing, J. B. W., Tenafly.  
 Lasker, Wm., Hasbrouck Heights.  
 McFadden, G. Howard, Main street, Hackensack.  
 Ockford, Dr., Ridgewood.  
 Parsell, Lewis B., Closter.  
 Pearson, Dr., Main street, Hackensack.  
 Pitts, Godfrey, Allendale.  
 Pratt, J. E., Dumont.  
 Proctor, J. W., Englewood.  
 Neer, Henry C., Park Ridge.  
 Richter, A., Carlstadt.  
 St. John, David, State street, Hackensack.  
 Stewart, Dr., Rutherford.  
 Sickenberger, Ernest F., Carlstadt.  
 Stone, B. D., Westwood.  
 Terry, J. W., Englewood.  
 Townsend, T. E., Westwood.  
 Trautwein, Dr., Lyndhurst.  
 Underwood, B. F., Ridgefield Park.  
 Van Horne, Byron G., Englewood.  
 Van Horne, Carrie C., Englewood.  
 Vroom, W. L., Ridgewood.  
 Wark, David, Englewood.  
 Wells, Jno. A., Englewood.  
 White, Henry D., Rutherford.  
 White, F. H., Main street, Hackensack.  
 Wyckoff, J. T., Leonia.  
 Zabriskie, Simeon J., Westwood.

## Burlington County.

Adams, Ellsworth, Beverly.  
 Adams, N. R., Moorestown.  
 Baird, David, Florence.  
 Barrington, Richard C., Mt. Holly.  
 Braddock, Richard S., Medford.  
 Branin, Jno. W., Mt. Holly.  
 Brown, J. C., Vincentown.  
 Buck, A. O., Burlington.  
 Calver, G. W. H., Columbus.  
 Carey, Jno. E., Lower Bank.  
 Cassidy, J. B., Burlington.  
 Chaffee, Newton H., Chesterfield.  
 Conrow, A. E., Moorestown.  
 Currie, Jos. J., Beverly.  
 Dee Bell, Jos. E., Columbus.  
 Dey, Chas. L., Crosswicks.  
 Faringer, H. K., Mt. Holly.

Flynn, J. J., Mt. Holly.  
 French, Edw. E., Bordentown.  
 Gauntt, Franklin, Burlington.  
 Gauntt, F. Allen, Burlington.  
 Gilbert, Jos. S., Bordentown.  
 Grumbrecht, Oscar L., Mt. Holly.  
 Hall, H. B., Riverton.  
 Hall, W. E., Burlington.  
 Haines, W. P., Marlton.  
 Hollingshead, E., Pemberton.  
 Hollingshead, Irvin W., Moorestown.  
 Janney, Frances S., Riverton.  
 Janney, J. D., Cinnaminson.  
 Kille, Chalkley J., Moorestown.  
 Lansing, E. S., Burlington.  
 Leedom, Dr., Bordentown.  
 Maine, Elias D., Sykesville.

Marcy, Jr., Alex., Riverton.  
 Martin, W. L., Rancocas.  
 Mattson, Alfred, Moorestown.  
 McFarland, Burr W., Bordentown.  
 Mccray, Jas., Maple Shade.  
 Melcher, Wm. P., Mt. Holly.  
 Parrish, W. G., Burlington.  
 Parsons, Richard H., Mt. Holly.  
 Patterson, Austin H., Georgetown.  
 Pickett, Elmer D., Mt. Holly.  
 Powell, Benajah B., Moorestown.  
 Pugh, J. Howard, Burlington.  
 Reeve, Josiah, Medford.  
 Richardson, James, Riverside.  
 Rink, E. F., Burlington.  
 Roberts, J. V., Beverly.  
 Sharp, L. L., Medford.  
 Sharp, Lewis L., Palmyra.  
 Shaw, Amos, Jacobstown.  
 Shippis, Wm. H., Bordentown.

Shreve, Jos., Burlington.  
 Small, Alex., Riverside.  
 Stokes, Jos., Moorestown.  
 Stokes, N. Newlin, Moorestown.  
 Stroud, F. G., Moorestown.  
 Stroud, P. V. B., Marlton.  
 Taylor, Addison W., Beverly.  
 Tebo, Levi D., Bordentown.  
 Thorn, Nathan, Moorestown.  
 Vanderveer, Geo., Mt. Holly.  
 Waln, R. J., Burlington.  
 Webb, John W., Pemberton.  
 Weeks, E. P., Riverside.  
 Weiler, H. K., Delanco.  
 Whitehead, J. G. L., Crosswicks.  
 Whitehead, G. L., Bordentown.  
 Wilkinson, Geo. H., Moorestown.  
 Wilson, Pusey, Moorestown.  
 Woolston, Elijah B., Marlton.  
 Young, Irene D., Bordentown.

## Camden County.

Andrews, P. W., 324 Market street, Camden.  
 Artz, Jerome L., Cramer's Hill.  
 Baer, Jos. S., 422 South Third street, Camden.  
 Baily, W. G., 708 South Fifth street, Camden.  
 Ballentine, Percy, 517 Haddon avenue, Camden.  
 Beale, Philip W., 842 Federal street, Camden.  
 Benjamin, Dowling, 215 Cooper street, Camden.  
 Bennett, John K., Gloucester City.  
 Bewley, Wm., 327 Walnut street, Camden.  
 Bicker, Francis J., 1701 Fillmore street, Camden.  
 Blake, Duncan W., Gloucester City.  
 Bonwill, Howard G., 921 South Fifth street, Camden.  
 Braddock, C. S., Haddonfield.  
 Bray, Walter S., 902 North Second street, Camden.  
 Bushey, S. G., 701 Pine street, Camden.  
 Casperon, Robert, 215 North Third street, Camden.  
 Climson, Benj., Mt. Ephraim.  
 Cohen, N. A., 1123 Kaigh avenue, Camden.  
 Collins, Wm. T., 451 Kaigh avenue, Camden.  
 Davis, John B., Dudley street, Camden.  
 Davis, Wm. A., 300 Cooper street, Camden.  
 DeGroot, Eugene E., Sixth corner Berkley, Camden.  
 Delap, W. L., Gloucester City.  
 Donges, Clarence B., 308 South Fifth street, Camden.  
 Donges, John W., 525 Broadway, Camden.  
 Doran, John G., 207 North Sixth street, Camden.  
 DuBois, W. G., 219 Broadway, Camden.  
 Finlaw, Jas. P., 811 South Sixth street, Camden.  
 Fishan, Joel W., 410 Broadway, Camden.  
 Gardiner, Richard, Gloucester City.  
 Garrison, Howard C., 419 North Fifth street, Camden.

Glover, L. L., Haddonfield.  
 Godfrey, E. L. B., 400 Linden street, Camden.  
 Grace, Harvey H., 511 Cooper street, Camden.  
 Grier, C. R., 815 South Fourth street, Camden.  
 Griffith, Anna E., 501 North Fourth street, Camden.  
 Griscom, L. C., 919 South Fifth street, Camden.  
 Gross, O. B., 700 Market street, Camden.  
 Gunter, G. H., 431 Market street, Camden.  
 Haines, R. I., 300 Kaigh avenue, Camden.  
 Haley, John J., Gloucester City.  
 Hanton, Louis, 442 Broadway, Camden.  
 Henry, Geo. W., Eighth and Walnut streets, Camden.  
 Hinson, J. M., Merchantville.  
 Hirst, Levi B., 592 Federal street, Camden.  
 Hoell, Conrad G., 204 Federal street, Camden.  
 Horning, F. L., 615 Market street, Camden.  
 Hovender, J. I., Atco.  
 Howard, E. M., 401 Lin'en street, Camden.  
 Howell, Aaron, 111 North Sixth street, Camden.  
 Howell, Mary A., 111 North Sixth street, Camden.  
 Hugg, Isaac N., 437 Broadway, Camden.  
 Hunt, Willis H., 315 Market street, Camden.  
 Hurff, Jos. E., Blackwood.  
 Ireland, Wm. H., 320 Cooper street, Camden.  
 Inrside, Allen S., 509 Broadway, Camden.  
 Issard, Wm. H., 411 North Fourth street, Camden.  
 Jarrett, Harry, Broadway, corner Cherry, Camden.  
 Jennings, Chas., Merchantville.  
 Jennings, W. B., Haddonfield.  
 Jones, John C., 815 South Fourth street, Camden.  
 Jones, Wm. S., 201 Broadway, Camden.  
 Kain, Wm. W., Fourth, corner Pine street, Camden.  
 Kelchner, Wm. I., 904 Cooper street, Camden.

Kensinger, William, North Cramer's Hill.  
 Kensinger, Wm. H., Cooper, corner Arthur street, Camden.  
 Kirk, Grant E., 1801 Broadway, Camden.  
 Landis, E. H., Camden.  
 Lawrence, J. D., Merchantville.  
 Leavitt, Jno. F., 528 North Third street, Camden.  
 Leckner, Jno. D., 260 Kaign avenue, Camden.  
 Lefevre, Annette, Blackwood.  
 Lee, Thomas, 61 Walnut street, Camden.  
 Lippincott, A. H., Southeast corner Fifth and Benson, Camden.  
 Lippincott, S. W., 302 Mickle street, Camden.  
 Litchfield, P. N., 1123 Kaign avenue, Camden.  
 Long, W. S., Haddonfield.  
 Lyon, M. S., Haddonfield.  
 Macray, Dr., Merchantville.  
 Marcy, F. W., 332 Penn street, Camden.  
 Marcy, Jno. W., Merchantville.  
 Martindale, Watson, Cramer's Hill.  
 Martindale, Jos. W., 2303 Federal street, Camden.  
 Mathews, J. F., 312 Penn street, Camden.  
 McAlister, Alex., 582 Federal street, Camden.  
 McGeorge, Wallace, 521 Broadway, Camden.  
 McGrath, Wm. H., 903 North Second street, Camden.  
 McLennon, J., Gloucester City.  
 McCray, Alex. M., 327 Cooper street, Camden.  
 McCray, Paul M., 331 Penn street, Camden.  
 Middleton, M. F., 423 Market street, Camden.  
 Miller, W. E., 1025 South Eighth street, Camden.  
 Mines, M. K., 713 South Third street, Camden.  
 Moslander, Wm. S., 837 Penn street, Camden.  
 Nicholson, Jos. L., 414 Penn street, Camden.  
 Oman, M. M., 815 Broadway, Camden.  
 Palm, Howard F., 614 North Second street, Camden.  
 Pfeiffer, F. P., 222 North Second street, Camden.  
 Powell, Wm. R., 808 Market street, Camden.  
 Pratt, Wm. H., 114 North Sixth street, Camden.  
 Prestry, Sophia, 405 Cooper street, Camden.

## Cape May County.

Abbott, Benjamin F., Ocean City.  
 Davis, D. R. W., Sea Isle City.  
 Douglass, John S., Tuckahoe.  
 Downs, Isaac M., Cape May C. H.  
 Foote, Theo., Wildwood.  
 Garrison, J. E., Ocean City.  
 Hand, Anna M., Cape May City.  
 Hand, Jno. H., Dias Creek.  
 Hutchinson, T. C., Ocean City.  
 Lake, Wilson A., Cold Spring.  
 Lake, Wilson R., Green Creek.  
 Leach, Alonzo L., Cape May City.  
 Leaming, J. F., Cape May C. H.  
 Leaming, Walter S., Cape May City.  
 Marcy, Virgil, M. D., Cape May City.

Quint, Silas H., 633 Market street, Camden.  
 Ramsdell, E. S., 703 Cooper street, Camden.  
 Ranghley, Wm., Berlin.  
 Reese, Leolf, 13 Marlton avenue, Camden.  
 Ridge, Jas. M., 309 Mickle street, Camden.  
 Robbins, Walter, 738 Washington street, Camden.  
 Roberts, F. A., 443 Market street, Camden.  
 Robinson, Frank, Linden street, Camden.  
 Ross, S. C., Gloucester City.  
 Schellenger, E. A. Y., 429 Cooper street, Camden.  
 Shafer, Wm., corner Fourteenth and Berkeley, Camden.  
 Sharp, Dr., Berlin.  
 Sharp, E. B., 434 Broadway, Camden.  
 Sharp, Jennie, 424 Broadway, Camden.  
 Sherk, H. H., Cramer's Hill.  
 Sherk, Henry H., 2647 Westfield avenue, Camden.  
 Shivers, C. H., Haddonfield.  
 Shivers, B. H., Haddonfield.  
 Smith, Henry A. M., Gloucester City.  
 Smith, J. Anson, Blackwood.  
 Smith, J. Byran, 335 Stevens street, Camden.  
 Stern, Frank A., Berlin.  
 Stevenson, J. R., Haddonfield.  
 Sites, J. K. F., 927 Cooper street, Camden.  
 Stock, Jacob F., 215 South Fifth street, Camden.  
 Stout, D. M., Berlin.  
 Strock, Daniel, 818 Federal street, Camden.  
 Taylor, H. G., 305 Cooper street, Camden.  
 Taylor, R. G., 1038 Broadway, Camden.  
 Tomlinson, Edwin, Gloucester City.  
 Tullis, Eli R., 403 Stevens street, Camden.  
 Ward, Lettie, 706 Broadway, Camden.  
 Welsh, John F., 621 Market street, Camden.  
 West, M., 722 Market street, Camden.  
 Westcott, Wm., Berlin.  
 Williams, F. E., Haddonfield.  
 Wills, J. H., 102 Cooper street, Camden.  
 Wingender, W. P., 801 Linden street, Camden.  
 Wood, Oran A., Magnolia.  
 Woodward, Geo. D., 211 Broadway, Camden.

Marshall, Jos. C., Tuckahoe.  
 Marshall, Randolph, Tuckahoe.  
 McCray, Jas., Cape May City.  
 Phillips, E. H., Cape May City.  
 Phillips, Walter, Cape May City.  
 Physick, Emilen, Cape May City.  
 Slaughter, James M., Rio Grande.  
 Stevens, Albert G., W. Cape May, Eldredge P. O.  
 Swain, Humphrey, Goshen.  
 Waggoner, J. S., Ocean City.  
 Wales, Eli B., Cold Spring.  
 Walker, J. Newton, Cape May City.  
 Way, Eugene, Dennisville.  
 Way, Julius, Cape May C. H.

## Cumberland County.

Adams, Orange H., Vineland.  
 Applegate, J. C., Bridgeton.  
 Bacon, S. L., Port Norris.  
 Bateman, Ephraim, Cedarville.  
 Bateman, F. M., Cedarville.  
 Bech, Judson L., Vineland.  
 Bennett, Samuel D., Millville.  
 Bidwell, Edwin H., Vineland.  
 Burt, N. Howard, Fairton.  
 Butcher, Geo. E., Dividing Creek.  
 Butcher, Joseph, Heislerville.  
 Butcher, Samuel, Mauricetown.  
 Canwell, Jos. A., Vineland.  
 Cooper, H. L., Vineland.  
 Cooper, Louis, Vineland.  
 Cornwell, Alfred, Bridgeton.  
 Cunningham, Geo., Vineland.  
 Davis, Theo. G., Bridgeton.  
 Day, G. E., Millville.  
 Day, S., Port Norris.  
 Duunlap, Miss, Vineland.  
 Eaton, F. M., Millville.  
 Elmer, Henry W., Bridgeton.  
 Elmer, Matthew K., Bridgeton.  
 Faulkner, M. R., Vineland.  
 Fogg, Edward S., Shiloh.  
 Foote, Theodore, Vineland.  
 Glandon, A. P., Newport.  
 Glendon, W. P., Cedarville.  
 Goudy, E. S., Deerfield.  
 Halsey, J. S., Vineland.  
 Hand, S. S., Leesburg.  
 Harker, G. L., Port Norris.

Harris, Geo. A., Bridgeton.  
 Hill, Chas. T., Dividing Creek.  
 Howard, E. E., Rosenhayn.  
 Hummel, L. H., Greenwich.  
 Jones, Ferdinand, Jr., Millville.  
 Jones, John C., Millville.  
 Judson, A. R., Newport.  
 Kurk, Irving W., Fairton.  
 Maily, Hamilton, Bridgeton.  
 Moore, Jno. H., Bridgeton.  
 Neal, Chas. B., Millville.  
 Newell, W. L., Millville.  
 Oliver, David H., Bridgeton.  
 Paulsen, Geo. M., Shiloh.  
 Phillips, Chas. C., Deerfield.  
 Putnam, J. H., Bridgeton.  
 Sawyer, Waldo F., Vineland.  
 Smith, W. H. C., Millville.  
 Smith, Thos. J., Bridgeton.  
 Sheppard, Jos., Bridgeton.  
 Snyder, S. M., Greenwich.  
 Stites, Elsmore, Bridgeton.  
 Streets, David R., Bridgeton.  
 Streets, Jacob G., Bridgeton.  
 Thompson, Jno. R. C., Bridgeton.  
 Tomlinson, Jos., Bridgeton.  
 Wade, J. W., Millville.  
 Ware, J. Vernon, Millville.  
 Ware, Jas. B., Bridgeton.  
 Willets, J. Howard, Port Elizabeth.  
 Wilson, C. W., Vineland.  
 Wilson, S. M., Bridgeton.

## Essex County.

Allis, J. A., Montclair.  
 Anderson, Henry J., 4 Orange Place, Newark.  
 Andrews, Wm. J., 4 West Park street, Newark.  
 Ardrey, Sarah, 18 Camp street, Newark.  
 Arnold, W. B., 440 Main street, Orange.  
 Asher, Morris, 44 Ferry street, Newark.  
 Aveson, W. H., Montclair.  
 Ayres, J. S., 21 Avon avenue, Newark.  
 Bachman, Chas., 72 South Orange avenue, Newark.  
 Bachman, Wm., 72 South Orange avenue, Newark.  
 Baker, F. E., 116 Fairmont avenue, Newark.  
 Baker, Walter S., 250 Mulberry street, Newark.  
 Bailey, Chas. H., Bloomfield.  
 Bailey, Wm. O., 282 South Orange avenue, Newark.  
 Baldwin, A. K., 291 Plane street, Newark.  
 Baldwin, Ed. H., 77 Clinton avenue, Newark.  
 Baldwin, S. H., 473 Clinton avenue, Newark.  
 Baldwin, T. H., 181 Washington street, Newark.  
 Baldwin, W. E., 462 Orange street, Newark.  
 Ballantine, A. D., 2 West Park street, Newark.

Bayles, Geo. C., 408 Main street, Orange.  
 Becker, F. W., 130 Belmont avenue, Newark.  
 Beckwith, Thos., 178 Oakwood avenue, Orange.  
 Beggs, W. F., 399 Seventh avenue, Newark.  
 Bemis, E. D., 57 Lafayette street, Newark.  
 Bennett, Chas. D., 117 Clinton avenue, Newark.  
 Beynon, H., 202 Clinton avenue, Newark.  
 Bianchi, A. R., 231 Orange street, Newark.  
 Blakelock, G. Clinton, 13 North Grove street, East Orange.  
 Bleyle, H. C., 118 Union street, Newark.  
 Bolton, James R., 237 South Ninth street, Newark.  
 Bond, Edwin, Caldwell.  
 Bradin, E. DeL., 232 Belleville avenue, Newark.  
 Bradshaw, James H., 2 High street, Orange.  
 Braun, Rudolph, 261 Ferry street, Newark.  
 Brien, W. M., Orange Valley.  
 Brown, Jas. S., 43 S. Fullerton avenue, Montclair.  
 Brown, P. D., Irvington.  
 Bruce, Ida, 423 Clinton avenue, Newark.  
 Bruyere, W. R., 299 Belleville avenue, Newark.

Buerman, Wm., 122 Spruce street, Newark.  
 Bunn, Frank C., 449 Main street, Orange.  
 Burke, Chas. V., 136 Bowery street, Newark.  
 Burnett, Jas. R., 16 Chestnut street, Newark.  
 Burns, E. L., 269 Broad street, Newark.  
 Burrage, R. L., Prudential Life Insurance Company, Newark.  
 Butler, C. S., City Hospital, Newark.  
 Butler, Clarence W., Montclair.  
 Butner, Carl, 67 Clay street, Orange.  
 Campbell, Wellington, Millburn.  
 Carpenter, F. S., 168 Summer avenue, Newark.  
 Carroll, W. E., 481 Broad street, Newark.  
 Case, Levi W., Montclair.  
 Chandler, Wm. J., South Orange.  
 Chapman, R. W., 65 Belleville avenue, Newark.  
 Christian, Albion C., Sharon avenue, Irvington.  
 Christian, M. Osborne, Irvington.  
 Church, C. Herbert, Nutley.  
 Clark, A. M., 812 Highland avenue, Newark.  
 Clark, J. Henry, 12 Walnut street, Newark.  
 Cobb, Geo. H., South Orange.  
 Coit, H. L., 51 Halsey street, Newark.  
 Condit, Alice A., Orange.  
 Conkey, Mary L., 124 Halsey street, Newark.  
 Conkling, E. D. G., 224 Belleville avenue, Newark.  
 Connelly, F. J., 224 Belleville avenue, Newark.  
 Contrell, R. G., 51 Second avenue, Newark.  
 Cook, H. F., 451 Orange street, Newark.  
 Cook, I. J., 389 Plane street, Newark.  
 Cooke, Wm. H., 10 North Munn avenue, East Orange.  
 Corona, Lorenzo, 168 Eighth avenue, Newark.  
 Corwin, T. W., 119 Belleville avenue, Newark.  
 Courtright, E. P., 76 Central avenue, Newark.  
 Crane, M. S., 109 Bloomfield avenue, Newark.  
 Cummins, Jas. H., 413 Clinton avenue, Newark.  
 Cusack, T. G., 56 Centre street, Orange.  
 Cyphers, O. E., Washington avenue, Belleville.  
 Davis, Wm. H., East Orange.  
 Dawson, O., Caldwell.  
 Delvin, Frank, 90 Congress street, Newark.  
 Dennis, John, 287 Belleville avenue, Newark.  
 Dennis, L., 30 Central avenue, Newark.  
 Diefenbach, R. G. P., 222 South Orange avenue, Newark.  
 Dill, Daniel M., 451 Orange street, Newark.  
 Disbrow, Wm. S., 151 Orchard street, Newark.  
 Dodge, Walter, 221 Day street, Orange.  
 Donnelly, R. J., 27 South Thirteenth street, Newark.  
 Dougherty, A. C., 158 Washington street, Newark.  
 Duffy, Charles J., 230 Bank street, Newark.  
 Duncker, Charles H., 918 Broad street, Newark.  
 Duncker, F. W., 918 Broad street, Newark.  
 Dwyer, Jno. L., 436 High street, Newark.  
 Eagleton, Wells P., 121 Orange street, Newark.  
 Edwards, D. J., 815 South Orange avenue, Newark.  
 Edwards, Thos. P., 7 Roseville avenue, Newark.  
 Egge, Julius K., West Kinney street, Newark.

Elliott, Daniel, 84 Washington street, Newark.  
 Elliott, James, 56 New street, Newark.  
 England, Chas. W., 117 Mechanic street, Newark.  
 English, Dr. E., Millburn.  
 English, D. E., Millburn.  
 English, James, Clinton avenue, Irvington.  
 English, Thos. D., 57 State street, Newark.  
 Epstein, H. B., 301 Bergen street, Newark.  
 Everts, Lucy F., 19 Grant street, Newark.  
 Fewsmith, Jos., 47 Central avenue, Newark.  
 Fischer, A., 29 Barclay street, Newark.  
 Fischer, Armin, 539 High street, Newark.  
 Fitch, W. Thos. S., 490 Main street, Orange.  
 Fitzgerald, Paul, 173 North Seventh street, Newark.  
 Fieger, Paul M., 172 Belmont avenue, Newark.  
 Francis, Richard P., Church street, Montclair.  
 Franklin, Benj., 129 Fifth avenue, Newark.  
 Frazer, Samuel H., 84 Park street, Newark.  
 Freeman, Richard D., South Orange.  
 Frey, Albert, 317 South Orange avenue, Newark.  
 Friess, Fred'k, 19 Elm street, Newark.  
 Foster, H. W., 12 South Fullerton avenue, Montclair.  
 Gaffney, Matthew, 211 Plane street, Newark.  
 Gage, R. S., 17 Gould avenue, Newark.  
 Garrett, Walter D., East Orange.  
 Gauch, Wm., 284 Orange street, Newark.  
 Geddis, Mary, Montclair.  
 Gerbert, H. P., 329 Main street, Orange.  
 Gile, Francis A., 315 Essex street, Orange.  
 Gillen, Robt. F., 36 Clinton street, Newark.  
 Givens, Bradford W., 12 North Grove street, East Orange.  
 Glatzmayer, H. A., 61 West street, Newark.  
 Glatzmayer, Wm., 234 Mulberry street, Newark.  
 Goodwin, Wm. M., 66 Congress street, Newark.  
 Gould, E. J. T., East Orange.  
 Graves, Anna M., 121 Mt. Prospect avenue, Newark.  
 Graves, Wm. B., East Orange.  
 Gray, Thos. N., East Orange.  
 Greddis, Anna L., Montclair.  
 Greenbaum, S., 153 West Kinney street, Newark.  
 Griffiths, C. B., 145 Monmouth street, Newark.  
 Groves, C. A., 303 Main street, East Orange.  
 Gruber, Frank, 305 Bank street, Newark.  
 Guenther, Emil E., 159 West Kinney street, Newark.  
 Guilliana, R., 200 Eighth avenue, Newark.  
 Hagar, Jno. F., 88 Ferry street, Newark.  
 Hagen, Chas. W., 224 South Orange Avenue, Newark.  
 Hagerty, John F., 297 Central avenue, Newark.  
 Hagney, F. W., 54 Sherman avenue, Newark.  
 Hahn, A. F., 182 Clinton avenue, Newark.  
 Haines, Eleanor, 936 Broad street, Newark.  
 Halsey, L. W., 49 Church street, Montclair.  
 Hamill, E. H., 239 Roseville avenue, Newark.  
 Hampson, Clara, 331 Summer avenue, Newark.  
 Harley, Mary, 16 James street, Newark.  
 Harman, Geo. W., 900 Broad street, Newark.

Harris, H. C., Hillside and Clark streets, Glen Ridge.  
 Harrison, Albert J., 130 Hillside avenue, Orange.  
 Hart, H. M., 274 Broad street, Newark.  
 Harve, Thos. W., 463 Main street, Newark.  
 Hawk, Hans, 393 Springfield avenue, Newark.  
 Hawkes, E. Zeh., 481 Broad street, Newark.  
 Hayden, Jos. H., 448 High street, Newark.  
 Heydeman, Wm. W., South Orange.  
 Hemsath, John, 80 West Kinney street, Newark.  
 Hering, Hugh C., 16 Gouverneur street, Newark.  
 Hering, Louis A., 179 Newton street, Newark.  
 Herold, H. C. H., 77 Congress street, Newark.  
 Herold, Henry T., 86 Jefferson street, Newark.  
 Hewlett, Peter V. P., 181 Plane street, Newark.  
 Hexamer, Fred., 23 South Orange avenue, Newark.  
 Hicks, Wm. H., 425 South Orange avenue, Newark.  
 Hinckley, L. S., 425 South Orange avenue, Newark.  
 Hitchcock, H., 114 Ridgewood avenue, Newark.  
 Hitchcock, W. E., 55 Belleville avenue, Newark.  
 Hoffman, Geo. P., 277 Littleton avenue, Newark.  
 Hoffman, Jas. A., 126 Street street, Newark.  
 Holden, Edgar, 16 Central avenue, Newark.  
 Hollister, L. E., 138 Clinton avenue, Newark.  
 Holmes, Frances W., Upper Montclair.  
 Holmes, Wm. H., 27 Bell street, Orange.  
 Hopper, Thos. B., 17 Webster street, Newark.  
 Houston, J. C., 111 Bloomfield avenue, Newark.  
 Howe, Edwin J., 985 Broad street, Newark.  
 Iliff, E. P., 26 Camp street, Newark.  
 Ill, Chas. L., 132 Springfield avenue, Newark.  
 Ill, Edw. J., 1002 Broad street, Newark.  
 Jacobi, Albert, 68 Centre street, Orange.  
 Jacobson, F. C., 108 Washington street, Newark.  
 Johnson, J. C., 11 Tichenor street, Newark.  
 Johnson, Wm. M., 1 Richmond street, Newark.  
 Jones, S. W., 20 Academy street, Newark.  
 Judson, W. H., 270 Clifton avenue, Newark.  
 Kaufman, Emil, 63 New street, Newark.  
 Kehling, Martin, 68 William street, Orange.  
 Kelly, J. W., 314 Bank street, Newark.  
 Kent, Geo. R., 39 Eighth avenue, Newark.  
 Kipp, Chas. J., 534 Broad street, Newark.  
 Knevitt, W. H., Nutley.  
 Knowles, F. A., Vailsburg.  
 Knowles, F. E., South Orange.  
 Kornemann, Henry A., 251 Springfield avenue, Newark.  
 Kraemer, Chas. F., 29 Thirteenth avenue, Newark.  
 Krause, Henry G., 210 Bank street, Newark.  
 Laine, Edwin R., Caldwell.  
 Lane, Francis A., East Orange.  
 Lauterborn, T. W., 243 Mulberry street, Newark.  
 Lawrence, Minnie J., 53 Academy street, Newark.  
 Lee, W. H. C., 184 Orange street, Newark.  
 Lefort, Marie L., 300 Washington street, Newark.  
 Lehlback, Chas., 22 Brintnall place, Newark.  
 Lehmack, Francis, 164 Springfield avenue, Newark.  
 Lewis, Wm. H., 490 Main street, Orange.  
 Lewis, Wm. Henry, 598 Broad street, Newark.  
 Lighthill, Ed. P., 560 Broad street, Newark.

Lippincott, J. D., 207 Summer avenue, Newark.  
 Lockwood, F. M., 290 Prospect street, East Orange.  
 Lockwood, Frank W., 97 Myrtle street, Bloomfield.  
 Long, Herbert M., 119 Madison street, Newark.  
 Lowerie, Thos. W., 30 Hill street, Newark.  
 Luther, Calista V., 29 Walnut street, Newark.  
 Lyons, Ernest M., 276 Broad street, Newark.  
 Maghee, James M., Orange Valley.  
 Malatesta, J. M., Eighth avenue, Newark.  
 Mandeville, Chas. D., 410 Mulberry street, Newark.  
 Mandeville, Fredk., 945 Broad street, Newark.  
 Mandeville, Fred. B., 945 Broad street, Newark.  
 Martin, Geo. F., 18 Camp street, Newark.  
 Martin, Noah R., 85 Halsey street, Newark.  
 Martin, Peter W., 104 Wickliffe street, Newark.  
 Martland, Wm. H., 1138 Broad street, Newark.  
 Matthews, H. E., 396 Scotland street, Orange.  
 McCarthy, Daniel, 170 Belleville avenue, Newark.  
 McCormick, Henry D., 36 Orleans street, Newark.  
 McCoy, G. W., City Hospital, Newark.  
 McEwen, Floy, 56 Oriental street, Newark.  
 McKenzie, Wm. H., 942 Broad street, Newark.  
 Mead, S. R., 16 James street, Newark.  
 Meeker, Geo., 244 Mulberry street, Newark.  
 Megaro, P., 320 High street, Newark.  
 Mercer, Archibald, 31 Washington street, Newark.  
 Meyers, F. L., 418 Plane street, Newark.  
 Miller, Henry A., 288 Plane street, Newark.  
 Mills, A. M., 122 Washington street, Newark.  
 Mitchell, Wm. D., 82 South street, Newark.  
 Moffat, Edgar V., 476 Main street, Orange.  
 Morehouse, J. T., 2 Freeman street, Orange.  
 Morris, Clement, 75 Washington avenue, Newark.  
 Motzenbecker, J., 43 Montgomery street, Newark.  
 Mueller, G. W., 67 Springfield avenue, Newark.  
 Mulcahy, D. D., 77 Bank street, Newark.  
 Mulholland, J. K., 913 Broad street, Newark.  
 Munroe, F. H., 84 Roseville avenue, Newark.  
 Murphy, Jane H., 124 Union street, Newark.  
 Muller, Fred. C., 31 Green street, Newark.  
 Nager, Vincent, 23 Beacon street, Newark.  
 Nash, Albert B., 10 South Thirteenth street, Newark.  
 Newman, E. D., 20 Warren street, Newark.  
 Newton, Richard C., Montclair.  
 Nivison, Anna, 5 North Eleventh street, Newark.  
 O'Gorman, Geo., 986 Broad street, Newark.  
 O'Reilly, Myles, 397 South Orange avenue, Newark.  
 Osborne, C. Herbert, 271 Mulberry street, Newark.  
 Osborne, Jos. D., 1034 Broad street, Newark.  
 Ost, Henry, 471 Springfield avenue, Newark.  
 Parsonnet, V., 177 Court street, Newark.  
 Peck, Edw. E., Caldwell.  
 Pennington, W., Irvington.  
 Peters, A. C., 304 Belleville avenue, Newark.  
 Petry, W. St. Barnabas Hospital, Newark.  
 Phelan, Ed., 27 Thomas street, Newark.

Phelan, T. F., 3 Hurlbut street, Orange.  
 Philhower, Geo. B., Nutley.  
 Phillips, Eliza B., East Orange.  
 Pierson, Wm., 18 Hillier street, Orange.  
 Pitt, Jessie E., 207 Broad street, Bloomfield.  
 Pollock, H. M., Clinton Place opp. Runyon  
 avenue, Newark.  
 Potter, G. E., 87 Halsey street, Newark.  
 Potter, Robt. C., 34 Centre street, Newark.  
 Power, Henry, Upper Montclair.  
 Pulford, H. A., South Orange.  
 Radford Stacy R., 159 1/2 Mulberry street, Newark.  
 Rand, Joo. M., 10 Green street, Newark.  
 Randall, C. H., 905 Belleville avenue, Newark.  
 Rankin, Jr., Wm., 23 Cedar street, Newark.  
 Read, Joshua W., 82 Park Place, Newark.  
 Ribbons, R. C., 105 Halsey street, Newark.  
 Richards, G. H., 29 Highland avenue, Orange.  
 Richman, E. M., 246 Mulberry street, Newark.  
 Ricord, Philippe, 433 High street, Newark.  
 Ripley, Chas. D., 84 Johnson avenue, Newark.  
 Robertson, Samuel E., 205 Lafayette street,  
 Newark.  
 Robinson, B. A., 265 Mulberry street, Newark.  
 Robinson, Manning N., 159 Elm street, Newark.  
 Robinson, Wm. D., East Orange.  
 Roden, Hugh P., 345 Washington street, Newark.  
 Roeber, W. J., 24 Monmouth street, Newark.  
 Rogers, R., 1195 Broad street, Newark.  
 Rogers, R. H., 224 Essex avenue, Orange.  
 Rolerfort, G. W., 243 Plane street, Newark.  
 Roth, Oswald H., 210 Littleton avenue, Newark.  
 Roth, Phillip, 297 Market street, Newark.  
 Rothe, H. E., 194 Washington avenue, Newark.  
 Runyon, Mefford, South Orange.  
 Schaaf, E. O., 217 South Orange avenue, Newark.  
 Schepbach, H. A., German Hospital, Newark.  
 Schilling, W., 585 Springfield avenue, Newark.  
 Schoeffler, Ernest, 7 Plum street, Newark.  
 Schopfer, Wm. E., 43 Read street, Newark.  
 Schureman, Albert J., 39 Columbia street, Newark.  
 Schureman, Chas. A., 22 Hill street, Newark.  
 Schwartz, Emanuel, 561 High street, Newark.  
 Sealey, Edward, 369 Washington street, Newark.  
 Seibert, Edgar, 575 Main street, Orange.  
 Seidler, Wm. F., 21 Ferry street, Newark.  
 Seidmann, Marcus, 186 Springfield avenue, New-  
 ark.  
 Seward, J. L., 414 Main street, Orange.  
 Shelton, Chas. H., Montclair.  
 Sherman, E. S., City Hospital, Newark.  
 Shick, Wm. F., 31 Park street, Newark.  
 Simmons, M. H., 225 Cleveland avenue, Orange.  
 Skinner, D. M., Belleville.  
 Slight, B. H. B., 31 Lincoln Park, Newark.  
 Smith, Anna L., Montclair.  
 Smith, Dan' W., 201 Walnut street, Newark.  
 Smith, E. Fayette, 9 Fulton street, Newark.  
 Sommerhoff, J. F., 67 Springfield avenue, Newark.  
 Soper, O., Upper Montclair.  
 Spottiswoode, Sarah C., 64 Cleveland street,  
 Orange.

Stahlin, Edward, 493 High street, Newark.  
 Stanwood, R. G., 117 North Sixth street, Newark.  
 Starkweather, Chas. F., 104 Halsey street, Newark.  
 Stickler, Jos. W., 153 Center street, Orange.  
 Stillwell, A. J., 57 Oakwood avenue, Orange.  
 Stillwell, J. A., 70 Warren street, Newark.  
 Stockton, Frank O., 17 West Park street, Newark.  
 Sutphen, Jos. S., 193 Orange street, Newark.  
 Sutphen, R. M., 5 Elm street, Newark.  
 Sutphen, T. Y., 999 Broad street, Newark.  
 Sweeney, Daniel, 333 Summer avenue, Newark.  
 Taft, Amanda, 28 Fulton street, Newark.  
 Teeter, Chas. E., 418 Orange street, Newark.  
 Tetreault, Frank J., 110 Main street, Orange.  
 Thayer, Alfred I., 151 Clinton avenue, Newark.  
 Thum, Fred. W., 149 Polk street, Newark.  
 Titus, Chas. T., 126 North Seventh street, Newark.  
 Titus, Wm., 487 Orange street, Newark.  
 Towle, Henry A., 16 Halsey street, Newark.  
 Trevisanello, Chas., 19 Market street, Newark.  
 Twinch, Sidney A., 598 Broad street, Newark.  
 Underwood, C. F., 259 Mt. Prospect avenue,  
 Newark.  
 Vail, M. H. C., Sanford street, Vailsburg.  
 Vail, H. P., 282 Verona avenue, Newark.  
 Van Buskirk, R., 10 Academy street, Newark.  
 Van Gieson, Wm. H., Bloomfield.  
 Vanneman, W. A. R., Mulberry and Clinton  
 streets, Newark.  
 Van Riper, A. H., Nutley.  
 Van Wageningen, G. A., 101 North Sixth street,  
 Newark.  
 Waite, Geo. M., 569 High street, Newark.  
 Wakely, W. A., 414 Main street, Orange.  
 Wallace, David L., 192 Clinton avenue, Newark.  
 Wallhauser, H. J. F., 27 Academy street, Newark.  
 Ward, Aaron C., 325 Clinton avenue, Newark.  
 Ward, Arthur, 17 Lombardy street, Newark.  
 Ward, Edwin M., Bloomfield.  
 Ward, Geo. S., 969 Broad street, Newark.  
 Ward, J. B., Lyons Farms.  
 Ward, Leslie D., 1038 Broad street, Newark.  
 Ward, Wm. R., Lyons Farms.  
 Ward, Wm. R., Clinton Place, opposite Runyon  
 avenue, Newark.  
 Ward, Wm. S., 12 Grant street, Newark.  
 Warren, W. H., 181 Verona avenue, Newark.  
 Washington, Walter S., 8 Washington Place,  
 Newark.  
 Weber, Fred. C., 3 Belmont avenue, Newark.  
 Weeks, G. M., 900 De Graw avenue, Newark.  
 Wendel, A. V., 189 Littleton avenue, Newark.  
 West, Eugene G., 14 Cleveland street, Orange.  
 White, Wm. H., Bloomfield.  
 Whiteborne, H. B., Verona.  
 Wickman, A., 218 Washington street, Newark.  
 Widman, A., 166 Springfield avenue, Newark.  
 Wilder, A., 5 North Eleventh street, Newark.  
 Wilson, Geo. O., 147 Summer avenue, Newark.  
 Wilson, Jas. W., 117 Elm street, Newark.  
 Wilson, Jno. E., Bloomfield.  
 Wilson, W. S., 98 Montclair avenue, Newark.

Winans, C. H., Belleville.  
 Wolfe, W. W., 17 Scott street, Newark.  
 Woodruff, Franklin C., 1 Roseville avenue, Newark.  
 Woolman, Henry M., 100 Thirteenth avenue,  
 Newark.

Worl, E. E., 297 High street, Newark.  
 Wrightson, Jas. T., 12 Central street, Newark.  
 Young, Chas., 23 East Kinney street, Newark.  
 Young, Jos. C., 964 Broad street, Newark.  
 Zeh, C. M., 481 Broad street, Newark.

## Gloucester County.

Ashcraft, Jno. H., Mullica Hill.  
 Ashcraft, Samuel, Mullica Hill.  
 Brett, Miriam E., Wenonah.  
 Buck, Dr., Newfield.  
 Buzby, Benj. F., Swedesborough.  
 Campbell, Duzean, Woodbury.  
 Carr, H. H., Mullica Hill.  
 Clark, Henry C., Woodbury.  
 Clark, Henry H., Woodbury.  
 Diverty, H. B., Woodbury.  
 Duffell, Chas. L., Clayton.  
 Edwards, J. G., Williamstown.  
 Fish, Chas. A., Aua.  
 Fisher, C. Frank, Clayton.  
 Clover, W. A., Woodbury.  
 Grimshaw, O., Swedesborough.  
 Halsey, L. M., Williamstown.  
 Harvey, C. W., Wenonah.  
 Heritage, Chas., Glassborough.  
 Heritage, J. Down, Glassborough.  
 Hillegrass, E. Z., Mantua.  
 Hunter, Jas., Westville.  
 Husted, J. M., Clayton.  
 Iszard, Howard, Glassborough.

Iszard, Jacob, Glassborough.  
 Laws, Geo. C., Paulsborough.  
 Lee, Thomas, Woodbury.  
 Luffberry, M. J., Glassborough.  
 Oliphant, E. T., Bridgeport.  
 Parker, T. E., Woodbury.  
 Phillips, Cyrus B., Hurlville.  
 Porch, Alfred, Claytons.  
 Pounds, Wm. H., Paulsborough.  
 Reading, Geo. Evans, Woodbury.  
 Reeves, R. H., Paulsborough.  
 Rodgers, Harry, Pitman Grove.  
 Simmons, W. Grant, Swedesborough.  
 Smith, A. A., Malaga.  
 Spark, Grant, Mantua.  
 Stanger, S. F., Harrisonville.  
 Stillwagon, P. E., Bridgeport.  
 Stokes, Lydia W., Woodbury.  
 Stout, Harry A., Wenonah.  
 Trenchard, Albert, Glassborough.  
 Williams, H. F., Woodbury.  
 Williams, M. C., Woodbury.  
 Williams, W. C., Woodbury.  
 Wilson, H. A., Woodbury.

## Hudson County.

Abbott, Henry D., Bayonne Hospital, Bayonne.  
 Abercarnbie, W. H., Jersey City.  
 Ackerson, A. E., Jersey City.  
 Adam, Clovis, Jersey City.  
 Adam, H. T., Jersey City.  
 Aldridge, Matilda H., Jersey City.  
 Allen, Ulamor, Jersey City.  
 Allers, Henry, Harrison.  
 Andrews, B. A., Jersey City.  
 Armstrong, E. C., Town of Union.  
 Artiz, W. J., 630 Bloomfield street, Hoboken.  
 Atkinson, Thos. H., 150 Grand street, Jersey City.  
 Atwell, D. R., 730 Bloomfield street, Hoboken.  
 Baker, E. M., Jersey City.  
 Bance, Mary E., Jersey City.  
 Barber, P. W., Arlington.  
 Battle, Thos. J., Bayonne Hospital, Bayonne.  
 Bauman, Louis, Jersey City.  
 Baumann, Jno. J., Jersey City.  
 Beatty, Enos E. B., 798 Grand street, Jersey City.  
 Beck, Alexander, Arlington.

Bidwell, H. G., Jersey City.  
 Blanchard, O. R., Jersey City.  
 Bogardus, H. J., Jersey City.  
 Bondy, S. E., Bayonne.  
 Borgmeyer, J. G. Louis, 90 West Eighth street,  
 Bayonne.  
 Bowen, Horace, Jersey City.  
 Bowley, Helen F. L., 115 Monticello avenue, Jer-  
 sey City.  
 Bower, F. F., 262 Barrow street, Jersey City.  
 Boyd, Wm. S., Jersey City.  
 Bozeman, Nathan G., 484 Jersey avenue, Jersey  
 City.  
 Bradford, H. C., Bayonne Hospital, Bayonne  
 Engleble, Wm., Jersey City.  
 Briggs, Josephine H., 62 Mercer street, Jersey  
 City.  
 Brien, W. M., Jersey City.  
 Brinkerhoff, Henry H., Jersey City.  
 Broderick, Jno. J., Jersey City.  
 Brokhaus, Marea H., 500 Hudson street, Hoboken.

Brough, Frank T., Bayonne.  
 Brownell, Carl DeWolf, Jersey City Hospital, Jersey City.  
 Brush, H. M., Bayonne.  
 Buffett, E. P., Jersey City.  
 Bryne, Thos., Town of Union.  
 Bull, E. L., Jersey City.  
 Burdett, Jno. B., Jersey City.  
 Burnet, C. V., Harrison.  
 Burnett, Henry H., 724 Washington street, Hoboken.  
 Burns, M. F., Jersey City Hospital, Jersey City.  
 Cadmus, N. J., 229 Newark avenue, Jersey City.  
 Carpenter, A. J., 70 Church street, Jersey City.  
 Case, C. H., Jersey City.  
 Chabert, Romeo, 104 Seventh street, Hoboken.  
 Chambers, T. R., Jersey City.  
 Chard, John A., 80 Ocean avenue, Jersey City.  
 Child, Frank M., 1129 Bloomfield street, Hoboken.  
 Ciaramelli, Guisepppe, 309 First street, Jersey City.  
 Clark, Ernest L., Jersey City.  
 Clark, S. W., 490 Jersey avenue, Jersey City.  
 Clark, W. A., Jersey City.  
 Clausen, Benj., Hoboken.  
 Clifford, Ed. S., 922 Avenue D., Bayonne.  
 Clute, Deborah V., 130 Arlington avenue, Jersey City.  
 Colletti, Reina Ignazio, 300 Palisade avenue, Jersey City.  
 Collier, Ed., Jersey City Hospital, Jersey City.  
 Conant, J. B., Christ Hospital, Jersey City.  
 Connell, Jno., Jersey City.  
 Converse, Chas. B., Jersey City.  
 Cooney, Jno. P., Baldwin avenue, Jersey City.  
 Corrigan, Jno. E., Jersey City.  
 Corwin, Fred. M., Bayonne.  
 Craig, B. P., 258 Montgomery street, Jersey City.  
 Craven, John J., Jersey City.  
 Craven, Jos. J., Jersey City.  
 Crocker, Chas. C., 1229 Washington street, Hoboken.  
 Cropper, Chas. W., Jersey City.  
 Cropsy, Chas. D., Bayonne.  
 Cudlippe, E. A., Jersey City.  
 Culver, G. M., Jersey City.  
 Culver, John W., 402 New York avenue, Jersey City.  
 Cunneely, Henry C., 835 Garden street, Hoboken.  
 Curtis, Thos. A., 70 Garden street, Jersey City.  
 Dallas, Alexander, Bayonne.  
 Darlington, W. C., 124 York street, Jersey City.  
 Davidson, David, Bayonne Hospital, Bayonne.  
 Davies, James, 47 Montgomery street, Jersey City.  
 Davis, Austin H., 813 Avenue C., Bayonne.  
 De Groff, Ephraim, Town of Union.  
 De Hart, Florence, 99 Mercer street, Jersey City.  
 De Hart, M. F., Jersey City.  
 De Long, Arthur D., Jersey City.  
 Denis, L. A., 313 Stevens street, West Hoboken.  
 Derby, N. R., Bayonne.

Dickinson, G. K., Jersey City.  
 Dingelstedt, R. H., 619 Hudson street, Hoboken.  
 Dodd, Wm. J., 101 Grand street, Jersey City.  
 Dodson, L. W., West Hamilton Place, Jersey City.  
 Doherty, John W., Jersey City.  
 Dolphin, M. O. F., Harrison.  
 Donohue, L. F., Bayonne.  
 Doyle, Joseph M., 111 Wayne street, Jersey City.  
 Drain, John S., Jersey City.  
 Drasel, Gustav W., 90 Jefferson street, Hoboken.  
 Drasel, William A., 91 Jefferson street, Hoboken.  
 Drayton, Henry S., Jersey City.  
 Drossner, Morris, 566 Bergen avenue, Jersey City.  
 Dunkel, Edwin K., 1 Hampton Court Terrace, Jersey City.  
 Durrie, N. A., 664 Jersey avenue, Jersey City.  
 Elmore, W. F., 521 Bramhall avenue, Jersey City.  
 Ende, C. Ann, Town of Union.  
 Everitt, John R., Jersey City.  
 Exton, J. A., Arlington.  
 Faber, John, Jersey City.  
 Faison, Wm. F., Jersey City.  
 Fanning, Nelson, Jr., 96 Jackson avenue, Jersey City.  
 Faulkner, James N., Hoboken.  
 Fehr, Julius, Hoboken.  
 Fellmann, Geo. H., 289 Pavia avenue, Jersey City.  
 Fenry, W. Fred., 411 Bergen avenue, Jersey City.  
 Ferguson, J. S., 203 Eighth street, Jersey City.  
 Fernald, S. E. De Hart, Jersey City.  
 Field, F. L., 24 East Forty-fourth street, Bayonne.  
 Finnerty, John H., Jersey City.  
 Finnerty, Joseph W., 814 Grand street, Jersey City.  
 Finn, J. F., Jersey City.  
 Fisher, Wm. R., 711 Washington street, Hoboken.  
 Fitzgerald, T. E., 532 Jersey avenue, Jersey City.  
 Fletcher, Zachary Peck, Jersey City.  
 Foley, Michael F., 706 Garden street, Hoboken.  
 Fopeano, Jos. E., 265 Fourth street, Hoboken.  
 Foote, A., Jersey City.  
 Foote, N., 96 Fairview avenue, Jersey City.  
 Forman, A. C., Bayonne.  
 Forman, Samuel R., Jersey City.  
 Fraze, Chas. E., 608 Ocean avenue, Jersey City.  
 Frazer, F. M., 100 Mercer street, Jersey City.  
 Freile, Wm., Christ Hospital, Jersey City.  
 Furcron, W. A., 561 Bergen avenue, Jersey City.  
 Fyfe, G., 76 Madison avenue, Jersey City.  
 Gallagher, Wm. C., 281 Baldwin avenue, Jersey City.  
 Gardner, J. W., corner Warren and Grand streets, Jersey City.  
 Gelback, Rudolph W., 704 Hudson street, Hoboken.  
 Gilchrist, C. A., 710 Washington street, Hoboken.  
 Gilman, Robert B., Jersey City.  
 Goldberg, Eugene H., Kearny.  
 Goode, L. G., Jersey City.  
 Gordon, L. J., Jersey City.

Grabowski, Catimir, Jersey City.  
 Gray, D. T., 108 Magnolia avenue, Jersey City.  
 Gray, Frank D., Jersey City.  
 Gray, Jas. E., 47 Montgomery street, Jersey City.  
 Grew, Francis B., 616 Garden street, Hoboken.  
 Griswold, W., 99 Mercer St., Jersey City.  
 Guerin, L. V., 42 Oakland avenue, Jersey City.  
 Haase, H. W. A., Summit, near Magnolia avenue, Jersey City.  
 Hallock, H. M., Jersey City.  
 Hardenburg, D. S., Jersey City.  
 Harder, Geo. W., 7 Hampton Court Terrace, Jersey City.  
 Hart, Ed. P., 521 Jersey avenue, Jersey City.  
 Hart, Hugh M., Christ Hospital, Jersey City.  
 Hartnett, Eugene H., Jersey City.  
 Hecht, Max, West Hoboken.  
 Helfer, Samuel, 208 Hudson street, Hoboken.  
 Henchman, Melissa, 173 Bergen avenue, Jersey City.  
 Henry, Jno. P., Jersey City.  
 Hetherington, Wm. L., 299 Varick street, Jersey City.  
 Hill, A. V., Guttenberg.  
 Hill, C. D., Jersey City.  
 Hillager, Willard, Taylor's Hotel, Jersey City.  
 Hills, Fred L., Christ Hospital, Jersey City.  
 Hoenig, Carl, Hoboken.  
 Hoenig, Chas., 604 Hudson street, Hoboken.  
 Hoffmann, Hans R., 126 Union street, Town of Union.  
 Hoffman, Jas., Jersey City.  
 Hoffman, Jr., Peter, Jersey City.  
 Holcombe, A. J., Jersey City.  
 Holcombe, H. J., Jersey City.  
 Hollister, Samuel A., Jersey City.  
 Holloway, John M., Pavia, n. Summit avenue, Jersey City.  
 Holt, Henry D., 21 Lexington avenue, Jersey City.  
 Hommel, P. E., Jersey City.  
 Hornblower, Josiah, Jersey City.  
 Hornblower, Theo. R., Jersey City.  
 Humphrey, C. L., 205 Pavia avenue, Jersey City.  
 Inglis, Roy, Jersey City.  
 Irvine, J. S., Jersey City.  
 Jaeckel, C. E., 16 Jefferson avenue, Jersey City.  
 Jardine, M. A., Jersey City.  
 Jellecker, Frank A., Christ Hospital, Jersey City.  
 Johnson, Fred. L., 108 York street, Jersey City.  
 Jones, Eli G., 130 Wayne street, Jersey City.  
 Jones, W. F., 211 Washington street, Jersey City.  
 Justin, John C., Guttenberg.  
 Kammerer, A. Chas., 1148 Summit avenue, Jersey City.  
 Keegan, Jas. E., 459 Fairmount avenue, Jersey City.  
 Keller, W. H., Bayonne.  
 Kelly, Gertrude, Hoboken.  
 Kelly, John S., 269 Eighth street, Jersey City.  
 Kennedy, James H., Jersey City.  
 Kilgore, Geo. C., 944 Avenue D, Bayonne.

King, Geo. W., Snake Hill.  
 Kirsten, A. J., 27 Varick street, Jersey City.  
 Knowles, Chas. P., J. C. Hospital, Jersey City.  
 Kopetschny, E. F., Jersey City.  
 Kopetschny, Otto E., Jersey City.  
 Kortright, S. E., New Durham.  
 Krauss, Gustav A., 238 Grove street, Jersey City.  
 Kudlich, Jno., 506 Hudson street, Hoboken.  
 Kudlich, Wm. F., 408 Hudson street, Hoboken.  
 Kuehne, Richard, Jersey City.  
 Kuhn, J. E., 307 Fourth street, Harrison.  
 Kydd, Mary E., 162 Mercer street, Jersey City.  
 Kyte, Calvin F., Jersey City.  
 Lambert, F. E., 77 Linden avenue, Jersey City.  
 Lampton, M., Jersey City.  
 Law, Chas. K., Jersey City.  
 Le Conte, Jos. N., Jersey City.  
 Lemmery, Thos. H., 143 Magnolia avenue, Jersey City.  
 Lewis, Wm. C., Jersey City.  
 Lightfoot, Geo. H., Arlington.  
 Lignot, Albert, Jersey City.  
 Limeburner, C. A., Jersey City.  
 Livingston, Helen S. F., 115 Monticello avenue, Jersey City.  
 Lochner, Jao., Jersey City.  
 Lockwood, H. L., Jersey City.  
 Loomis, A. J., Jersey City.  
 Love, J. W., Christ Hospital, Jersey City.  
 Lowenthal, E. J., Hoboken.  
 Luce, E. P., Bayonne.  
 Lucke, Jno. T., Town of Union.  
 Lutkus, Wm. C., Jersey City.  
 Lynch, H. H., Jersey City.  
 Macmillan, J. W., 313 Webster avenue, Jersey City.  
 MacMurrough, F. K., Jersey City.  
 Macon, W. D., Christ Hospital, Jersey City.  
 MacRae, J. B., 126 Grant avenue, Harrison.  
 Malatesta, Jos. M., 294 Newark avenue, Jersey City.  
 Marks, E. G., Arlington.  
 Martin, John H., West Hoboken.  
 Martine, Jennie W., Jersey City.  
 Masten, H. V., Christ Hospital, Jersey City.  
 Mattalieu, F. W., 62 Monticello avenue, Jersey City.  
 Matthei, Ed., 86 Bowers street, Jersey City.  
 McCann, H. M. M., 345 New York avenue, Jersey City.  
 McClellan, D., West Hoboken.  
 McConville, W. T., 526 Grove street, Jersey City.  
 McCormick, D. L., 374 Communipaw avenue, Jersey City.  
 McDowell, M. J., 292 Fourth street, Jersey City.  
 McGill, Jno. D., Jersey City.  
 McKay, Jos. F., 486 Bramhall avenue, Jersey City.  
 McLaughlin, Geo. E., Jersey City.  
 McLean, Jno. J., Jersey City.  
 McLoughlin, Thos. J., Jersey City.  
 McNamara, T. C., Hoboken.  
 McNeil, C. Holmes, Jersey City.



Meisgeier, Edward B., Town of Union.  
 Menger, Wm., 421 Gardner street, Town of Union.  
 Merrius, Ed. M., City Hospital, Jersey City.  
 Montmarquet, J. D., 31 Concord street, Jersey City.  
 Mooney, Jno. J., 250 Third street, Jersey City.  
 Morris, Austin F., 301 Varick street, Jersey City.  
 Morris, S. V., Bayonne.  
 Morris, Theo. F., Jersey City.  
 Mulvaney, Edward, Jersey City.  
 Muttart, Alder C., Jersey City.  
 Muttart, Geo. W., Jersey City.  
 Muzzy, A. T., Jersey City.  
 Myers, S. I., Bayonne.  
 Nevin, John J., Jersey City.  
 Nevin, Jos. L., Jersey City.  
 Nevin, Wm. R., Jersey City.  
 Nabers, A. J., Bayonne.  
 Nichols, Frank, 723 Washington street, Hoboken.  
 Nichols, Harry, 723 Washington street, Hoboken.  
 Noble, Francis E., Jersey City.  
 Norris, H. L., 51 Palisade avenue, West Hoboken.  
 O'Callaghan, Thos. C., Jersey City.  
 Oestmann, Aug. W., Jersey City.  
 Ohlmeyer, Marie E., West Hoboken.  
 O'Mara, Thos. J. G., 303 Summit avenue, Jersey City.  
 Opdyke, Chas., Jersey City.  
 Opdyke, Levings A., Jersey City.  
 O'Sullivan, Patrick, Jersey City.  
 Parker, Wm. J., Jersey City.  
 Parsons, John C., Jersey City.  
 Peacock, Rufus W., Jersey City.  
 Pendergast, E. J., 47 Cottage street, Jersey City.  
 Petrie, Robert M., Jersey City.  
 Pfenning, A. C., West Hoboken.  
 Pinder, David B., 201 Garden street, Hoboken.  
 Pirkner, Felix, 16 Fifteenth street, Town West, N. Y.  
 Poocek, Walter, Bayonne.  
 Pollard, Jos. E., Jersey City.  
 Poole, Louis E., Jersey City.  
 Potter, Geo. E., Jersey City.  
 Pringle, Jno., Kearny Township.  
 Pruss, Ed. E., 513 Jersey avenue, Jersey City.  
 Purdy, Chas. H., 293 York street, Jersey City.  
 Putnam, Chas. E., Jersey City.  
 Pyle, Edwin W., Jersey City.  
 Pyle, Wallace, Christ Hospital, Jersey City.  
 Rade, Wm. L., Jersey City.  
 Radue, Wm. F., Jersey City.  
 Ramsey, Murray E., Jersey City.  
 Randall, Chas. H., Kearny.  
 Rechart, H. J., Jersey City.  
 Rector, Jos. M., Jersey City.  
 Reeve, Daniel L., Jersey City.  
 Reid, Jno. W., Kearny Township.  
 Renwick, Andrew G., Jersey City.  
 Rhoads, T. C., Weehawken.  
 Robertson, Fred. C., 88 West Side avenue, Jersey City.  
 Rooney, Jos. G., Weehawken.

Rosenkrans, Jas. H., 826 Hudson street, Hoboken.  
 Rothe, H. E., Harrison.  
 Rowe, Sidney A., Christ Hospital, Jersey City.  
 Rue, Henry B., 233 Garden street, Hoboken.  
 Russell, W. H., Jersey City.  
 Salter, J. E., Bayonne.  
 Sanborn, J. L., Bayonne.  
 Schindele, Theo., Hoboken.  
 Schlemm, Richard, Town of Union.  
 Schoening, Gustivo A., Bayonne.  
 Schofield, R. J., 99 Avenue E, Jersey City.  
 Schultze, Ernest C., Hoboken.  
 Searies, Frank R., 946 Avenue D, Bayonne.  
 Selnow, Frederick C., Jersey City.  
 Sexsmith, Geo. H., Bayonne.  
 Shain, Francis W., Jersey City.  
 Shelby, E. P., 234 Warren street, Jersey City.  
 Shenier, L. H., Town West, New York.  
 Shera, Geo. W., 49 Clinton avenue, Jersey City.  
 Sherrill, Geo. J., Jersey City.  
 Sherwood, H. D., Jersey City.  
 Shiland, Jas. L., Bayonne.  
 Silvers, G. M., Fuller Building, Jersey City.  
 Simon, Chas. I., 902 Hudson street, Hoboken.  
 Simon, S. H., 115 Bergen avenue, Jersey City.  
 Simpson, M. G., Jersey City.  
 Smith, H. Melville, Jersey City.  
 Smith, M. J., Jersey City.  
 Snyder, Chas. F., Jersey City.  
 Somers, Elbert M., Christ Hospital, Jersey City.  
 Spence, Henry, Jersey City.  
 Sprague, Ezra K., Jersey City.  
 Sprague, Seth B., Jersey City.  
 Spring, Fred., Bergen Point (Bayonne).  
 Squier, M. F., Harrison.  
 Stanley, L. G., 409 Bergen avenue, Jersey City.  
 Staples, A. H., Weehawken.  
 Steadman, Evan T., 635 Washington street, Hoboken.  
 Steadman, Walter, 213 Garden street, Hoboken.  
 Steel, G. E., Jersey City.  
 Stellwagen, F. B., Town of Union.  
 Stolfs, F., Jersey City.  
 Strasser, Aug. A., Arlington.  
 Stunt, S. V. W., Jersey City.  
 Straughn, Fred., Jersey City.  
 Sutton, Edward, Bayonne.  
 Sutton, Jno. J., Bayonne.  
 Swartzlander, J. R., City Hospital, Jersey City.  
 Thomas, Julian P., Christ Hospital, Jersey City.  
 Toeffler, Albert, Jersey City.  
 Tracey, Harrie E., 977 Avenue C, Bayonne.  
 Valentine, E. J. G., Jersey City.  
 Vander Back, J., Guttenberg.  
 Van Hoon, J. P., 98 Phillips street, Jersey City.  
 Van Horn, A. F., 115 Jackson avenue, Jersey City.  
 Van Saun, John D., 59 Mercer street, Jersey City.  
 Varick, Wm. R., City Hospital, Jersey City.  
 Varick, Wm. W., Jersey City.  
 Vigna, F., 130 York street, Jersey City.  
 Vondy, Jos. H., Jersey City.  
 Vreeland, Hamilton, Jersey City.

Walter, A. P., Jersey City.  
 Warden, A. W., Town of Union.  
 Ware, Jas. W., 946 Avenue D, Bayonne.  
 Watscheid, A. J., Town of Union.  
 Wayland, A. E., Bayonne Hospital, Bayonne.  
 Watson, W. P., Jersey City.  
 Weeks, Jas. E., 289 Grand street, Jersey City.  
 Weigand, Otto A., Jersey City.  
 West, John E., Jersey City.  
 White, Wallace, West Hoboken.  
 Wienges, Conrad, Jersey City.  
 Wilkinson, George, Jersey City.

Wilkinson, Walter, Jersey City.  
 Williams, John, Arlington.  
 Williams, Thos. D., Jersey City.  
 Willis, Mary A., Jersey City.  
 Wilson, W. S., 158 Coles street, Jersey City.  
 Wolfe, O. F., Jersey City.  
 Wolff, Chas. F., Town of Union.  
 Wolfson, Jos., Jersey City.  
 Wolfstrim, Louis, 211 Hudson street, Hoboken.  
 Yerrington, C. H., 278 Seventh street, Jersey City.  
 Young, H. W., City Hospital, Jersey City.

## Huntdon County.

Alpaugh, Wm. C., High Bridge.  
 Appar, F. A., New Germantown.  
 Bertow, Geo. W., Three Bridges.  
 Berkaw, Willard E., Annandale.  
 Best, Geo. W., Rosemont.  
 Boleau, N. B., Jutland.  
 Burd, T. B. J., Flemington.  
 Clonson, Edw. W., Lambertville.  
 Cornog, Wm. E., Sergeantsville.  
 Cramer, Isaac S., Flemington.  
 Creveling, Chas. F., Reaville.  
 Creveling, P. G., Little York.  
 Crispin, Samuel D., Bloomsbury.  
 Darnell, C. R., Milford.  
 Denny, E. K., Frenchtown.  
 Ewing, J. H., Flemington.  
 Finney, W. F., Frenchtown.  
 Frace, J. M., Clinton.  
 Fritz, John H., Lambertville.  
 Fulper, T. B., Lebanon.  
 Grim, Frank S., Locktown.  
 Halstead, C. F., High Bridge.  
 Harmon, Dr., Frenchtown.  
 Hart, A. M., Ringoes.  
 Herron, T. M. A., Junction.  
 Hunt, Edgar, Glen Gardner.  
 Johnson, F. L., Stanton.  
 Johnson, John V., Stanton.  
 Johnson, Thomas, Readington.

Knight, Wm., Clinton.  
 Larson, C. W., Ringoes.  
 Larson, Frank W., Lambertville.  
 Leidy, E. D., Baptistown.  
 Lindabury, J. S., Bloomsbury.  
 Low, F. C., Junction.  
 Lowe, J. N., Milford.  
 McGill, Peter, Lambertville.  
 Miller, H. H., Lebanon.  
 Miller, John, Calton.  
 Miller, Theo., Calton.  
 Mills, Clifford, Calton.  
 More, E. H., White House.  
 Nash, A. B., Frenchtown.  
 Nixon, Warford L., Readington.  
 Pursell, W. W., White House Station.  
 Race, H., Pittstown.  
 Reigel, E. L., Bloomsbury.  
 Romaine, Geo. L., Lambertville.  
 Schenk, W. H., Flemington.  
 Shenk, Howard, Junction.  
 Silvara, J. W., Ringoes.  
 Snowball, J. W., Flemington.  
 Sayder, Q. E., Quakertown.  
 Sprout, O. H., Flemington.  
 Sites, Jos. A., Lebanon.  
 Van Sickle, S., Clinton.  
 Warrington, W. C., Clinton.  
 Young, Peter C., Ringoes.

## Mercer County.

Adams, C. F., Trenton.  
 Armstrong, Alex., Union street, Trenton.  
 Atkinson, A. W., Trenton.  
 Barwis, E., Trenton.  
 Beatty, H. M., Trenton.  
 Bergen, E. H., 80 Nassau street, Princeton.  
 Brewer, C., Trenton.  
 Brown, C. A., Trenton.  
 Bruere, A. T., Trenton.  
 Bruyere, J., Trenton.  
 Boyles, J. G., 159 Nassau street, Princeton.  
 Cantwell, F. V., Trenton.

Clark, Jr., W. A., Trenton.  
 Cooper, I., Trenton.  
 Cooper, J. R., Trenton.  
 Costill, H. B., Trenton.  
 Craythorn, C. J., Trenton.  
 De Witt, E., Lawrenceville.  
 Dey, A. H., Trenton.  
 Dickinson, E. L., Trenton.  
 Doud, E. J., Trenton.  
 Elmer, Sr., W., Trenton.  
 Fell, A. S., Trenton.  
 Franklin, Geo. H., Hightstown.

Gallager, P. J., Trenton.  
 Griffith, W. H. G., Trenton.  
 Hart, Edgar, Pennington.  
 Hart, Israel, Pennington.  
 Hawke, E. P., Hopewell.  
 Hawke, Edw. P., Trenton.  
 Hollingshead, E., Trenton.  
 Hunt, A. I., Hamilton Square.  
 Jamieson, J. S., Trenton.  
 Jenkins, M., Trenton.  
 Johnson, Dr., Lawrenceville.  
 Johnston, F., Trenton.  
 Johnson, J. P., Hightstown.  
 Kelly, E., Trenton.  
 Kline, A. K., 12 Stockton street, Princeton.  
 Lator, W. S., Trenton.  
 Leavitt, C. B., Trenton.  
 Leavitt, L., Trenton.  
 Loos, I. B., Trenton.  
 Lytle, Wm. J., Princeton.  
 Macdonald, A. K., 11 University Place, Princeton.  
 Mackenzie, T. H., Trenton.  
 Madden, W. F., Trenton.  
 McCullough, J. H., Trenton.  
 McCullough, W. G., Trenton.  
 McGalliard, B. W., Trenton.  
 Miller, John A., Hopewell.  
 More, Geo. R., Hamilton avenue, Trenton.  
 Norton, H. G., Trenton.  
 Oliphant, N. B., Trenton.  
 Parker, G. H., Trenton.  
 Pierson, T. A., Hopewell.  
 Radcliffe, Wm., Pennington.  
 Rice, W., Trenton.

### Middlesex County.

Albright, J. E., South Amboy.  
 Andrus, Chas. H., Metuchen.  
 Applegate, G. T., New Brunswick.  
 Baldwin, Henry R., New Brunswick.  
 Blackwell, L. S., Perth Amboy.  
 Bissett, F. W., South River.  
 Brace, H. M., Perth Amboy.  
 Brakley, P. W., Dunellen.  
 Burnett, C., South River.  
 Carroll, Edgar, Dayton.  
 Clark, S. V. D., New Brunswick.  
 Dana, E. B., Metuchen.  
 Dennelsbeck, Jos., Spottswood.  
 Donahue, F. M., New Brunswick.  
 Dudley, G. S., New Brunswick.  
 English, D. C., New Brunswick.  
 Evans, Sarah E., Selover.  
 Freeman, S. E., Woodbridge.  
 Haines, E. E., South Amboy.  
 Henry, Frank, Perth Amboy.  
 Hoagland, B. W., Woodbridge.  
 Hubbard, W. W., Perth Amboy.  
 Hulst, E. A., Perth Amboy.  
 Hunt, A. Clark, Metuchen.  
 Keasby, W. P., Perth Amboy.  
 Long, Samuel, New Brunswick.  
 Lund, John L., Perth Amboy.  
 Maas, Chas. T., New Brunswick.

Manning, Anna, South Amboy.  
 McKenzie, Wm., Metuchen.  
 Meacham, Thos. V., New Brunswick.  
 Nelson, Wm. J., New Market.  
 Phillips, H. W., Perth Amboy.  
 Ramsey, Wm. E., Perth Amboy.  
 Rice, J. W., New Brunswick.  
 Riva, J. E., Milltown.  
 Shannon, P. A., New Brunswick.  
 Skillman, Thos. A., New Brunswick.  
 Slack, Clarence M., New Brunswick.  
 Smith, A. L., New Brunswick.  
 Spencer, Ira T., Woodbridge.  
 Stephens, David, New Brunswick.  
 Snyder, J. L., Jamesburg.  
 Symmes, H. C., Cranbury.  
 Treganowan, A., South Amboy.  
 Tyrrell, G. W., Perth Amboy.  
 Van Marter, Jno. S., New Brunswick.  
 White, J. Leon, South Amboy.  
 Walsh Patrick J., New Brunswick.  
 Whitaker, J. L. Cranbury.  
 Whitford, M. J., New Market.  
 Williamson, Nicholas, New Brunswick.  
 Wilson, J. H., Perth Amboy.  
 Woods, A. L., South River.  
 Zant, H. D., Jamesburg.

### Monmouth County.

Ackerman, J. F., Asbury Park.  
 Alday, H. B., Ocean Grove.  
 Alday, J. H., Ocean Grove.  
 Anderson, Wm. E., Englishtown.  
 Andrews, R. G., Navesink.  
 Applegate, Asher T., Englishtown.  
 Armstrong, A. A., Fair Haven.  
 Armstrong, W. A., Red Bank.  
 Arrowsmith, Jos. E., Keyport.  
 Baker, G. H., Long Branch.  
 Barr, D. M., Long Branch.  
 Beach, E. W., West Long Branch.  
 Beach, Wm. B., Eatontown.  
 Beegle, I. N., Ocean Grove.  
 Bennett, J. W., Long Branch.  
 Bevin, W. A., Freehold.  
 Bradner, Wesley K., Bradley Beach.  
 Brown, A. G., Red Bank.  
 Bryan, Joseph H., Asbury Park.  
 Budlong, O. W., Belford.  
 Chasey, James, Long Branch.  
 Clark, O. A., Long Branch.  
 Coleman, Fred. F., 607 Grand avenue, Asbury Park.  
 Cook, H. G., Holmdel.  
 Cooper, J. E., Shrewsbury.  
 Crater, E. W., Oceanport.  
 Currie, Mrs. Dr., Ocean Grove.  
 Curtis, T. A., Red Bank.  
 Davison, J. F., Asbury Park.  
 Disbrow, Stephen A., Farmingdale.  
 Ely, J. D., Marlborough.  
 Ewing, Susan, Atlantic Highlands.  
 Fay, Geo. D., Atlantic Highlands.  
 Field, Edwin, Red Bank.  
 Forman, D. McLean, Freehold.  
 Freeman, Otis R., Freehold.  
 Goodenough, J. B., Long Branch.  
 Green, J. O., Long Branch.  
 Haglegam, Richard, Matawan.  
 Hendrickson, Daniel D., Middletown.  
 Hendrickson, H. A., Atlantic Highlands.  
 Hepburn, Wm. M., Freehold.  
 Herbert, R. W., Manasquan.  
 Hetrick, J. A. W., Asbury Park.  
 Hewson, Dr., Spring Lake.  
 Higgins, A. S., Manasquan.  
 Hoagland, Garret G., Keyport.  
 Jackson, A. J., Matawan.  
 Johnson, H. P., Allentown.  
 Johnson, Samuel, Asbury Park.  
 Johnson, W. E., Keyport.  
 Kinnmouth, H. S., Asbury Park.  
 Kinnmouth, Wm. R., Farmingdale.  
 Kirkbride, Dr., Spring Lake.  
 Knecht, C., Matawan.  
 Long, Isaac S., Freehold.  
 Mackintosh, Sarah F., 515 Third avenue, Asbury Park.  
 Marsden, Dr., Red Bank.  
 Maynard, Jas. G., Freehold.  
 McMellen, William T., Perrieville.  
 McMillan, Geo. N., Turkey.  
 Minmouth, W. L., Belmar.  
 Mitchell, Henry, 1205 Grand avenue, Asbury Park.  
 Morton, E., Red Bank.  
 Neafie, Harry, Freehold.  
 Patterson, Wm. F., Chapel Hill.  
 Pemberton, H. H., Long Branch.  
 Price, T. C., Imulaystown.  
 Pumyea, D. B., Allentown.  
 Rafferty, Dr., Red Bank.  
 Reed, J. J., Seabright.  
 Roberts, D. E., Keyport.  
 Rose, J. Turner, West Park.  
 Rush, J. C., Red Bank.  
 Sayre, J. E., Red Bank.  
 Shafer, Geo. W., Cream Ridge.  
 Shaw, R. E., Long Branch.  
 Slocum, W. H., Long Branch.  
 Speck, J. Frank, 514 Bangs avenue, Asbury Park.  
 Stevabarger, Edward, West End P. O.  
 Straughn, C. C., Matawan.  
 Tantum, P. L., Ocean Grove.  
 Taylor, Edw. F., Middletown.  
 Taylor, John, Asbury Park.  
 Thompson, C. H., Belmar.  
 Thompson, Fred V., Holmdel.  
 Toms, F. D., Keyport.  
 Trout, W. W., Spring Lake.  
 Tunis, Geo. S., Manasquan.  
 Tunsting, R. A., Asbury Park.  
 Upham, Ella P., Asbury Park.  
 Van Marter, Jno. H., Atlantic Highlands.  
 Wainwright, J. B., Manasquan.  
 Warner, W. B., Red Bank.  
 Warren, R. B., 603 Third avenue, Asbury Park.  
 Whitmore, W. S., Red Bank.  
 Wilbur, G. F., Asbury Park.  
 Williamson, Alex., Asbury Park.  
 Woolley, J. Scudder, Long Branch.

## Ocean County.

Allen, Howard, New Egypt.  
 Bennett, Edmund, Barnegat  
 Blake, D. W., Forked River.  
 Brower, Frank, Manchester.  
 Buckingham, F. S., Lakewood.  
 Carrigan, E. S., Point Pleasant.  
 Cate, H. H., Lakewood.  
 Davis, William T., Tuckerton.  
 Disbrow, E. C., Toms River.  
 Disbrow, R. L., Toms River.  
 Disbrow, V. M., Lakewood.  
 Hance, I. H., Lakewood.  
 Hawley, B. F., Bay Head.  
 Jones, Ralph, Toms River.  
 Katzenbach, W. H., Bay Head.

Kimball, Paul T., Lakewood.  
 Kimball, W. S., Lakewood  
 Laine, J. L., Manahawkin.  
 Miller, J. Milton, Bay Head.  
 Olmsted, J. B., Tuckerton.  
 Price, T. T., Tuckerton.  
 Reeves, M. V., Tuckerton.  
 Schauflier, W. G., Lakewood.  
 Schureman, I. C., Toms River.  
 Seattles, W. B., Lakewood.  
 Turris, G. S., Burrsville.  
 Whitaker, Frank, Point Pleasant.  
 Woodward, Chas. E., New Egypt.  
 Woodward, Chas. P., New Egypt.

## Passaic County.

Abel, Henry C., Paterson.  
 Agnew, Frank, 29 Hamilton street, Paterson.  
 Alexander, Archibald F., 379 Totowa avenue,  
 Paterson.  
 Armstrong, Robert H., 607 River street, Paterson.  
 Atkinson, Jas. W., 111 North Main street, Paterson.  
 Balleray, Geo. H., 115 Broadway, Paterson.  
 Banta, Jno. H., 119 Broadway, Paterson.  
 Baum, Soma, 70 Second street, Passaic.  
 Berdan, Edith, 113 Ellison street, Paterson.  
 Bibby, Jas. S., 131 Market street, Paterson.  
 Blundell, Chas., Paterson.  
 Blundell, Wm., 236 Main street, Paterson.  
 Borden, D. P., Hamilton and Ellison streets, Paterson.  
 Bowden, David T., 923 Main street, Paterson.  
 Brackenridge, Annie, Paterson.  
 Browne, J. A., Grand and Mill streets, Paterson.  
 Bullen, Victor C., Ellison and Washington streets,  
 Paterson.  
 Cadmus, Wm. J., 13 Church street, Paterson.  
 Campbell, C. M., 642 Main street, Paterson.  
 Carrough, David J., Central Building, Paterson.  
 Carr, Ada, Vreeland avenue, Paterson.  
 Carroll, Wm. H., 125 Jefferson street, Passaic.  
 Chapman, Ernest A., Paterson.  
 Church, Chas. A., 128 Prospect street, Passaic.  
 Colfax, Wm., Pompton Lakes Borough.  
 Coursen, T. D., West Milford.  
 Coursen, W. S., West Milford.  
 Crooks, Jas., 102 Washington street, Paterson.  
 Crounse, D. R., 84 Bloomfield avenue, Paterson.  
 Cummins, Mary G., 299 Summer street, Paterson.  
 Curtis, R. M., 100 Van Houten street, Paterson.  
 Day, H. V., Bloomingdale.  
 DeBaun, Edwin, 142 Main avenue, Passaic.  
 Decker, Wm. F., Church street, Paterson.  
 DeJager, S., Broadway, Paterson.

Demarest, F. F. C., 29 Academy street, Passaic.  
 Denner, Edward F., 155 Ellison street, Paterson.  
 Dittmer, Wm. C., 64 North Main street, Paterson.  
 Drews, H., Main avenue, Passaic.  
 Dunning, Walter L., 700 East Eighteenth street,  
 Paterson.  
 Emerson, Herbert, 197 Park avenue, Paterson.  
 Faulkner, Jas. N., 197 Market street, Paterson.  
 Fausett, Henry A., 123 Broadway, Paterson.  
 Fischer, Geo., Bridge and Fair streets, Paterson.  
 Fitzmaurice, Thos. J., 130 Beech street, Paterson.  
 Flitcroft, Wm., River street, Paterson.  
 Garnett, O. V., 154 Straight street, Paterson.  
 Gillson, Jno. T., 391 Main street, Paterson.  
 Gillson, M. W., 89 Ward street, Paterson.  
 Green, Wm. S., 71 Fair street, Paterson.  
 Harris, P. A., 29 Church street, Paterson.  
 Henggeler, Jacob, 47 Bridge street, Paterson.  
 Henyan, Lucas E., 100 Fair street, Paterson.  
 Hopper, C. P., 411 River street, Paterson.  
 Irving, Frank K., Bloomfield avenue, Passaic.  
 Johnson, W. B., 170 Broadway, Paterson.  
 Jousset, Albert D., 59 Fair street, Paterson.  
 Kane, Thos. J., 349 Grand street, Paterson.  
 Kinne, T. Y. & P. S., 9 Church street, Paterson.  
 Kip, Henry, Paterson street, Paterson.  
 Leal, Jno. L., 194 Broadway, Paterson.  
 Lewis, Henry, Paterson.  
 Luck, Emil P. M., 923 Main street, Paterson.  
 Macintosh, M. A., 251 Straight street, Paterson.  
 MacWithey, A. A., Riverdale.  
 Magennis, B. C., 159 Broadway, Paterson.  
 Maines, R. G., West Milford.  
 Marsh, E. J., Park avenue and East Twenty-  
 seventh street, Paterson.  
 McBride, A. F., 397 Main street, Paterson.  
 McCoy, Jno. C., 158 Broadway, Paterson.  
 Merrill, Jno. R., 24 Church street, Paterson.  
 Merrill, S. R., 15 Church street, Paterson.

Meyers, C. F. W., 108 Broadway, Paterson.  
 Morgan, Ed. B., Paterson.  
 Morgan, J. C., Pompton Lakes Borough.  
 Neer, Rush, 85 Hamilton avenue, Paterson.  
 Neer, Wm., 95 Hamilton avenue, Paterson.  
 Neugrascht, Isaac, Paterson.  
 Newton, W. K., 379 Ellison street, Paterson.  
 Norval, Wm. A., 419 Main street, Paterson.  
 O'Donnell, Jas., 387 Main street, Paterson.  
 O'Grady, Thos. F., 374 Grand street, Paterson.  
 O'Shea, Jos. J., 51 Ward street, Paterson.  
 Parke, Henry, 273 Main street, Paterson.  
 Paton, Thos. L., 108 Broadway, Paterson.  
 Paxton, Jno. P., 117 Church street, Paterson.  
 Pedrick, A. C., 167 Jefferson street, Passaic.  
 Preston, Jos., Paterson.  
 Ricardo, N. C., 67 Passaic avenue, Passaic.  
 Rice, F. H., 79 Bloomfield avenue, Passaic.  
 Rogers, A. W., 285 Broadway, Paterson.  
 Rogers, Benj. A., 113 Paterson street, Paterson.  
 Rogers, Geo. B., 676 East Twenty-fourth street,  
 Paterson.  
 Rundle, Geo. L., Third and Passaic streets, Passaic.  
 Ruppert, John H., 154 Market street, Paterson.  
 Ryan, John N., 27 McLean street, Passaic.  
 Scribner, Chas. H., 53 Ward street, Paterson.  
 Shipper, David W., Wanaque.  
 Silver, Sarah C., 237 Broadway, Paterson.  
 Smith, Jas. W., 33 Clark street, Paterson.  
 Smith, Wm. R., Little Falls.  
 Solatinow, Jacob, 61 Hamilton avenue, Paterson.  
 Solatinow, Jos., Paterson.

Stewart, Jas. M., 181 Van Houten street, Paterson.  
 Stinson, Richard, 517 Broadway, Paterson.  
 Struble, J. H., Main avenue and Washington  
 Place, Passaic.  
 Sullivan, D. W., 320 Passaic street, Passaic.  
 Sullivan, Jno., 320 Passaic street, Passaic.  
 Surmann, Isaac, 53 Bridge street, Paterson.  
 Synnot, Martin J., Little Falls.  
 Terhune, Percy H., 126 Park Place, Passaic.  
 Terhune, Richard A., 162 Gregory avenue, Passaic.  
 Terriberry, Calvin, 116 Broadway, Paterson.  
 Terriberry, Geo. W., 146 Broadway, Paterson.  
 Townsend, S. C., 105 Fair street, Paterson.  
 Uter, S., North Paterson.  
 Uter, Sylvester, Hawthorne.  
 Van Dalsen, Spencer, Paterson.  
 Van Riper, A. Ward, Main avenue, Passaic.  
 Van Riper, Cornelius, Main avenue, Passaic.  
 Van Schott, G. J., Lexington avenue, Passaic.  
 Van Vranken, G., Passaic.  
 Vigna, F., Straight street, Paterson.  
 Vreeland, Frank D., 316 Broadway, Paterson.  
 Vreeland, Geo. W., 21 Rip Van Winkle avenue,  
 Paterson.  
 Welsh, Geo. T., 190 Washington Place, Passaic.  
 Whitey, A. A., Pompton.  
 Wilkinson, Geo. W. V., Paterson.  
 Wiley, S. W., Ward street, Paterson.  
 Williams, H., 150 Monroe street, Passaic.  
 Williams, J. W., 257 Graham avenue, Paterson.  
 Wolfe, A. R., 362 Totowa avenue, Paterson.

## Salem County.

Allen, L. A. D., Woodstown.  
 Atkinson, C. P., Palatine.  
 Barnhart, Newton H., Pennsgrove.  
 Beckett, A. T., Salem.  
 Bilderback, Francis, Salem.  
 Black, Allen B., Pedricktown.  
 Campbell, John, Elmer.  
 Carpenter, Wm. H., Broadway, Salem.  
 Cheeseman, C. P., Elmer.  
 Chevanne, Henry, Salem.  
 Conover, J. V., Elmer.  
 Ewen, Warren L., Alloway.  
 Fitch, Geo. W., Daretown.  
 Flanagan, Henry M., Pennsgrove.  
 Frist, E. A., Salem.  
 Garrison, Daniel, Pennsgrove.  
 Gilman, Uriah, Woodstown.  
 Good, Wm. T., Quinston.  
 Groff, Jno. H., Pennsgrove.  
 Harris, F. B., Canton.

Hires, N. S., Salem.  
 Jackson, Henry, Salem.  
 James, Wm. H., Pennsville.  
 Johnson, Harry T., Pedricktown.  
 McGeorge, Emerson, Woodstown.  
 Miller, L. H., Woodstown.  
 Moore, David, Pennsgrove.  
 Newton, Chas., Sharpstown.  
 Patterson, J. A., Salem.  
 Sharpe, E. S., Salem.  
 Sherron, C. M., Broadway, Salem.  
 Smith, Ellen B., Salem.  
 Smith, W. Scott, Salem.  
 Stitt, Wm. F., Walnut street, Salem.  
 Sowder, P. G., Woodstown.  
 Summerhill, Jno., Pennsgrove.  
 Taylor, Miss Sarah, Woodstown.  
 Waddington, B. A., Salem.  
 Wiley, David, Salem.  
 Woodruff, A. B., Elmer.

## Somerset County.

Adams, Dan'l C., North Plainfield.  
 Beekman, J. B., Pluckamin.  
 Buchman, J. Henry, North Plainfield.  
 Cooley, J. H., North Plainfield.  
 Cooper, J. Howard, Middlebush.  
 Davis, E. C., Bound Brook.  
 Davis, H. V., North Branch.  
 Farrow, E. F., Peapack.  
 Field, Frank L., Liberty Corner.  
 Fisher, C. R. P., Bound Brook.  
 Fisher, Irwin, Harlingen.  
 Flynn, T. H., Somerville.  
 Gaston, Mary, Somerville.  
 Hegerty, Fred W., Bloomington.  
 Hecht, J. P., Raritan.  
 Jones, Fred, Basking Ridge.  
 Lanning, L. M., Somerville.  
 Mathews, B. B., Bound Brook.  
 Mattison, W. E., North Plainfield.

McConaughy, Francis, Somerville.  
 McWilliams, J. F., Somerville.  
 Merrill, Wm. H., South Branch.  
 Mosher, Abram B., Griggstown.  
 Nelson, A., Neshaic Station.  
 Pitts, Alfred, North Plainfield.  
 Reed, L. T., Somerville.  
 Ribble, Wm. B., East Millstone.  
 Robinson, J. T., South Bound Brook.  
 Smalley, M. C., Gladstone.  
 Stillwell, A. L., Somerville.  
 Sutphin, Fred. C., Bernardsville.  
 Swinton, W. J., Somerville.  
 Taylor, S. O. B., Millstone.  
 Tea Eycke, J. D., Franklin Park.  
 Voorhies, A. F., Basking Ridge.  
 Wagoner, H. G., Somerville.  
 Wild, Fred. E., Bound Brook.  
 Zeglio, P. J., 48 Somerset street, North Plainfield.

## Sussex County.

Allen, J. M., Deckertown.  
 Andrus, T. H., Sparta.  
 Beatty, E. E. B., Newton.  
 Burd, L. C., Ogdensburg.  
 Cassidy, A. W., Stillwater.  
 Clark, Jephtha C., Andover.  
 Cole, Jr., Martin, Hainesville.  
 Couse, J. P., Hamburg.  
 Dalrymple, Edw. S., Branchville.  
 Davison, C. H., Stanhope.  
 Dowling, C. E., Sparta.  
 Furgeson, Benj. W., Deckertown.  
 Hamilton, J., Newton.  
 Hedges, Jos., Branchville.  
 Hood, Bruno, Newton.

Hughes, Margan D., Layton.  
 Jacobus, P. N., Newton.  
 McCloughy, J. H., Swartswood.  
 Moore, Jno., Deckertown.  
 Morrison, Ephraim, Newton.  
 Nelden, C. R., Stanhope.  
 Pellet, J. B., Hamburg.  
 Potter, E. B., Newton.  
 Price, J. Cole, Branchville.  
 Rosenberg, L., Andover.  
 Strader, Jno. C., Lafayette.  
 Van Gaesbeck, H. D., Deckertown.  
 Voorhies, Shepard, Newton.  
 Woolfe, Jos., Colesville.

## Union County.

Allen, W. Cornell, Cranford.  
 Allen, Wilforce, Cranford.  
 Ard, F. C., Plainfield.  
 Bailey, Fred. R., 1165 East Jersey street, Elizabeth.  
 Bailey, G. W., 1165 East Jersey street, Elizabeth.  
 Banker, Pierre A., 1156 East Jersey street, Elizabeth.  
 Bebout, T. W., Summit.  
 Berg, J. F., Plainfield.  
 Boone, W. C., Plainfield.  
 Bridgman, Geo. H., 297 North Broad street, Elizabeth.  
 Brown, L. R., 23 West Jersey street, Elizabeth.

Brown, Stanley R., 287 North Broad street, Elizabeth.  
 Browning, W. Kempton, East Fifth street, Plainfield.  
 Burling, Jno., Summit.  
 Burnett, Thos. F., 1158 East Jersey street, Elizabeth.  
 Burpeau, Joseph, 1120 East Jersey street, Elizabeth.  
 Carman, J. H., Plainfield.  
 Cladek, W. E., Rahway.  
 Clawson, M. L., Plainfield.  
 Coles, J. Ackerman, Scotch Plains.  
 Cooper, Sherman, Westfield.

Cory, A. M., New Providence.  
 Crouthers, Anna, 1120 East Jersey street, Elizabeth.  
 Currie, N. W., West Fifth and New streets, Plainfield.  
 Davis, Thos. S., Plainfield.  
 Desmond, Lawrence P., 142 Court street, Elizabeth.  
 Dolan, Thos. E., 86 South Park street, Elizabeth.  
 Donovan, Alfred Q., 138 East Jersey street, Elizabeth.  
 Endicott, C. W., Plainfield.  
 Fritts, J. T., Plainfield.  
 Gale, Wm., Westfield.  
 Green, Jas. R., 340 Westminster avenue, Elizabeth.  
 Grier, E. B., 1145 East Jersey street, Elizabeth.  
 Hallock, F., Plainfield.  
 Hamil, R. H., Summit.  
 Hannath, Wm. H., Wyatt, Roselle.  
 Harris, T. W., Springfield.  
 Harrison, Jos. B., Westfield.  
 Hedges, B. Van D., Plainfield.  
 Hedges, E. W., Plainfield.  
 Holmes, C. B., Rahway.  
 Hough, H. Page, Rahway.  
 Jackson, Dr., Springfield.  
 Jenkins, O. L., Plainfield.  
 Keenan, J. H., 22 West Jersey street, Elizabeth.  
 Keeny, Sarah D., Plainfield.  
 Kinch, Jr., Fred. A., Westfield.  
 Lawrence, Wm. H., Summit.  
 Leary, Joanna, 130 Jefferson avenue, Elizabeth.  
 Livengood, T. L., 1164 East Jersey street, Elizabeth.  
 Long, M. B., Plainfield.  
 Lowrie, H. H., Plainfield.  
 Mack, W. A. M., 36 Third street, Elizabeth.  
 Matthewson, Wm. B., West Front street, Plainfield.  
 McConnell, Jos., Cranford.

McConnell, William, Cranford.  
 McLean, T. N., 1144 East Broad street, Elizabeth.  
 Monfort, Robert, 1057 East Jersey street, Elizabeth.  
 Morton, Jos., 274 North Broad street, Elizabeth.  
 Mraviag, Victor, 1062 East Jersey street, Elizabeth.  
 Murray, W. H., Plainfield.  
 Orchard, Wm., 921 Grove street, Elizabeth.  
 O'Reilly, E. R., 167 Second street, Elizabeth.  
 Pettit, Alonzo, 116 W. Grand street, Elizabeth.  
 Pierson, Henry C., Roselle.  
 Probasco, John E., Plainfield.  
 Quain, Stephen T., 1134 East Jersey street, Elizabeth.  
 Randolph, John M., Rahway.  
 Reilly, J. P., 30 Second street, Elizabeth.  
 Risk, J. Boyd, Summit.  
 Risk, W. H., Summit.  
 Rushmore, E., Plainfield.  
 Sell, F. W., Rahway.  
 Selover, W. U., Rahway.  
 Silvers, Elihu B., Rahway.  
 Sindair, Jr., Robert R., Westfield.  
 Smith, T. V., Westfield.  
 Stern, Arthur, 218 East Jersey street, Elizabeth.  
 Strickland, Geo. W., Roselle.  
 Terrell, Thos., 826 Elizabeth avenue, Elizabeth.  
 Tomlinson, T. H., Plainfield.  
 Turner, W. F., 7 Broad street, Elizabeth.  
 Van Horn, A. F., 452 West Fifth street, Plainfield.  
 Vigner, F. C., 284 N. Broad street, Elizabeth.  
 Voorhees, Nathaniel W., 297 N. Broad street, Elizabeth.  
 Westcott, F. W., Fanwood.  
 Westfall, E. J., Rahway.  
 Whitehead, R. B., 36 Third street, Elizabeth.  
 Wilson, N. L., 288 North street, Elizabeth.  
 Younglove, John, 407 Jefferson street, Elizabeth.

## Warren County.

Albertson, W. C., Belvidere.  
 Allen, Gertrude, Hackettstown.  
 Allen, William C., Delaware.  
 Baird, M. M., Warrington.  
 Barber, Isaac, Phillipsburg.  
 Barber, Thomas, Phillipsburg.  
 Bergen, E. J., Washington.  
 Bieher, L. D., Phillipsburg.  
 Burd, Wm. H., Belvidere.  
 Carhart, Harry L., Blairstown.  
 Cline, C. H., Hackettstown.  
 Cook, Jno. S., Hackettstown.  
 Cox, H. M., Washington.  
 Creveling, Chas., Phillipsburg.

Creveling, Philip G., Broadway.  
 Cummings, G. Wyckoff, Belvidere.  
 Curtis, Frank W., Stewartsville.  
 Dewitt, Jas. D., Harmony.  
 Founk, Harry S., Port Murray.  
 Griffith, J. H., Phillipsburg.  
 Haggerty, F. W., Vienna.  
 Haggerty, L., Danville.  
 Hann, Mrs. Laura, Washington.  
 Hoagland, L. B., Oxford.  
 Huges, Dr., Centerville, Knowlton P. O.  
 Jacoby, A. F., Phillipsburg.  
 Jacobus, P. N., Washington.  
 Johnson, Jno. C., Blairstown.

Johnson, S. H., Asbury.  
 Kline, Wm., Phillipsburg.  
 La Rieu, T. J., Asbury.  
 Lefferts, F. P., Belvidere.  
 Martin, A. E., Hackettstown.  
 McGee, W. H., Belvidere.  
 McKinstry, F. P., Washington.  
 Miller, Jno., Hope.  
 Osmun, L. C., Hackettstown.  
 Reese, J. M., Phillipsburg.  
 Rorback, F., Johnsonsburg.

Smith, C. B., Washington.  
 Stewart, R. A., Phillipsburg.  
 Stiles, Wm., Washington.  
 Swartsweller, Peter E., Belvidere.  
 Tunison, G. O., Oxford.  
 Vansyckle, A. C., Hackettstown.  
 Warrington, Dr., Columbia.  
 West, H. R., Phillipsburg.  
 Williams, Chas. Morgan, Washington.  
 Young, G. C., Washington.

## REPORT OF BACTERIOLOGIST.

BACTERIOLOGICAL LABORATORY,  
 B. MEADE BOLTON, M.D., DIRECTOR,  
 PRINCETON, October 31st, 1898. }

*To the Board of Health of the State of New Jersey, Trenton, N. J.:*

GENTLEMEN—I have the honor to make the following report of the work done in this laboratory for the year ending September 30th, 1898:

As will be seen, the work has consisted in the examination of specimens sent by physicians, the testing of the disinfecting power of formaldehyde vapor, and bacteriological examination of water.

The system adopted for reporting results to physicians and for keeping a record of cases has not been changed, and is fully described in my report published in the report of the board of health for 1897.

Respectfully submitted,

B. MEADE BOLTON.

### I. DIPHTHERIA.

The following table shows that there were 600 specimens examined for diphtheria bacilli during the year, from October 1st, 1897, to October 1st, 1898. Of these 221 were examinations that were repeated of cases previously examined, leaving 379 primary examinations. Of these 216 showed the presence of the diphtheria bacillus:

In 210 cases the ages of the patients were stated.				
58	cases,	or 28	per cent.,	were 5 years or under.
77	"	37	"	" between 5 and 10 years.
30	"	14	"	" 10 " 15 "
17	"	8	"	" 15 " 20 "
28	"	13	"	" 20 " over.

The sex was stated in 205 of the cases in which the diphtheria bacilli were found, and 39 per cent. of them were males, 61 per cent. females.





DIPHTHERIA—Continued.

Date, Week Ending With	Age, Years	Sex	Result	Clinical Diagnosis	SUMMARY FOR EACH WEEK				SUMMARY FOR EACH FOUR WEEKS					
					Primary Examinations	Secondary Examinations	Total Number of Primary and Secondary Examinations	Ages up to	Primary Examinations	Secondary Examinations	Total Number of Primary and Secondary Examinations	Ages up to		
													5	10
		No. of Each Sex												
		M.	F.											
Dec. 2,	6	F.	+	D.	—	—	—	—	—	—	—	—	—	
	20	M.	+	F. Ph.	—	—	—	—	—	—	—	—	—	
	10	F.	+	None.	—	—	—	—	—	—	—	—	—	
	6	F.	+	None.	—	—	—	—	—	—	—	—	—	
	4	F.	+	D.	—	—	—	—	—	—	—	—	—	
	8	F.	—	None.	3	2	4	1	1	1	2	6	—	
Totals,			—		—	—	—	—	—	—	—	—	—	
Dec. 9,	6	M.	+	None.	—	—	—	—	—	—	—	—	—	
	10	F.	+	D.	—	—	—	—	—	—	—	—	—	
	10	F.	+	D.	—	—	—	—	—	—	—	—	—	
	13	M.	+	None.	—	—	—	—	—	—	—	—	—	
	20	F.	+	F. T.	—	—	—	—	—	—	—	—	—	
	4	F.	+	D.	—	—	—	—	—	—	—	—	—	
	20	F.	+	D.	—	—	—	—	—	—	—	—	—	
	7	M.	+	None.	—	—	—	—	—	—	—	—	—	
	7	M.	+	F. T.	—	—	—	—	—	—	—	—	—	
	6	M.	+	F. T.	—	—	—	—	—	—	—	—	—	
	13	M.	+	F. T.	—	—	—	—	—	—	—	—	—	
	18	F.	+	D.	—	—	—	—	—	—	—	—	—	
Totals,			—		10	7	8	25	4	6	2	2	1	9

DIPHTHERIA—Continued.

Date, Week Ending With	Age, Years	Sex	Result	Clinical Diagnosis	SUMMARY FOR EACH WEEK				SUMMARY FOR EACH FOUR WEEKS				
					Primary Examinations	Secondary Examinations	Total Number of Primary and Secondary Examinations	Ages up to	Primary Examinations	Secondary Examinations	Total Number of Primary and Secondary Examinations	Ages up to	
													5
		No. of Each Sex											
		M.	F.										
Dec. 16,	4	F.	+	D.	—	—	—	—	—	—	—	—	—
	11	F.	+	D.	—	—	—	—	—	—	—	—	—
	30	F.	+	F. T.	—	—	—	—	—	—	—	—	—
	2	F.	+	None.	—	—	—	—	—	—	—	—	—
	4	F.	+	D.	—	—	—	—	—	—	—	—	—
	4	F.	+	None.	—	—	—	—	—	—	—	—	—
	10	F.	+	D.	—	—	—	—	—	—	—	—	—
	4	F.	+	D.	—	—	—	—	—	—	—	—	—
	4	F.	+	D.	—	—	—	—	—	—	—	—	—
	6	F.	+	D.	—	—	—	—	—	—	—	—	—
	13	M.	+	None.	—	—	—	—	—	—	—	—	—
	8	F.	+	D.	—	—	—	—	—	—	—	—	—
Totals,			—		11	6	2	18	6	3	3	2	11
Dec. 23,	20	F.	+	D.	—	—	—	—	—	—	—	—	—
	20	M.	+	D.	—	—	—	—	—	—	—	—	—
	8	F.	+	D.	—	—	—	—	—	—	—	—	—
	1	F.	+	D.	—	—	—	—	—	—	—	—	—
Totals,			—		7	9	9	16	2	1	2	1	3



## DIPHTHERIA—Continued.

Date, Week Ending With.	Age, Years.	Sex.	Result.	Clinical Diagnosis.	SUMMARY FOR EACH WEEK.															
					Primary Examinations.					Secondary Examinations.					Total Number of Primary and Secondary Examinations.	Ages up to			No. of Each Sex.	
					+	-				+	-				Total Number of Primary and Secondary Examinations.	5	10	15	20	Over 20
Dec. 30.	20	F.	+	T.																
	21	M.	+	D.																
	23	F.	+	Sp.																
	34	F.	+	None.																
	10	F.	+	D.																
	22	F.	+	F.																
	22	M.	+	F.																
	24	F.	+	F.																
	12	M.	+	None.																
	8	M.	+	D.																
	8	M.	+	L.																
	11	F.	+	None.																
Totals.						4	7			7	10	2	3	2	1	4	5	7		
Jan. 6.	6	F.	+	D.																
1898	23	F.	+	D.																
	23	F.	+	D.																
	23	F.	+	D.																
	26	F.	+	None.																
Totals.						3	2			5	10	1	2		2			5		
Jan. 13.	9	F.	+	T.																
	16	M.	+	D.																
	3	F.	+	D.																
	4	F.	+	D.																
	11	M.	+	D.																
	14	M.	+	D.																
	13	F.	+	D.																
	20	F.	+	D.																
Totals.						7	1			6	14	4	2	2	2			3	5	

## DIPHTHERIA—Continued.

Date, Week Ending With.	Age, Years.	Sex.	Result.	Clinical Diagnosis.	SUMMARY FOR EACH WEEK.															
					Primary Examinations.					Secondary Examinations.					Total Number of Primary and Secondary Examinations.	Ages up to			No. of Each Sex.	
					+	-				+	-				Total Number of Primary and Secondary Examinations.	5	10	15	20	Over 20
Jan. 20.	2	F.	+	None.																
	19	M.	+	F. Ph.																
	9	F.	+	F.																
	19	F.	+	F.																
	21	M.	+	D.																
	5	M.	+	None.																
	6	M.	+	D.																
	2	F.	+	D.																
	10	F.	+	D.																
Totals.						3	7			6	15	3	4	1	1	1	5	6		
Jan. 27.	4	M.	+	D.																
	20	M.	+	D.																
	14	M.	+	D.																
	8	F.	+	F. T.																
	8	M.	+	D.																
	8	M.	+	D.																
	8	M.	+	None.																
	2	M.	+	T.																
	6	F.	+	D.																
	6	F.	+	F. T.																
	30	F.	+	F. T.																
	13	F.	+	None.																
Totals.						8	4			6	18	6	2	2	1	1	6	7		
Feb. 8.	4	F.	+	D.																
	14	M.	+	None.																
	46	F.	+	D.																
	23	M.	+	Some Throat.																
	12	M.	+	D.																
	13	M.	+	D.																
	13	M.	+	T.																
	4	F.	+	D.																
	17	M.	+	None.																
	18	M.	+	None.																
Totals.						7	6			9	22	3	2	3	3	2	3	8	7	6

DIPHTHERIA—Continued.

Date Ending Week	Age, Years	Sex	Result	Clinical Diagnosis	SUMMARY FOR EACH WEEK.																			
					Primary Examinations.	Number of Secondary Examinations.	Total Number of Primary and Secondary Examinations.	Ages up to					No. of Each Sex.											
								5	10	15	20	Over 20	M.	F.										
Feb. 10.	4	F.	+	D.																				
	20	M.	+	D.																				
	12	F.	+	None.																				
	12	F.	+	None.																				
Totals,																								
Feb. 17.	3	M.	+	None.																				
	6	F.	+	D.																				
	12	M.	+	D.																				
	23	M.	+	D.																				
	8	M.	+	None.																				
	10	F.	+	None.																				
	16	F.	+	None.																				
Totals,																								
Feb. 24.	27	M.	+	D.																				
	1	F.	+	D.																				
	5	F.	+	D.																				
	17	F.	+	D.																				
	13	F.	+	None.																				
	3	F.	+	None.																				
	11	F.	+	D.																				
	5	F.	+	D.																				
Totals,																								
March 3.	11	F.	+	D.																				
	27	F.	+	F.T.																				
	32	F.	+	D.																				
	8	F.	+	D.																				
	9	M.	+	D.																				
	9	F.	+	D.																				
	15	F.	+	D.																				
	10	F.	+	D.																				
Totals,																								

DIPHTHERIA—Continued.

Date Ending Week	Age, Years	Sex	Result	Clinical Diagnosis	SUMMARY FOR EACH WEEK.																			
					Primary Examinations.	Number of Secondary Examinations.	Total Number of Primary and Secondary Examinations.	Ages up to					No. of Each Sex.											
								5	10	15	20	Over 20	M.	F.										
March 10.	11	F.	-	D.																				
	13	M.	+	D.																				
	13	F.	+	D.																				
	40	F.	-	None.																				
	13	F.	-	D.																				
	1	M.	-	D.																				
Totals,																								
March 17.	13	F.	-	?																				
	7	F.	-	D.																				
	6	F.	-	D.																				
	6	F.	-	D.																				
	6	F.	-	D.																				
	28	F.	+	F.T.																				
Totals,																								
March 24.	21	M.	-	None.																				
	23	F.	-	C.T.																				
	13	M.	-	D.																				
	11	F.	-	D.																				
Totals,																								
March 31.	6	F.	+	D.																				
	16	F.	-	F.T.																				
	6	F.	-	None.																				
	6	F.	+	D.																				
Totals,																								

DIPHTHERIA—Continued.

Date, Week Ending With.	Age, Years.	Sex.	Result.	Clinical Diagnosis.	SUMMARY FOR EACH WEEK.																
					Primary Examinations.					Secondary Examinations.											
					+	-	No. of Examinations.	6	10	15	20	Over 20	No. of Each Sex.								
April 7,	5	F.	+	D.	1																
	8	F.	+	F.T.																	
	9	M.	+	D.																	
	8	F.	+	D.																	
	4	F.	+	D.																	
	5	M.	+	D.																	
Totals,						6	2	2	10	3	1	2	0								
April 14,	3	M.	+	D.																	
	13	M.	+	D.																	
	8	F.	+	D.																	
	4	F.	+	D.																	
	5	M.	+	D.																	
Totals,						5	1	4	10	5	1	1									
April 21,	9	F.	+	D.																	
	12	F.	+	D.																	
	11	M.	+	D.																	
Totals,						4		15	19	1	3										
April 28,	30	M.	-	D.																	
	23	F.	+	D.																	
	16	M.	+	D.																	
	21	F.	+	D.																	
	22	F.	+	D.																	
	7	F.	+	D.																	
	27	M.	+	None.																	
	27	M.	+	D.																	
Totals,						6	2	9	17	2	1	1	3	4	5						

DIPHTHERIA—Continued.

Date, Week Ending With.	Age, Years.	Sex.	Result.	Clinical Diagnosis.	SUMMARY FOR EACH WEEK.																
					Primary Examinations.					Secondary Examinations.											
					+	-	No. of Examinations.	6	10	15	20	Over 20	No. of Each Sex.								
May 5,	10	M.	+	D.																	
	11	M.	+	D.																	
	10	F.	+	D.																	
	9	F.	+	D.																	
	38	M.	+	D.																	
Totals,						4	2	6	12	4	1	1	8	3							
May 12,	18	F.	+	D.																	
	6	M.	+	D.																	
	24	M.	+	D.																	
	16	M.	+	None.																	
	20	M.	+	None.																	
	25	F.	+	F.T.																	
	7	F.	+	D.																	
Totals,						7	1	9	18	1	2	4	2	6	3						
May 19,	7	F.	+	None.																	
	12	M.	+	D.																	
	13	M.	+	D.																	
	38	M.	+	None.																	
	10	M.	+	D.																	
	4	F.	+	D.																	
Totals,						5	1	13	20	1	2	2	2	3	3						
May 26,	16	F.	+	D.																	
	8	F.	+	D.																	
	9	F.	+	D.																	
	4	M.	+	D.																	
Totals,						3		9	13	1	2	1	1	1	3						
June 2,	3	F.	+	D.																	
	6	F.	+	None.																	
	7	F.	+	None.																	
Totals,						4		6	10	3											

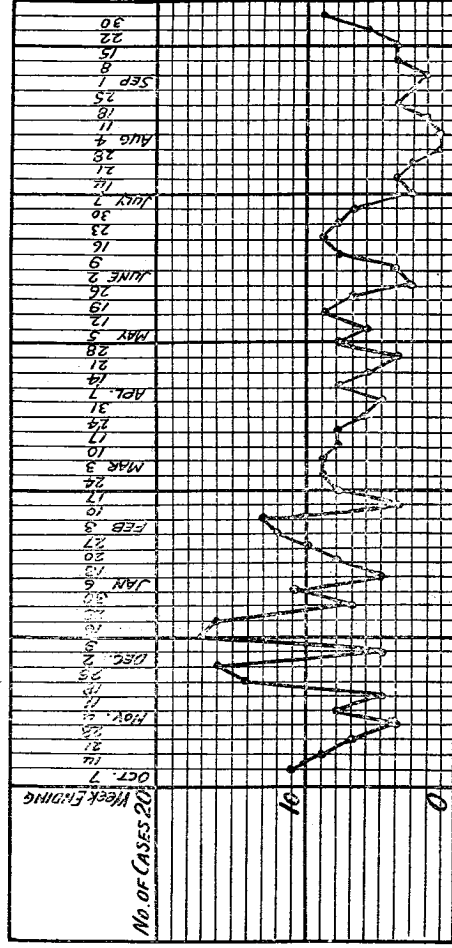
\*Child.



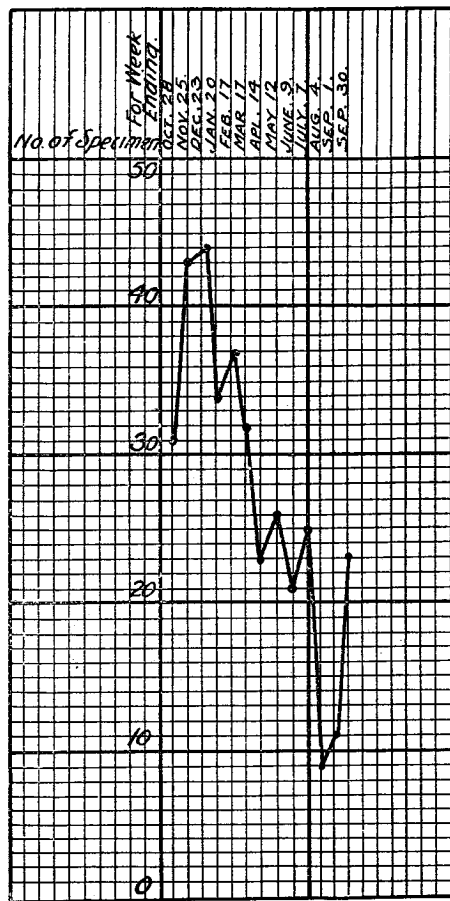
DIPHTHERIA—Continued.

Date, Week Ending	Age, Years.	Sex.	Result.	Clinical Diagnosis.	SUMMARY FOR EACH WEEK.				SUMMARY FOR EACH FOUR WEEKS.				No. of Each Sex.											
					Primary Examinations.	Secondary Examinations.	Total Number of Examinations.	Ages up to	Primary Examinations.	Secondary Examinations.	Total Number of Examinations.	Ages up to												
					+	-		5	10	15	20	Over 20	+	-		5	10	15	20	Over 20				
Sept. 1	7	F.	No growth.	D.	+	-																		
	10	F.	-	D.																				
Totals,																								
Sept. 8,	26	F.	+	U. T.																				
	2	F.	+	D.																				
	8	F.	+	None.																				
Totals,																								
Sept. 15,	22	F.	+	None.																				
	29	F.	+	D.																				
	11	F.	+	None.																				
Totals,																								
Sept. 22,	8	M.	+	D.																				
	20	M.	+	T.																				
	6	M.	+	None.																				
	18	M.	+	D.																				
	22	M.	+	D.																				
Totals,																								
Sept. 30,	4	F.	+	D.																				
	6	F.	+	D.																				
	9	M.	+	D.																				
	33	F.	+	D.																				
	6	M.	+	D.																				
	11	M.	+	D.																				
	2	F.	+	None.																				
	27	F.	-	None.																				
Totals,																								
				Total for the year.																				

There were 11 cases during the year in which the bacteriological examination was not satisfactory, as explained above. There were 8 cases in which no growth was obtained on the culture medium inoculated with the swab. There were 13 cases in which no sex was stated.



NUMBER OF SPECIMENS EXAMINED FOR THE DIPHTHERIA BACILLUS FOR EACH WEEK, FROM OCTOBER 7TH, 1897, TO OCTOBER 1, 1898, SECONDARY EXAMINATIONS NOT INCLUDED.



NUMBER OF SPECIMENS EXAMINED FOR THE DIPHTHERIA BACILLUS EACH FOUR WEEKS, FROM OCTOBER 1ST, 1897, TO OCTOBER 1ST, 1898, SECONDARY EXAMINATIONS NOT INCLUDED.

## II. TUBEROULOSIS.

As will be seen, from the following tables, there were 516 specimens examined for tubercle bacilli. Of these 21 were from persons whose sputum had already been examined; 220 specimens were found to contain the tubercle bacilli. Taking those cases in which tubercle bacilli were present, and making a study of the ages where these are stated, it will be seen that there were the following numbers between the periods mentioned:

Years, 10 and under, 1 case — per cent.

10 to 20, 27 cases, 14 per cent.

20 to 25, 51 " 26 "

25 to 30, 37 " 19 "

30 to 35, 30 " 15 "

35 to 40, 15 " 8 "

40 to 45, 11 " 6 "

45 to 50, 10 " 5 "

50 to 55, 7 " 4 "

55 to 60, 5 " 3 "

Over 60, 5 " 3 "

It, moreover, will be seen that 66 per cent. of the cases were between 10 and 35 years of age.

In 473 cases the sex was stated, showing that there were 53 per cent. of females. This includes all cases sent for examination, whether tubercle bacilli were found or not. Of those cases where the bacilli were found, and where the sex is stated, there are very nearly the same number of males as of females—105, or 49 per cent. males; 110, or 51 per cent. females.

*Explanation of the Tables.*—Under the column "Result" the + sign indicates that the tubercle bacilli were found; the — sign indicates that the tubercle bacilli could not be found.

## TUBERCULOSIS.

Week Ending	Age, Years.	Sex	Result.	SUMMARY FOR EACH WEEK.							SUMMARY FOR EACH FOUR WEEKS.												
				Primary Examinations		Secondary Examinations		Total No. of Examinations		Ages up to		Primary Examinations		Secondary Examinations		Total No. of Examinations		Ages up to		No. of Each Sex.			
				+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	Over 60	M.
Oct. 7,	50	M.	+																				
	20	F.	+																				
	22	F.	+																				
	7	F.	+																				
	30	M.	+																				
	35	F.	+																				
Totals,				3	4			7	1	2	1	1											
Oct. 14,	35	M.	-																				
	30	M.	-																				
	25	F.	+																				
	17	M.	-																				
Totals,				3	2			5	2	1	1												
Oct. 21,	24	F.	+																				
	25	M.	+																				
	45	M.	+																				
	38	F.	-																				
	17	F.	+																				
	30	F.	+																				
	46	M.	+																				
	21	M.	+																				
Totals,	35	F.	-																				
				3	6			1	12	1	4	2	1	1									

## TUBERCULOSIS—Continued.

Week Ending	Age, Years.	Sex	Result.	SUMMARY FOR EACH WEEK.							SUMMARY FOR EACH FOUR WEEKS.												
				Primary Examinations		Secondary Examinations		Total No. of Examinations		Ages up to		Primary Examinations		Secondary Examinations		Total No. of Examinations		Ages up to		No. of Each Sex.			
				+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	Over 60	M.
Oct. 28,	30	F.	+																				
	28	M.	+																				
	23	M.	+																				
	19	M.	+																				
	50	F.	+																				
	38	M.	+																				
	32	F.	-																				
	32	F.	-																				
Totals,				2	7			9	1	2	1	1											
Nov. 4,	56	M.	+																				
	35	F.	+																				
	50	M.	+																				
	50	F.	+																				
	50	F.	+																				
	19	F.	+																				
	45	F.	+																				
	32	F.	+																				
	80	M.	+																				
	80	F.	+																				
Totals,				7	5			12	1	3	1	1											
Nov. 11,	38	F.	+																				
	12	F.	+																				
	37	F.	+																				
	35	M.	+																				
	42	M.	+																				
	10	M.	+																				
	36	M.	+																				
	36	M.	+																				
Totals,				4	6			10	1	1	2	2	1										















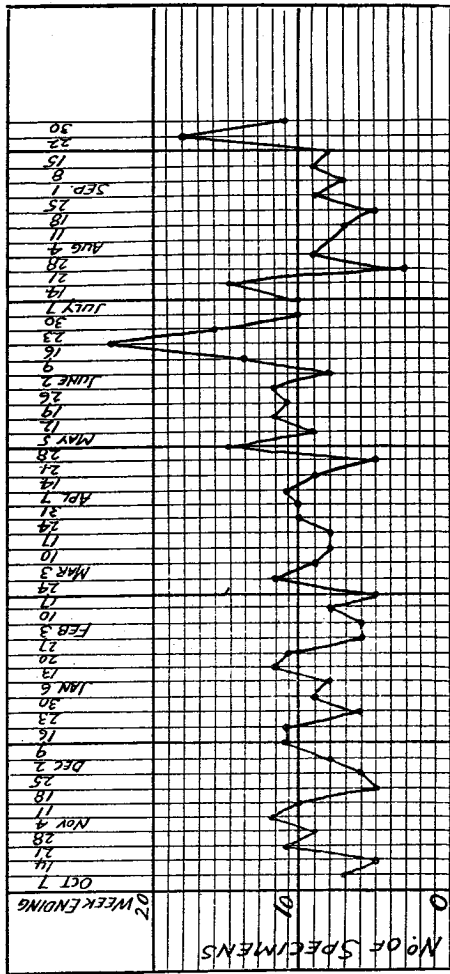


TUBERCULOSIS—Continued.

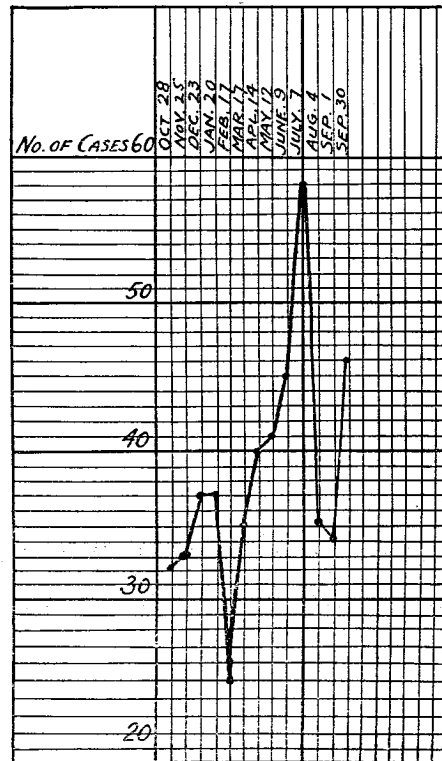
Week Ending	Age, Years.	Sex.	Result.	SUMMARY FOR EACH WEEK.																
				Primary Examinations.		Total No. of Examinations.	Ages up to					No. of Each Sex.								
				+	-		10	20	30	35	40	45	50	55	60	Over 60	M.	F.		
Sept. 8.	28	F.	+																	
	23	F.	+																	
	45	M.	+																	
	53	M.	+																	
	54	F.	+																	
	23	F.	+																	
	47	F.	+																	
	28	M.	+																	
Totals,				6	4	0	1	1	1	3										
Sept. 15.	17	M.	+																	
	?	F.	+																	
	26	F.	+																	
	12	M.	+																	
	19	F.	+																	
	19	F.	+																	
	32	M.	+																	
Totals,				4	4	2	10	3	1	1	1									
Sept. 22.	20	F.	?																	
	20	F.	F.																	
	45	M.	+																	
	63	F.	+																	
	38	F.	+																	
	30	F.	+																	
	30	F.	+																	
	19	F.	+																	
	21	M.	+																	
	17	M.	+																	
	24	F.	+																	
	20	F.	?																	
Totals,				2	10	18	4	3	3	1	1									

TUBERCULOSIS—Continued.

Week Ending	Age, Years.	Sex.	Result.	SUMMARY FOR EACH WEEK.																	
				Primary Examinations.		Total No. of Examinations.	Ages up to					No. of Each Sex.									
				+	-		10	20	30	35	40	45	50	55	60	Over 60	M.	F.			
Sept. 30.	27	M.	+																		
	23	M.	+																		
	50	M.	+																		
	?	M.	+																		
	22	M.	+																		
	66	F.	+																		
	25	F.	+																		
	38	M.	+																		
	30	M.	+																		
Totals,				4	7	11	1	3	1	2											
				220	379	21	520	12	70	92	77	59	40	25	27	19	9				
Total for the year,																					



NUMBER OF SPECIMENS EXAMINED FOR TUBERCLE BACILLI FOR EACH WEEK, FROM OCTOBER 1ST, 1897, TO OCTOBER 1ST, 1898, SECONDARY EXAMINATIONS NOT INCLUDED.



NUMBER OF SPECIMENS EXAMINED FOR TUBERCLE BACILLI FOR EACH FOUR WEEKS, FROM OCTOBER 7TH, 1897, TO OCTOBER 7TH, 1898, SECONDARY EXAMINATIONS NOT INCLUDED.







## TYPHOID FEVER—Continued.

Week Ending	Age, Years.	Sex.	SUMMARY FOR EACH WEEK.														No. of Each Sex.										
			Primary Examinations							Secondary Examinations								Ages up to		Total No. of Examinations							
			+		-		?		+		-		?		10-20			20-30		30-35		45-50		55-60		Over 60	
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Feb. 24.	35	F	+																								
7	M	+																									
Totals,			2																								
March 3.	?	F	?																								
31	F	+																									
29	F	+																									
19	M	+																									
7	M	+																									
17	F	+																									
10	M	+																									
13	F	+																									
Totals,			8																								
March 10.	?	F	+																								
21	F	+																									
20	F	+																									
17	M	+																									
9	F	+																									
1	M	+																									
16	M	+																									
3	F	+																									
Totals,			7																								
March 17.	9	F	+																								
7	F	+																									
31	M	+																									
30	M	+																									
30	M	+																									
28	M	+																									
25	M	+																									
Totals,			5																								
March 24.	10	M	+																								
30	F	+																									
Totals,			2																								

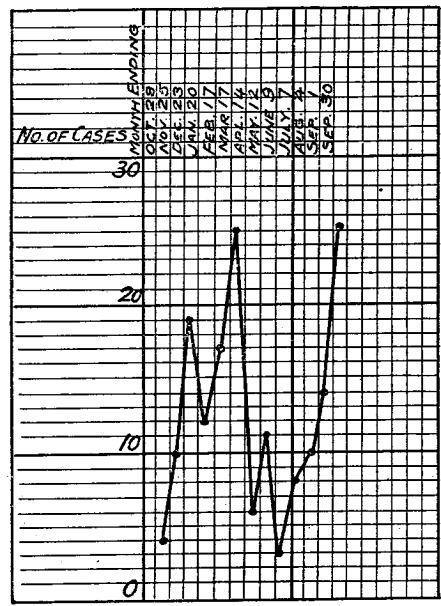
## TYPHOID FEVER—Continued.

Week Ending.	Age, Years.	Sex.	SUMMARY FOR EACH WEEK.														No. of Each Sex.										
			Primary Examinations							Secondary Examinations								Ages up to		Total No. of Examinations							
			+		-		?		+		-		?		10-20			20-30		35-40		45-50		55-60		Over 60	
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
March 31.	11	M	+																								
April 7.	?	F	+																								
Totals,			1																								
April 14.	14	M	+																								
6	M	+																									
Totals,			2																								
April 21.	23	F	+																								
8	F	+																									
Totals,			3																								
April 28.	8	F	+																								
9	M	+																									
Totals,			3																								
May 6.	42	M	+																								
16	F	+																									
25	M	+																									
35	F	+																									
28	M	+																									
Totals,			1																								
May 12.	?	F	+																								
Totals,			1																								
May 19.	19	F	+																								
May 26.	?	F	+																								
Totals,			1																								
June 2.	13	M	+																								
20	F	+																									
Totals,			1																								

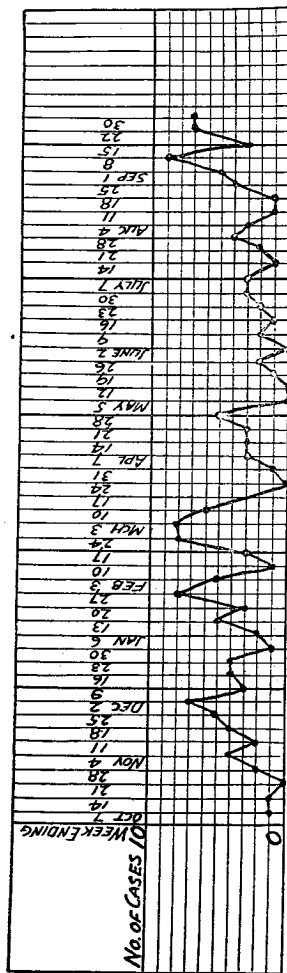


TYPHOID FEVER—Continued.

Week Ending.	Age, Years.	Sex.	Result.	SUMMARY FOR EACH WEEK.				SUMMARY FOR EACH FOUR WEEKS.				No. of Each Sex.					
				Primary Examinations.	Secondary Examinations.	Total No. of Examinations.	Ages up to			Primary Examinations.	Secondary Examinations.	Total No. of Examinations.	Ages up to			Over 60	
							10-20	20-30	30-60				M	F.	M		F.
Sept. 15, 1897, Totals.	24	F	+	1	2	3	1	1	2								
	12	F	+														
Sept. 22, 1897, Totals.	23	M	+														
	4	F	+														
	31	M	+														
	13	M	+														
	6	F	+														
	45	M	+														
Sept. 30, 1897, Totals.	40	M	+														
	32	M	+														
	27	F	+														
	6	M	+														
	20	M	+														
	17	M	+														
				33	28	89	76	10	63	26	32	25	24	112	3	3	8



NUMBER OF SPECIMENS EXAMINED FOR TYPHOID FEVER FOR EACH MONTH, FROM OCTOBER 1ST 1897, TO OCTOBER 1ST, 1898, SECONDARY EXAMINATIONS NOT INCLUDED.



NUMBER OF SPECIMENS EXAMINED FOR TYPHOID FEVER FOR EACH WEEK, FROM OCTOBER 1ST, 1897, TO OCTOBER 1ST, 1898.  
SECONDARY EXAMINATIONS NOT INCLUDED.

#### IV. DISINFECTION OF BOOKS.

Quite a number of tests were made of the value of formaldehyde vapor in the disinfection of books. In some of the tests silk threads saturated with beef tea cultures of the micro-organisms and dried were placed between the leaves of the book, in others the leaves of the books were wet with the beef tea cultures. Books so prepared were exposed to the formaldehyde fumes.

A number of tests were made with books so prepared in an ordinary packing-case, the fumes allowed to enter through the bottom of the box. But it was found impossible to close the cracks in the box sufficiently to prevent the fumes escaping. So the subsequent tests were made in an ice-box, about three cubic feet capacity, the cracks around the lid made tight with paraffine. Results obtained in this way were very satisfactory with the use of formalin. With the use of the Scherings lamp the results were not so good. With this method, by using two pastils, disinfection of the books was effected in forty-eight hours, but not in four and one-half or in eighteen hours.

Complete disinfection of the books was effected by using  $2\frac{1}{2}$  c. c. of formalin was measured out into the tin pan, the pan placed over an alcohol flame under an opening in the bottom of the chest. A tin funnel was used to direct the fumes up through the opening.

The tables below show that complete disinfection of the books was effected with  $2\frac{1}{2}$  c. c. of formalin in as short a time as five hours.

## DISINFECTION OF BOOKS

Date. No.	Micro Org.-nism.	Manner of Exposure	Length of Exposure, in H urs	Results + Growth - No Growth.	Remarks.
7, 4, '98					
1	Typhoid, S. . . . .	Book infected with a bouillon culture. In some of them, indicated by S, a string was placed between the leaves, so as to allow the gas a better chance.	23	—	Exposure made in the ice chest, with 5 cc. of formalin boiled away.
2	Anthrax Spores, S. . . . .		24	—	
3	Diphtheria, S. . . . .		25	—	
4	Typhoid, . . . . .		23	—	
5	Anthrax Spor-s. . . . .		24	—	
6	Diphtheria, . . . . .		23	—	
8, 4, '98					
7	Anthrax Spores, S. . . . .	As above, . . . . .	67	—	18, 4, . . . . . As above All the formalin was not volatilized. There was a solid residue in the pan.
8	Anthrax Spores, S. . . . .		67	—	
9	Typhoid, S. . . . .		67	—	
10	Typhoid, . . . . .		67	—	
11	Diphtheria, S. . . . .		67	—	
12	Diphtheria, . . . . .		67	—	
11, 4					
13	Anthrax Spores, S. . . . .	As above, . . . . .	25	—	Ice chest. 5 cc. formalin.
14	Anthrax Spores, . . . . .		25	—	
15	Typhoid, S. . . . .		25	—	
16	Typhoid, . . . . .		25	—	
17	Diphtheria, S. . . . .		25	—	
18	Diphtheria, . . . . .		25	—	
19	Anthrax Spores, S. . . . .	As above, . . . . .	42	—	In ice chest. 2½ cc. formalin
20	Anthrax Spores, . . . . .		42	—	
21	Typhoid, S. . . . .		42	—	
22	Typhoid, . . . . .		42	—	
23	Diphtheria, S. . . . .		42	—	
24	Diphtheria, . . . . .		42	—	
25	Anthrax Spores, S. . . . .	As above, . . . . .	25	—	Ice chest. 2½ cc. formalin.
26	Anthrax Spores, . . . . .		25	—	
27	Typhoid, S. . . . .		25	—	
28	Typhoid, . . . . .		25	—	
29	Diphtheria, S. . . . .		25	—	
30	Diphtheria, . . . . .		25	—	
31	Anthrax Spores, S. . . . .	As above, . . . . .	24	—	As in 19-30.
32	Anthrax Spores, . . . . .		24	—	
33	Diphtheria, S. . . . .		24	—	
34	Diphtheria, . . . . .		24	—	
35	Typhoid, S. . . . .		24	—	
36	Typhoid, . . . . .		24	—	
37	Anthrax Spores, S. . . . .	As above, . . . . .	17	—	As in 19-36.
38	Anthrax Spores, . . . . .		17	—	
39	Typhoid, S. . . . .		17	—	
40	Typhoid, . . . . .		17	—	
41	Diphtheria, S. . . . .		17	—	
42	Diphtheria, . . . . .		17	—	
42 a	Anthrax Spores, S. . . . .	As above, . . . . .	5	—	As in 19-42
43	Anthrax Spores, . . . . .		5	—	
44	Typhoid, S. . . . .		5	—	
45	Typhoid, . . . . .		5	—	
46	Diphtheria, S. . . . .		5	—	
47	Diphtheria, . . . . .		5	—	

\* Contaminated.

V. RESULTS OBTAINED FROM TESTS OF THE DISINFECTING POWER OF FORMALDEHYDE VAPOR, CHLORINE GAS AND THE FUMES OF BURNING SULPHUR. INFECTED THREADS SENT TO MR. D. C. BOWEN, SECRETARY OF THE BOARD OF HEALTH, ASBURY PARK, N. J., AND RETURNED BY HIM AFTER EXPOSURE TO THE DISINFECTANT.

Following are the results obtained by cultures from silk threads soaked in bouillon cultures of the micro organisms and dried, and then exposed to formaldehyde vapor in the manner described in the tables below. One set of tests was made using the fumes of burning sulphur, and one set with fumes of chlorine gas instead of formaldehyde vapors.

In the columns of "Results" the sign indicates that the micro-organisms grew and therefore the disinfection was inefficacious. The — sign shows the reverse.

It will be seen, therefore, that disinfection took place usually where the micro-organisms were freely exposed to the vapors of formaldehyde. Where the micro-organisms were more or less protected the action of the fumes was uncertain.

In the tests with chlorine gas the typhoid and diphtheria bacilli were killed, but the anthrax spores were not.

The tests with sulphur fumes show very imperfect or no sterilization.

No.	Micro-Organism.	Manner of Exposure.	Length of Exposure, in H urs	Results + Growth - No Growth.	Remarks.
1	Typhoid Fever, . . . . .	While disinfecting an eight-room house, . . . . .	20	—	Robinson's Lamp. Four quarts alcohol.
2	Diphtheria, . . . . .		20	—	
3	Anthrax Spores, . . . . .		20	+	
4	Diphtheria, . . . . .		0	+	
5	Diphtheria, . . . . .	Air-tight box, 1½ cu. ft. Between the leaves of a book, . . . . .	64	—	½ ounce of formalin sprayed into the box with an atomizer through a hole.
6	Typhoid Fever, . . . . .	Freely exposed, . . . . .	64	—	
7	Anthrax Spores, . . . . .	Freely exposed, . . . . .	64	—	
8	Typhoid Fever, . . . . .	In an envelope containing piece of blotting paper wet with formalin, . . . . .	24	—	
		In bed-rooms.			
9	Anthrax Spores, . . . . .	Free exposure, . . . . .	19	—	Room contained 2,187 cu. ft. of space. Two Robinson's lamps were used and 2 qts. of alcohol. These threads may have been too old for the test. B.)
10	Anthrax Spores, . . . . .	Free exposure, . . . . .	19	—	
11	Typhoid Fever, . . . . .	Free exposure, . . . . .	19	—	
12	Diphtheria, . . . . .	Free exposure, . . . . .	19	—	
13	Diphtheria, . . . . .	Free exposure, . . . . .	19	—	
14	Diphtheria, . . . . .	On a mattress covered with a pillow, . . . . .	19	—	
15	Typhoid Fever, . . . . .	Between eight folds of blanket, . . . . .	19	+	
16	Diphtheria, . . . . .	Check test, . . . . .	0	+	
17	Anthrax Spores, . . . . .	Check test, . . . . .	0	+	
18	Typhoid Fever, . . . . .	Check test, . . . . .	0	+	

No.	Micro-Organism.	Manner of Exposure	Length of Exposure, in Hours.	Results. + Growth, - No Growth.	Remarks.
19	Anthrax Spores, . . . . .	Bed-room on the second floor. Free exposure, . . . . .	18	++	Room contained 2,150 cu. ft. Robinson's lamp. One quart of alcohol. Threads all fresh.
20	Typhoid Fever, . . . . .	Free exposure, . . . . .	18	++	
21	Typhoid Fever, . . . . .	Between two pillows, . . . . .	18	++	
22	Typhoid Bacilli, . . . . .	In tight box, . . . . .	7	-	Box contains 1 cu. ft. 4 oz of formalin placed in a shallow pan in the box.
24	Anthrax Spores, . . . . .	Between the leaves of a book, . . . . .	7	+	
25	Anthrax Spores, . . . . .	Free exposure, . . . . .	7	++	
26	Typhoid Bacilli, . . . . .	Between the leaves of a book, . . . . .	7	++	
27	Typhoid Bacilli, . . . . .	Free exposure, . . . . .	8	-	Room contained 900 cu. ft. One pint of alcohol used in a Robinson lamp. Temperature of the air in the room 70° F.
28	Diphtheria Bacilli, . . . . .	Between blanket, . . . . .	8	+	
29	Typhoid Bacilli, . . . . .	Between two quilts, . . . . .	8	+	
30	Anthrax Spores, . . . . .	Free exposure, . . . . .	8	++	
31	Diphtheria Bacilli, . . . . .	Between pillows, . . . . .	8	++	
32	Diphtheria Bacilli, . . . . .	Free exposure, . . . . .	8	++	
27a	Diphtheria Bacilli, . . . . .	Exposures the same as the corresponding numbers above, . . . . .	8	-	
28a	Diphtheria Bacilli, . . . . .	Exposures the same as the corresponding numbers above, . . . . .	8	+	New Robinson lamp, otherwise as above. All cultures contaminated. 28a and 32a may have been crowded out by contaminations.
29a	Anthrax Spores, . . . . .	Exposures the same as the corresponding numbers above, . . . . .	8	+	
30a	Anthrax Spores, . . . . .	Exposures the same as the corresponding numbers above, . . . . .	8	++	
31a	Diphtheria Bacilli, . . . . .	Exposures the same as the corresponding numbers above, . . . . .	8	++	
32a	Diphtheria Bacilli, . . . . .	Exposures the same as the corresponding numbers above, . . . . .	8	0	
33	Diphtheria Bacilli, . . . . .	Free exposure, . . . . .	8	-	Room contained about 1,500 cu. ft. One quart alcohol used in Robinson lamp.
34	Diphtheria Bacilli, . . . . .	Between pillows, . . . . .	8	-	
35	Diphtheria Bacilli, . . . . .	Between carpet, . . . . .	8	-	
36	Diphtheria Bacilli, . . . . .	In folds of a wrap, . . . . .	8	-	
37	Anthrax Spores, . . . . .	Free exposure, . . . . .	8	-	
38	Diphtheria Bacilli, . . . . .	Check test, . . . . .	0	-	
39	Anthrax Spores, . . . . .	Check test, . . . . .	0	-	
40	Anthrax Spores, . . . . .	Air-tight Box, . . . . .	1	+	Box contained 12 cu. ft of space. Robinson's lamp, 100 cc. alcohol for 40, 41 and 42; another 100 cc. continued for 43, 44, 45 and 46.
41	Typhoid Fever, . . . . .	Between the leaves of a book, . . . . .	1	+	
42	Diphtheria, . . . . .	Between the leaves of a book, . . . . .	1	++	
43	Typhoid Fever, . . . . .	Between the leaves of a book, . . . . .	3	+	
44	Typhoid Fever, . . . . .	Between the leaves of a book, . . . . .	3	+	
45	Anthrax Spores, . . . . .	Between the leaves of a book, . . . . .	3	++	
46	Anthrax Spores, . . . . .	Between the leaves of a book, . . . . .	3	+	
47	Typhoid Fever, . . . . .	Room, . . . . .	11	-	2,350 cu. ft.; 8 oz. of water evaporated. Temperature, 68° F. Robinson's lamp, 3 pints of alcohol.
48	Anthrax Spores, . . . . .	Free exposure, . . . . .	11	+	
49	Anthrax Spores, . . . . .	Room, . . . . .	6	++	3,351 cu. ft.; 16 oz. water evaporated. Temperature, 72° F. 2 Robinson's lamps, 5 pints of alcohol
50	Anthrax Spores, . . . . .	Free exposure, . . . . .	6	++	
51	Anthrax Spores, . . . . .	Free exposure, . . . . .	6	++	
52	Typhoid Fever, . . . . .	Covered with a blanket, . . . . .	6	-	
53	Diphtheria, . . . . .	Air-tight Box, . . . . .	20	-	Box as above
54	Anthrax Spores, . . . . .	Free exposure, . . . . .	20	-	
55	Diphtheria, . . . . .	Between the leaves of a book, . . . . .	20	+	
56	Anthrax Spores, . . . . .	Between the leaves of a book, . . . . .	20	+	
57	Anthrax Spores, . . . . .	In a clothes-press, 84 cu. ft. between the leaves of an old book, . . . . .	24	+	Robinson Lamp. 1 quart alcohol
58	Diphtheria Bacillus, . . . . .	Between the leaves of an old book, . . . . .	24	+	
59	Typhoid Bacillus, . . . . .	Between the leaves of an old book, . . . . .	24	+	
60	Diphtheria Bacillus, . . . . .	In a clothes-press, 84 cu. ft. between the leaves of a new book, . . . . .	24	+	As above.
61	Typhoid Bacillus, . . . . .	Between the leaves of a new book, . . . . .	24	+	
62	Anthrax Spores, . . . . .	Between the leaves of a new book, . . . . .	24	+	

No	Micro-Organism.	Manner of Exposure.	Length of Exposure, in Hours.	Results. + Growth, - No Growth	Remarks.
63	Diphtheria Bacillus, . . . . .	In the same press, but left freely exposed on a shelf, . . . . .	24	+	As above.
64	Typhoid Bacillus, . . . . .	exposed on a shelf, . . . . .	24	+	
65	Anthrax Spores, . . . . .	exposed on a shelf, . . . . .	24	+	
66	Anthrax Spores, . . . . .	In a close box between the leaves of a new book, . . . . .	24	+	6 ounces of formalin in a shallow pan. Three-fourths of formalin had evaporated
67	Typhoid Bacillus, . . . . .	of a new book, . . . . .	24	+	
68	Diphtheria Bacilli, . . . . .	of a new book, . . . . .	24	+	
69	Typhoid Bacillus, . . . . .	In a close box, between the leaves of an old book, . . . . .	24	+	As above.
70	Diphtheria Bacillus, . . . . .	of an old book, . . . . .	24	+	
71	Anthrax Spores, . . . . .	of an old book, . . . . .	24	+	
72	Typhoid Bacillus, . . . . .	In a close box, exposed freely in the box, . . . . .	24	-	As above.
73	Diphtheria Bacillus, . . . . .	exposed freely in the box, . . . . .	24	-	
74	Anthrax Spores, . . . . .	exposed freely in the box, . . . . .	24	+	
75	Diphtheria Bacillus, . . . . .	On the floor, covered with a pair of woolen drawers, unprotected on the bureau, . . . . .	16	+	
76	Anthrax Spores, . . . . .	On the floor, covered with a pair of woolen drawers, unprotected on the bureau, . . . . .	16	+	
77	Typhoid Bacillus, . . . . .	On window-ledge, covered with table-spread, folded in a pillow, . . . . .	16	-	
78	Anthrax Spores, . . . . .	On window-ledge, covered with table-spread, folded in a pillow, . . . . .	16	+	
79	Typhoid Bacillus, . . . . .	On window-ledge, covered with table-spread, folded in a pillow, . . . . .	16	+	
80	Diphtheria Bacillus, . . . . .	Suspended near a stove-pipe hole opening in the chimney, . . . . .	24	-	
81	Diphtheria, . . . . .	Suspended near a stove-pipe hole opening in the chimney, . . . . .	24	-	
80½	Diphtheria Bacillus, . . . . .	Back of tin plate covering the above hole, . . . . .	24	+	
81	Diphtheria, . . . . .	Back of tin plate covering the above hole, . . . . .	24	+	
81	Diphtheria, . . . . .	Air-tight box, . . . . .	24	-	¾ or burned sulphur and 2½ oz. of water steamed into the box through the hole.
82	Anthrax, . . . . .	Free exposure, . . . . .	24	+	
83	Typhoid, . . . . .	Free exposure, . . . . .	24	+	
84	Diphtheria, . . . . .	Between the leaves of an old book, . . . . .	24	+	
85	Anthrax, . . . . .	Between the leaves of an old book, . . . . .	24	+	
86	Typhoid, . . . . .	Between the leaves of an old book, . . . . .	24	+	
87	Diphtheria, . . . . .	Between the leaves of a new book, . . . . .	24	+	
88	Typhoid, . . . . .	Between the leaves of a new book, . . . . .	24	+	
89	Anthrax, . . . . .	Between the leaves of a new book, . . . . .	24	+	
90	Diphtheria, . . . . .	In a damp closet, between layers blotting paper for 29 days, . . . . .	24	+	
91	Diphtheria, . . . . .	In a dry room, on desk, between layers blotting paper for 29 days, . . . . .	24	+	
92	Typhoid, . . . . .	Free, . . . . .	19	-	Tight box, 12 cubic feet. Chlorine gas admitted through rubber hose for 1½ hours.
93	Diphtheria, . . . . .	Free, . . . . .	19	-	
94	Anthrax, . . . . .	Free, . . . . .	19	-	
95	Typhoid, . . . . .	Between leaves of an old book, . . . . .	19	-	
96	Diphtheria, . . . . .	Between leaves of an old book, . . . . .	19	-	
97	Anthrax, . . . . .	Between leaves of an old book, . . . . .	19	-	
98	Typhoid, . . . . .	Between leaves of a new book, . . . . .	19	-	
99	Diphtheria, . . . . .	Between leaves of a new book, . . . . .	19	-	
100	Anthrax, . . . . .	Between leaves of a new book, . . . . .	19	+	
101	Typhoid, . . . . .	Free, . . . . .	19	-	
102	Diphtheria, . . . . .	Free, . . . . .	19	-	Solution of formalin put in tight box 1½ cu. ft.
103	Anthrax, . . . . .	Free, . . . . .	19	-	
104	Typhoid, . . . . .	Between leaves of a new book, . . . . .	19	-	
105	Diphtheria, . . . . .	Between leaves of a new book, . . . . .	19	-	
106	Anthrax, . . . . .	Between leaves of a new book, . . . . .	19	+	
107	Diphtheria, . . . . .	Free, . . . . .	12	-	
108	Diphtheria, . . . . .	Free, . . . . .	12	+	Robinson's generator. 1 qt. alcohol. In a room 1,344 cu. ft.
109	Typhoid, . . . . .	Free, . . . . .	12	+	
110	Typhoid, . . . . .	Between 4 folds of a blanket, . . . . .	12	+	
111	Anthrax, . . . . .	Free, . . . . .	12	+	
112	Anthrax, . . . . .	Free, . . . . .	12	+	
112	Anthrax, . . . . .	Free, . . . . .	12	+	

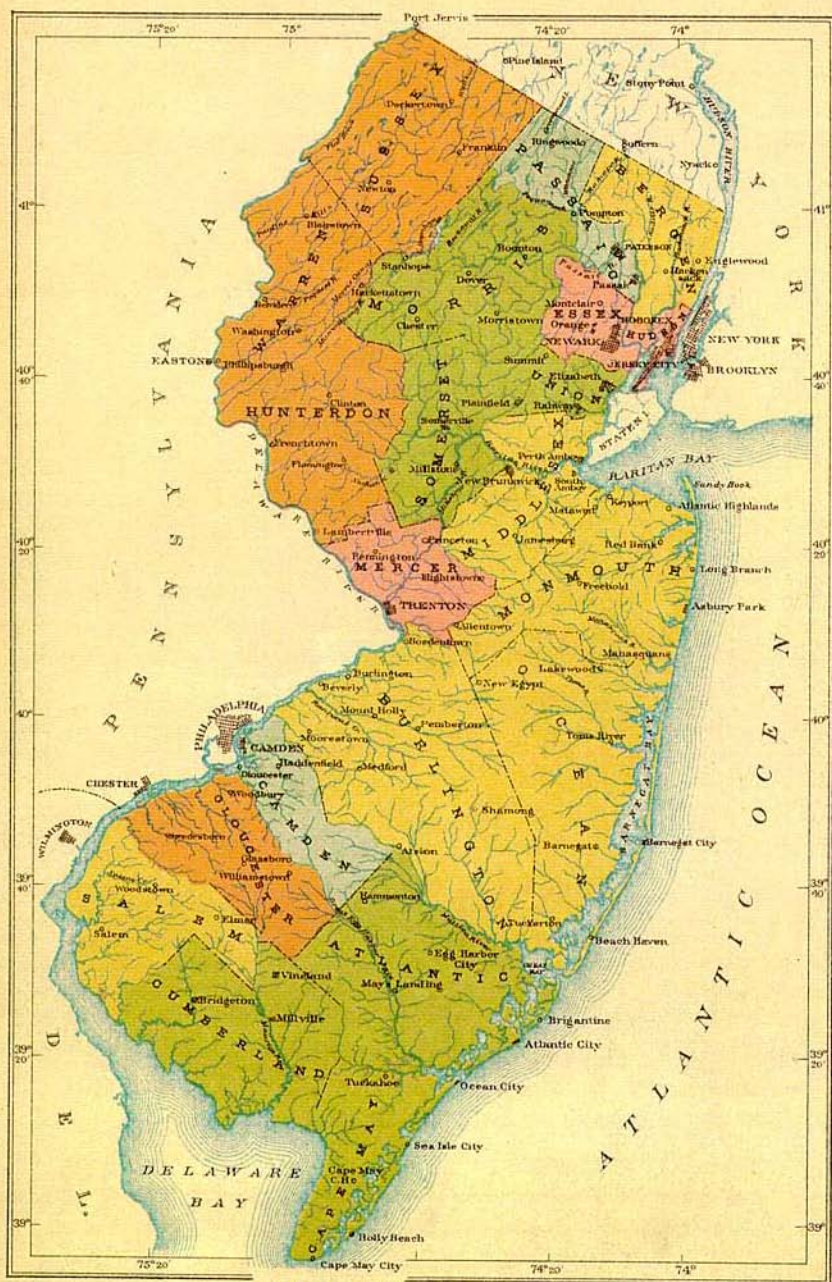


No.	Micro-Organism.	Manner of Exposure.	Length of Exposure, in Hours.	Results.	Remarks.
				+ Growth. - No Growth	
113	Diphtheria.			**	
114	Diphtheria.			**	
113a	Anthrax.			+++	Robinson's generator. 1 qt. alcohol. In a room 720 cu ft.
114a	Anthrax.			+++	
116	Typhoid.			+++	
117	Typhoid.			+++	
118	Diphtheria.			+++	
119	Diphtheria.			+++	
120	Anthrax.	Control. No exposure.		+++	
121	Diphtheria.	Control. No exposure.		+++	
122	Typhoid.	Control. No exposure.		+++	

\* Contaminated.

Table Showing Character of Work Performed, with Number and Date of Examination, for Year Ending September 30, 1898.

WEEK ENDING	Diphtheria	Tuberculosis	Typhoid Fever (Blood)	Malaria	Gonorrhoea	Fox Oryzantium	Water Analysis	Fluorescing Power of Formaldehyde	Milk Preservatives	Vitamins	Milk	Eggs	Stools and Urine for Tuberculosis	Totals
October 7, 1897	18	9	19	7	14	2								65
October 14, 1897	7	6	12	9	10	5								53
October 21, 1897	1	0	2	0	4	3								10
October 28, 1897	2													2
November 4, 1897	1	0	2	0	4	3								10
November 11, 1897	1	0	2	0	4	3								10
November 18, 1897	1	0	2	0	4	3								10
November 25, 1897	1	0	2	0	4	3								10
December 2, 1897	1	0	2	0	4	3								10
December 9, 1897	1	0	2	0	4	3								10
December 16, 1897	1	0	2	0	4	3								10
December 23, 1897	1	0	2	0	4	3								10
December 30, 1897	1	0	2	0	4	3								10
January 6, 1898	1	0	2	0	4	3								10
January 13, 1898	1	0	2	0	4	3								10
January 20, 1898	1	0	2	0	4	3								10
January 27, 1898	1	0	2	0	4	3								10
February 3, 1898	1	0	2	0	4	3								10
February 10, 1898	1	0	2	0	4	3								10
February 17, 1898	1	0	2	0	4	3								10
February 24, 1898	1	0	2	0	4	3								10
March 3, 1898	1	0	2	0	4	3								10
March 10, 1898	1	0	2	0	4	3								10
March 17, 1898	1	0	2	0	4	3								10
March 24, 1898	1	0	2	0	4	3								10
March 31, 1898	1	0	2	0	4	3								10
April 7, 1898	1	0	2	0	4	3								10
April 14, 1898	1	0	2	0	4	3								10
April 21, 1898	1	0	2	0	4	3								10
April 28, 1898	1	0	2	0	4	3								10
May 5, 1898	1	0	2	0	4	3								10
May 12, 1898	1	0	2	0	4	3								10
May 19, 1898	1	0	2	0	4	3								10
May 26, 1898	1	0	2	0	4	3								10
June 2, 1898	1	0	2	0	4	3								10
June 9, 1898	1	0	2	0	4	3								10
June 16, 1898	1	0	2	0	4	3								10
June 23, 1898	1	0	2	0	4	3								10
June 30, 1898	1	0	2	0	4	3								10
July 7, 1898	1	0	2	0	4	3								10
July 14, 1898	1	0	2	0	4	3								10
July 21, 1898	1	0	2	0	4	3								10
July 28, 1898	1	0	2	0	4	3								10
August 4, 1898	1	0	2	0	4	3								10
August 11, 1898	1	0	2	0	4	3								10
August 18, 1898	1	0	2	0	4	3								10
August 25, 1898	1	0	2	0	4	3								10
September 1, 1898	1	0	2	0	4	3								10
September 8, 1898	1	0	2	0	4	3								10
September 15, 1898	1	0	2	0	4	3								10
September 22, 1898	1	0	2	0	4	3								10
September 29, 1898	1	0	2	0	4	3								10
Totals for Year	18	9	19	7	14	2								65



MAP OF NEW JERSEY

Showing number of persons living to one death  
 from phthisis for year ending June 30, 1897.

400 to 500	500 to 600	600 to 700	700 to 800	800 to 900
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# THE DISTRIBUTION OF TUBERCULOSIS IN NEW JERSEY.<sup>1</sup>

BY GUY HINSDALE, M. D., OF PHILADELPHIA.

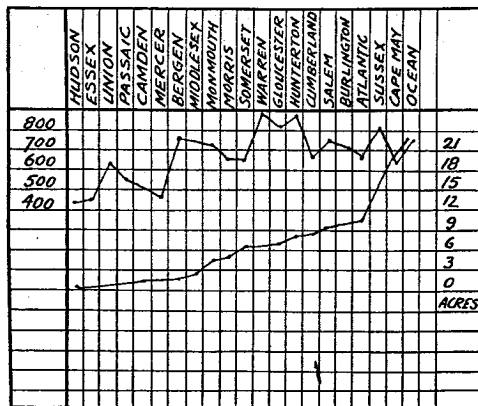
The distribution of tuberculosis in New Jersey suggests some interesting features, which are well shown in the accompanying map, in the preparation of which I have used the report of the State board of health of New Jersey, for the year ending June 30th, 1897; an excellent system of registration making it possible to give a correct idea of the distribution of this disease throughout the State. As I have previously shown for the States of Pennsylvania and New York, wide variations are present in different regions of the State, but the various degrees of prevalence of tuberculous disease correspond in great measure with well-known facts relating to tuberculosis. In New Jersey there are not such wide variations in the frequency of tuberculous disease, in proportion to population, as in the case of New York and Pennsylvania, in which States there are counties in which the disease is three or four times as rare as in more densely populated districts. In New Jersey the counties in which the larger cities are situated show a prevalence only twice as great as in the sparsely settled regions. It will be noted that Hudson, Essex and Mercer counties, in which are situated Jersey City, Newark and Trenton, have from 400 to 500 persons living for every death from pulmonary tuberculosis, while Sussex, Warren, Hunterdon and Gloucester counties have between 800 and 900 persons living for every death annually from the same disease.<sup>2</sup> The remaining counties are plotted to show the three intermediate grades. The reasons for this variation may be accounted for as follows: In the first place, elevation above tide does not play a part, as it apparently does so plainly in the case of Pennsylvania. In New Jersey, on the other hand, we find that one of the counties,

<sup>1</sup> Read at the Fifteenth Annual Meeting of the American Climatological Association, September 1, 1898.

<sup>2</sup> It should be stated here that, by the returns for the year ending June 30, 1898, three counties, by a largely diminished death-rate, take precedence of any of the counties in the above-mentioned group. These are Cape May, Monmouth and Somerset counties, and for the year just closed they each have over 1,000 persons living for every annual death from pulmonary tuberculosis.

Gloucester, in South Jersey, is quite low, but it belongs to the group in which tuberculosis is least frequent. It is at least as low as the three counties in which the disease is most prevalent. Neither are there any natural protecting influences, such as forests, which influence the distribution of the disease in this State. The entire southern half of New Jersey is flat, and abounds in vast tracts of pine forest, but we find it principally a variety of hard yellow pine, known as scrub-pine and scrub-oak, and not the great forest trees met with in the highlands of Pennsylvania and New York. In the northern and northwestern parts of New Jersey the surface is more diversified, and even mountainous, reaching elevations of nearly 1,800 feet, and the hillsides abound in hemlock and spruce. The soil in the northern half of New Jersey is largely a red clay, with outcroppings of sandstone, and, in the northeastern portions, trap-rock. In Essex county there are positive evidences of a great prehistoric lake, called Lake Passaic. Its southern portion is the present site of a great swamp. The soil of the southern half of the State, or at least south of the latitude of Camden, is principally sand, which reaches in places, such as Lake-wood, to a depth of 600 or 700 feet. But the character of the soil would seem to have little, if any, influence in the present instance in modifying the presence and distribution of tuberculosis.

It is *density of population* that bears the closest relation to the distribution of tuberculosis in New Jersey. This is true in all commu-



PERSONS LIVING TO EACH ANNUAL DEATH FROM PHTHISIS, COMPARED WITH ACREAGE TO EACH INHABITANT.

nities, and it is well borne out in the present instance. The accompanying chart shows this graphically. The counties that have less than one acre to each inhabitant are Hudson, Essex, Union and Passaic. These all have a high death-rate from tuberculosis. On the other hand, Atlantic, Sussex, Cape May, Monmouth and Ocean counties have a low death-rate. Four of these are maritime counties. Sussex is the furthest removed from the sea, and embraces the highest land in the State. It adjoins Pike county, in Pennsylvania, one of the wildest and one of the most healthful counties in that Commonwealth. The three counties, Sussex, Warren and Hunterdon, are all inland counties, comprising high, well-drained territory, not closely settled, and embracing the most picturesque portion of the State.

In Mercer county, in which is situated the capital of New Jersey, the death-rate from tuberculosis is found to be twice as great among men as among women. Investigation shows that the men work in the potteries of Trenton. If it were not for the potteries in this district, perhaps the results from Mercer county might be a little better.

The causation of pulmonary diseases among potters in the city of Trenton has received some attention, and in an article on this subject Dr. E. M. Hunt (1883) says:

"All the facts as to the perils of this industry point to impalpable dust, constrained positions and sudden alternations of heat and cold as the causes of shortened lives and of pulmonary diseases, so common as to have made the potters' asthma a designation for a class of chronic ailments which kill many, and are life-long to many more. These causes so far admit of removal or amelioration, and are so destructive in their character, that the means of proper cleansing, ventilation and heating, the management of dust and the details of method, should be closely inquired into. In no department in our State is there more need of close inspection, and of such law as will relieve this skillful working-class from evils alike destructive of life, of health and of prosperity."

It is unfortunate, on some accounts, that travelers through New Jersey do not, as a rule see a more attractive landscape. They generally pass through a flat, uninteresting country. Few visit the hills in the northern and northwestern portions, and these undeveloped districts, if more accessible to the larger cities, would, no doubt, be highly prized and largely sought.

It is encouraging to note that pulmonary tuberculosis is diminishing in New Jersey, just as it is declining in neighboring communities. The number of deaths for the year ending June 30th, 1897, was 3,237,

which was 121 less than the previous year, and 255 less than the average for the ten years 1887-1896.\*

The health authorities of New Jersey are keenly alive to the necessity of informing the public as to the means by which the disease is propagated and the best methods of prevention. The early recognition of the disease will greatly aid one's chance for recovery, but a little money expended by the State in prevention is better than hundreds of thousands of dollars spent in cure. Circular No. 83, of the New Jersey State board of health, has been ordered to be placed in the hands of every family in the State in which a case of tuberculosis exists. Dr. Henry Mitchell, the secretary, has distributed many thousands of these circulars, which explain the cause and means of communicability. Practical information is given as to the location and construction of houses; the quality of food; the disposition of sputa; the cleansing and disinfection of carpets and rooms.

COUNTIES IN NEW JERSEY.	Estimated population in 1887.	Deaths from pulmonary tuberculosis.	Persons living to each annual death from pulmonary tuberculosis.	Acres to each inhabitant.
Atlantic.....	37,114	56	663	10.6
Bergen.....	72,461	95	762	2.1
Burlington.....	60,061	85	706	9.5
Camden.....	105,070	206	501	1.4
Cape May.....	13,489	21	642	21.0
Cumberland.....	51,555	77	669	8.5
Essex.....	334,000	739	452	25
Gloucester.....	32,207	40	805	6.7
Hudson.....	349,260	812	430	.11
Hunterdon.....	35,334	40	883	7.9
Mercer.....	87,762	185	474	1.6
Middlesex.....	73,378	101	733	2.8
Monmouth.....	78,109	108	714	4.4
Morris.....	61,710	92	671	5.0
Ocean.....	19,135	25	765	22.6
Passaic.....	144,499	262	551	.9
Salem.....	26,456	35	756	9.4
Somerset.....	31,301	47	666	6.2
Sussex.....	22,596	23	982	15.6
Union.....	90,578	146	620	.7
Warren.....	37,575	42	894	6.2

\* The total number of deaths from pulmonary tuberculosis for the year ending June 30th, 1898, is 3,325, a further reduction. A recent communication from Dr. Henry Mitchell, Secretary of the State board of health of New Jersey, shows that the counties in which an actual reduction has been noted are Atlantic, Bergen, Camden, Cape May, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Somerset and Warren, a majority of the counties in the State.

## SAND FILTER BEDS AT SALEM, N. J.

BY CHURCHILL HUNGERFORD, C. E., NEW YORK CITY.

The filter beds under process of construction at Salem are designed to purify the reservoir water of the Salem water works. The reservoir is about half a mile long, four hundred feet wide and, when full, has an average depth of water of less than five feet. Its shallowness, together with its soft, muddy bottom, renders the reservoir a particularly suitable place for the growth of aquatic plants, and in consequence an extremely objectionable taste and odor is developed in the water every fall. In addition, the water possesses some color and considerable turbidity. It is principally to remove these objectionable features that the plant is being constructed, although the increasing population on the drainage area of the reservoir has been a growing menace to the health of the consumer.

A series of deep wells deliver about three hundred thousand gallons daily of clear but hard water, and when this is mixed with the reservoir water, it causes a considerable increase in the odor by the time it has reached the consumer.

The filters are two in number and are of the well-known "slow sand filtration" type. They are placed in separate basins, each of which is 95 feet square and ten feet deep. The basins are formed in the earth and have clay embankments. The filter beds are three feet deep and rest on the bottom of the basins. They have a combined area of 7,200 square feet, and consist of one foot of gravel—through which run collecting lines of vitrified pipe—and two feet of sand. The gravel is washed and separated by screens into three different sizes, and great care has been taken to have the sand of a uniform degree of fineness. The unfiltered water is maintained on the surface of the sand at a depth of four feet.

In operating, the water is pumped from the reservoir to the filters and then passes slowly through the sand, leaving its impurities on the

surface. The filtered water is collected from the gravel by the vitrified pipe and led to a covered receiving-chamber, in which is a regulator that prevents the filters from operating at more than a stated rate, but which automatically adjusts itself to the ever-varying head of water in the clear-water chamber in such a manner that the filter can at all times deliver the maximum quantity it is designed to filter, provided, of course, its surface has not become clogged.

The offensive odor developed during the summer and fall necessitates thorough aeration of the water, and to accomplish this the pump is arranged to take air and force it into the main with the water before it enters the filters. In addition to this, the inlet is placed three feet above the water-level and is provided with a spreader, which exposes the water to the air in a thin film or in drops. Where extraordinary aeration is required, a nozzle can be attached to the inlet pipe and the water thrown in small streams to a considerable height.

Should any trouble arise from the formation of ice on the beds, the warm artesian well-water—temperature about 50° F.—can be pumped into the filters and this, it is believed, will remove the ice whenever desired.

At the German standard rate of filtration the filters have a daily capacity of 424,000 gallons.

The total cost of the plant in round numbers is five thousand dollars.

## NEW JERSEY SANITARY ASSOCIATION.

The twenty-third annual meeting of this association, held in Lakewood, December 10th and 11th, 1897, was well attended, and an active interest in the proceedings was maintained by the members present throughout the session.

Mr. M. O. Leighton, health officer of Montclair, read a paper on "Vicissitudes of Health Inspectors." He said:

Trouble begins at once after the accession of the inspector to office, and multiplies. He is well abused. In the milk inspection he worked personally; supervised the analysis of the milk, the bacteriologic department and the inspection of the dairies. In cases of contagious disease he studied the source of infection, superintended the disposal of ashes and garbage, as also the plumbing. To these duties he added the examination of nuisances and a number of other matters. Complaints give a ludicrous series of pictures from noisy cows to vicious dogs, troublesome geese, leaky roofs and neighborhood quarrels. He is sure to make enemies unless he is extremely fortunate. A gentleman brings a bottle of water, shall we drink this? One must labor with him, pacify him; make him know that it is not necessarily baneful, even if it is muddy. He departs and talks learnedly of bacteria and albuminoid ammonia for a week. The next knows all about disease germs from the newspapers; boils his water and milk; suspects an epidemic in every dust cloud; diphtheria has broken out in his block, wants to know if it will be better to move away to his summer home till the case is well. Nothing but intelligent reasoning will do with him. He is shown the fact that there is no danger to his family, that the case is well isolated, can not extend, and to move may be a change for the worse. The next has no complaint nor quarrel with her neighbors, but wishes to inform the health board that so and so exists in such a place, but does not wish her name to be mentioned. Now, in nine out of ten such cases there is no cause for complaint. The next desires information as to the general health of the place, what contagious diseases exist. Such a visit is pleasant, and the inspector wants more of such. In the eyes of the citizen the health inspector occupies a peculiar position. The laws have invested him with powers so extensive and so useful that it is well to know him. In order to be of service in the most efficient manner, he is confronted with many ideas as to what is best to do in each case. He must not believe in a weakened policy, nor advocate a two-faced principle. He must reach the same end by paths which conform to the idiosyncrasies of those with whom he has to deal. Tact, honest, old-fashioned tact, is needed, if the health officer wishes to obtain

the best results. An old friend, at the outset of the speaker's career, said: "Remember, one catches more flies with molasses than with vinegar." Again, he must fancy the feelings of those who believe their house is their castle and have him come in and tell that man his property is a nuisance. If he becomes offensive to the neighbors, a change must be made. Probably this man has had all this for twenty-five years, and all thrived with it, hence he is not willing to recognize any demand for a change. There is contagious disease in his family, his house is placarded, the family quarantined, and they can not mingle with the rest freely as formerly; all this provokes opposition, and needs the greatest care in its doing. All must be done in accordance with the most approved principles as to modern science, thus to produce the greatest amount of good, and must be carefully fitted to each case. In regard to the milk-supply, he visits the dairy, inquires as to the cleaning of the cows, the stables, the hands of the milkers and the other hygienic needs, then as to the cooling of the milk, the cleansing of the bottles and multitudinous points. Think of the difficulties met with. This is nothing beside the problem of teaching the ordinary dairyman a few facts about biology of milk. He listens to the discussion of the bacterial action in souring milk, cooling quickly to stop the growth of the bacteria, cleanliness to prevent bacteria getting into the milk; a few call it bosh, or stare in open-mouthed wonder. One accepted all and fixed his place as required; one day he came in and said he should add a cream separator to his dairy, it was a bad plan to set pans of milk in the open air, lest a lot of bacteria should get in and do harm with their dirty feet. After the inspector had recovered he determined not to discuss the bacterial problem with a dairyman. The municipal government has trouble with the health officer. The police station is often offensive, the lavatories are unwashed for a long time, the garbage is not collected properly, even decently. In the report of the State board of health you will find town after town show the same thing. You generally find swine feeding on offensive filth thrown out from a town, the garbage being disposed of just outside the town. These hogs are then brought to market as food for the citizens, and the inspector has to view this prospect and see his progressive people feeding on the unpurified product of their own garbage. It seems that the board of health stands idly by and sees the reeking offal of its municipality going to produce pork for human consumption. Thus it falls far short of the ideal for which it was created, and fails to be worthy of the principles by which it is governed.

Another point full of anxiety is his relations with his brother doctors. What is worse in any department of life than a careless, inconsiderate person who is supposed to know the value of certain systems, and yet goes always as far as he dares in the wrong direction? I, of course, do not intend to include all doctors in this class, yet there are a few in each district. I have seen a doctor attend a patient in the desquamative stage of scarlet fever, and go to the bedside of a little sufferer weak and emaciated from diarrhea. There will come a time when the general public will be sufficiently educated in public sanitation and the whole function of the board of health will be to keep in line those doctors who need to be looked after.

George F. Loring, Architect, of Boston, Mass., read a paper on school architecture. He said:

The relation between architecture and hygiene is close and vital. Building, the parent of architecture, owes its creation to the desire of men for more hygienic shelter than was furnished by forests or caves. After the erection of his own hut his belief in the humanity of the gods led him to provide the same comfort for them while his reverence caused him to change from mud to wood and to clay and to stone. By the erection of temples the esthetic element was introduced and developed. Architecture is thought of only as proportions and detail.

Why human energy should take this direction instead of developing the physical part of man may be found in the superstitious regard for the body itself. All the functions were thought to be controlled by superhuman forces; the mind being controlled by physical and religious abstraction tending to turn the same away from the body, could but produce its own embodiment in architecture. The greatest achievements of architecture have always been identified with the most mental and spiritual activity. The greatest triumphs have been in its application to the arts and industries. If our architecture is true it will be influenced by our activities and partake of the influence of the time.

Our modern steel buildings with the improved mechanical and scientific apparatus, to a great extent typify the national characteristics and the life of the times. A true architect is born, not made, and he will not cast aside these facts or it will be looked upon as absurd.

Hygiene has been the last of all branches to develop, due to superstition and lack of knowledge. The microscope and the study of specialists has brought to our minds facts that have been concealed and laid for us a foundation on which to build; the application of these principles as applied to building of school-houses is the subject here treated. In this northern climate and congested population the average individual spends at least 90 per cent. of his entire life indoors. The sanitary conditions of our buildings therefore must exercise a powerful influence on the general health. The best means for a study of these problems is afforded by the public schools.

The large number of people of practically the same age, for the length of time, under the same conditions placed in a given area, make it possible to deduce much more reliable data than can be done in any other way. Then also, children as a rule are free from chronic diseases or other diseases found in adults. Some one has said that a child may be regarded as a very sensitive hygienic instrument, responding quickly to change and environment. Following this line of thought I have made a study of school construction from the standpoint of hygiene as well as architecture.

Sixteen years ago school buildings were erected with the idea that all that was required was the housing of so many pupils, protection from the weather and so much floor space, all at the least possible cost. At about the time mentioned I began an investigation of this subject, being assisted by a bright man who was principal of a school. Much has been written on this topic, but my remarks are based on actual experience in this line.

Given a committee of fairly intelligent men, the first business instead of the last, which is the usual method, should be the selection of the architect. This should be done before any site for the proposed structure is purchased. The location at a suitable point within the school district, for convenience and

accessibility, is acknowledged. The exposure of the school building is of the utmost importance and preferably the lot should face either to the north or the south; the class-rooms can then be located on the southerly side of the structure without too long corridors.

We are advocates of the sun buildings for class-rooms; we do not agree with those that advocate northwest or northerly exposure, when we consider the number of days in the year when the sun is obscured, that the sun is nearly vertical over us at its highest point in the summer time, that for spring, fall and winter days the sun is necessary for health; that east and west exposures in the morning and afternoon are as bad, in the opinion of those with whom we differ, as the southerly, and that the amount of fuel necessary for warming fresh air for northerly rooms is more by at least four tons per room than for southerly ones. We all know the agreeable sensation of direct sunlight. Sunlight is the only disinfectant which sustains man while it kills the microbe, and you can not but agree from the standpoint of health and economy that our conclusion is correct. We believe that the body is of as much importance as the eye, with the windows properly screened against intense sunlight by use of curtains to each window in two parts, with the rolls at the meeting rail, the top running up and the bottom one down, the light can be controlled.

All windows in class-rooms should be square-headed without transom top, which can not be properly curtained, and without the bar over the transoms, as they throw strong shadows over the desks. The light from the upper part of the window is most valuable and should not be made circular or in the gothic style. Double windows or four runs of sash should be built in on the cold sides of class-rooms. They have the advantage of preventing the frosting of the glass surfaces and chilled air will not flow downward on the bodies of pupils that happen to be seated in the outer aisles. With double windows the wind-pressure on the walls of the exterior does not affect the movement of the air in the heating and ventilating ducts. The interior lighting of corridors and location of stairways can be disposed to best advantage with the style of the building mentioned. The space surrounding a building and within the boundary of the property lines should be at least twenty feet.

A lot where the grade of the land falls, or so graded as to fall, to the rear is much the better for the basement and for access to the same.

Except for high schools, no building should have more than two stories of class-rooms. By spreading the building over the ground, instead of vertically, we gain in breadth architectural effect, lessen the danger to health of young persons by loss of energy climbing stairways, and lessen the danger from panics; the additional cost of a building two stories high to one of the same capacity three stories high is so small that it is not worth considering.

In fixing the heights of stories we are governed some by the amount to be expended; the proper height of basement should be nine feet six inches to ten feet; of first story thirteen feet, and second story twelve feet. The light in rooms on the second story is always superior to that on the first, and we therefore increase the height of the story and of the glass surface of the first story to equalize the same; in any event the window-heads should be finished to the top so no shadows can be thrown on the ceilings. The sill of windows should be three feet four inches from the floor. The proportion of light to floor of class-rooms should never be less than one square foot of glass surface to six

square feet of floor surface, and from experience we can say that this holds good for rooms thirty-eight feet wide, lighted from one side only. Within the limits of a city where adjoining buildings are about twenty feet from exterior walls we should increase our glass in proportion of 1 to 5.

Every room should receive the direct rays of the sun for some part of the day. The special arrangement of curtains before mentioned we consider better than dusty and rattling shutters. The direct rays can be wholly or in part excluded if desired; in direct sunlight the rooms, up to the limit mentioned, are sufficiently bright to allow the reading of extremely fine print without exertion; at other times the shades are not required.

The worst light is from the front. The best light is from the left side or left side and back. As the teacher suffers from the light as well as the pupil, and is placed necessarily in the opposite position, we believe that the desk should be placed on the floor in such position as may suit the individual taste; supplemented by swivel chair is convenient and comfortable. The ceiling plays an important part in the distribution of light and should be white. We have used stamped metal ceilings painted white, but they are objectionable on account of the many shadows they throw; the paint soon becomes dull and is not the equal of a perfect plaster ceiling for reflecting light; the walls are better for the eye if tinted. Nothing can be better for blackboards than natural slate, but the joints should be cemented together after being placed; the chalk-receivers should be placed at a height of two feet two inches from the floor for small children, and not over three feet four inches for high-school pupils. Blackboards should not be placed between windows, and from thirty feet to forty feet in length is sufficient for any class-room. Dustless crayons should be used; if common ones are used the board should be wiped off with a damp cloth, and not with a dry brush. Slots in the top molding of the boards should be left for cards. Picture-moldings should be placed everywhere.

The number of pupils to a room can only be decided by the committee in charge.

The sizes of rooms for good seating depends on the size of the desks and ages of the pupils. The blackboard aisle should be three feet eight inches, the exterior aisles two feet four inches wide, inside aisles never less than twenty-one inches. An average desk twenty-four inches wide, fifteen and a half inches deep, with chairs thirty-one inches from back to back, seating grammar-school pupils up to the age of 14, allowing space for teacher, will make a room twenty-six feet six inches by thirty-four feet three inches and allow fifty-four seats when fronted the narrow way, or fifty-two seats when fronted the wide way of the room. We find by careful adjustment of sizes of seats and ages of pupils that it is not necessary to allow twenty square feet of floor surface per pupil. As most authorities state, they do not make any allowance for the age and place small and large on the same footing; we estimate fifteen square feet for the primary, seventeen square feet for grammar, and twenty square feet for high-schools. This makes quite a difference in the area and cost of a building. The adjustable desk and adjustable seat having a back of one curve seems to us the best and most comfortable for pupils. In a room longer than thirty-six feet it is difficult for a teacher to speak in an ordinary tone of voice so as to be clearly heard by the pupils in the rear row of seats.

Corridors should be without obstruction, and never less than eight feet; ten is better. Stairways should be six feet wide and each flight broken by a land-



ing. These stairs should be as near the exits as possible and also equally placed at each end of the building. No portion of entrances, halls, corridors or stairs should be so planned that one teacher in charge of a floor cannot command a view of the same for maintaining discipline.

Stairs, if of wood, should have stringers or supports of heavy hard pine, or of iron. If of iron, flat pieces of sheet-lead should be sunk in each tread or sinkage filled with asphalt. The rise should never be more than seven and a half inches for each step with eleven-inch treads.

From each class-room there should be two doors connecting with the corridor; these doors should be hung to swing both ways; they should be fitted with new spring check, so whichever way they swing they stop, on the return, at the center; glass panels in these doors are necessary.

If proper stairways are put in there is no necessity for fire-escapes on the exterior any more than it is necessary to put up unsightly ventilators on the roof if proper system of ventilation is installed. If the building is laid out as described there can be no dark places. The details of lunch-rooms, laboratories, specimen-rooms, principal's office, teachers' rooms, libraries, superintendent's office, supply-rooms, are matters for consultation. The female teachers' room should have toilet conveniences so that the girl pupils could use it for a sick room; lockers for the teachers should also be placed in that room.

Laboratory walls should be of brick if the building is of brick, and finished in enameled brick or enameled paint; floors of the same should be of granolithic or asphalt. Floors of basement should be of granolithic; concrete is cheaper and also poorer in wearing qualities, as it disintegrates; much of the dirt on the floors of corridors and class-rooms is from this source. The boiler-room floor should be paved with brick and grouted in cement; the ceilings of basement where wooden framing is used in floor above should be wire-lathed and plastered, and is a protection against noise, dirt, drafts and fires. The best flooring for upper floors is selected dry maple or cone-grained hard pine, and the boards should be narrow, matched and blind-nailed. If nailed in the ordinary manner every nail-hole and crack is a place for deposit of human and animal wastes. The floors may be covered with two coats of elastic varnish that will not mar or scratch; they should not be oiled, as that turns hard pine black.

If wooden construction is used for floorings, then the same should be protected against fire by the use of salamander fireproof sheets put down between the under and upper floors with lapped joints and coated over with a solution of that make. If the partitions are of wood, then they should be fire-stopped at each floor and ceiling. If brick walls are furred off for plaster and finish, the same should be fire-stopped at the top and bottom in each story. All staircases should be carried by brick walls, and they should not be laid out in plan so as to be over the boiler-room.

Concrete-expanded metal lath and steel construction for fireproof floors would cost about seven cents per square foot more than wooden construction, and we hope the time will soon come when committees will be willing to pay the additional cost.

In the disposition of the basement plan the space, instead of being filled with pipes, ducts, boilers, piers, etc., can be so planned as to have good rooms available for wardrobes, if desired; for toilets, manual-training rooms, janitor's

room, bicycle-rooms, lunch-rooms, etc.; whereas, in many schools, this portion of the building is absolutely worthless and cannot be utilized, showing lack of knowledge and experience on the part of the designer.

Assembly halls are usually placed in the roof-space for economic reasons. The first or second floor would be safer and more convenient; if located on the second floor, by providing wide openings to each adjoining class-room at the platform-end of the hall, the accommodations can be increased by using these class-rooms, and allow of a smaller hall if necessary. From motives of economy the hall may be used as class-rooms and arranged with folding partitions; the platform may be in sections, removable, and a storage-place provided. Quite often we arrange two class-rooms so that they may be thrown together, making one large room; if on the first floor, they may be used for town purposes, etc. Regarding acoustic qualities of class-rooms with height of from twelve to thirteen feet, the proportions of 26 x 34 or 26 x 32 are always good.

Authorities differ regarding the width of class-rooms and quality of light; one says width of room equals two and one-half times top of windows from top of desks; this would give about twenty-six feet width for thirteen-foot story and twenty-four feet width for twelve-foot story. When there are no limitations, the nearer this rule is adhered to the better the result.

The wainscot work of class-rooms and elsewhere would be more vermin and dust-proof if made of hard plaster painted four coats of lead and oil with soft gray color and finished without a gloss. Standpipes and fire-hoses should be furnished where the appropriation admits of it. The interior finish should always be of ash or oak, and the additional coat for ash over whitewood (which is so often used) would never be known if incorporated in the specifications. The style of the same should be simple and free from too many projections to catch the dust.

*Wardrobes.*—As contagion is most likely to occur from garments, which, being porous, absorb and transport gases, microbes, etc., it is necessary to have two wardrobes properly arranged on each floor, one for each sex if appropriation permits. The latest improved wardrobes set up in separate rooms or in corridors either in the basement or on each story are made with separate stalls of three to four-inch by three to eight-inch channel irons covered with three to four-inch half-oval with open spaces up ten inches from the floor and the top five feet four inches from the floor, between each stall and forming the back between two sets of stalls on these frames filled with one and one-half inch diamond mesh No. 9 wire. At the bottom is a shelf for rubbers, two rings and cups for umbrellas, with hangings on each side, none on the back. They are about one foot three inches deep and one foot six inches wide. The cost of this style of wardrobe put up is about \$1 per hanging, as there are two to each stall, \$2 per stall. In estimating the number of stalls that can be placed in a room and have plenty of freedom for aisles, etc., allow two square feet per hanging. We believe the best place for wardrobes is in each corridor, provided it is wide enough. There will be no traveling up and down to the basement. If separated for sexes there is less crossing of files or pupils, being more direct, cleaner and just as well ventilated.

Wardrobes seem to be the most difficult part of school sanitation, there being many advantages in the open method by placing them in wide corridors or in the basement, unless an appropriation large enough for special rooms with a

thorough circulation of fresh air, is provided. The advantage of having them in the corridor is that the teacher in command of that floor maintains the discipline.

*Sewerage.*—Where there are no sewers we unhesitatingly use the cremating closets, but these should never be supplied with foul air drawn from class-rooms above; there should not be a connection of any kind between closet-room and rooms above. In no case should the wastes of sinks and bowls or private toilets be discharged into these vaults; the wastes should enter a cess-pool, preferably a double cesspool, a tight one for solids and a leaching one for liquids. The best urinal is of slate with the dry-air system, using no water. There should be a connecting waste from the trough and a connection made to the cesspool drain. We are sure from the experience we had, that these, when properly erected, will last forever without repair, and that they are free from odor; if an earthen urinal is desired, the best is the Stevens patent, ventilated from the bottom of the bowl and automatically flushed; slate is the best material for slabs.

Water-closets for pupils' use, where there is water-carriage, should be with automatic seats. The Hellyer Oxford Closet, a moderate priced vitreous earthenware product of this country, has lately been fitted with a perfect seat, absolutely sure in action, and not likely to wear in any part; these closets, set with a space of from twenty to twenty-four inches between the back of the slab and wall, will allow access to all the pipes, points, and tanks; nothing but the closet is exposed to view; the closets are set separately with separate tanks, enclosed in ash, slate or marble partitions six feet six inches high; doors should stand open in the closet with spring attachment and with spaces at top and bottom; each closet should have seat ventilation, and the toilet-room should be supplied with fresh warm air and a foul-air extracting flue. No metal ducts for fresh air supplies to class-rooms should be allowed to cross the ceilings of these rooms, as the joints in the metal work and around brick openings can not be made tight, and the fresh air becomes foul. There is no particular advantage in placing toilets in an annex with cut-off outside the building, except that it is more convenient to have these on a level with the class-room floors, in which case the building will be more costly.

The thick porcelain slabs with backs are the neatest and best device for drinking-fountains in the corridors; or, if economy is the word, you can obtain an iron fountain with push-button instead of a faucet, and when painted white is neat, serviceable and cheap. Each pupil should have an individual cup or glass, and place for the same should be provided either in individual wardrobe, stall or desk.

The principal's and teachers' rooms should be fitted with water-closets and bowls of approved make.

There should be two sill-cocks and supplies at the ends of the building, with shut-offs inside, and a hose bibb and sink for use of the janitor in the boiler-room. The practice of making one large foul-air extracting flue answer for two or more rooms should never be allowed, it being a conductor for sound and foul air between all parts so connected. Each room should have an independent outlet. \* \* \*

*Cost of School Buildings.*—As we understand it, structures for this purpose are not to be erected as monuments to committees or the architects; they should

be business buildings, neatly and plainly treated for the purpose, but not necessarily built like factories; it does not cost much to get breadth of treatment and architectural effect in a modest way. Unfortunately, we have always been limited to cost. We can honestly say that the appropriations have never been exceeded; to the best of our ability we have included as much of the above points as the money at our command would allow. For high schools of brick and stone the price per cubic foot of contents varies in different localities from 11.2 to 12.5 cents; per square foot of ground covered for two stories of class-rooms, from \$5.50 to \$6.50; for three stories of class-rooms, \$7.50. The cost per pupil averages \$160 to \$175.

The Montclair high school, erected by us in the year 1892, cost as follows: Per cubic foot 12.3 cents, \$6.42 per square foot of area of first floor, or \$160 per pupil, and accommodates 605 pupils. The most expensive schools we ever erected cost 15 cents per cubic foot, a limit which there is no necessity for exceeding. Brick grammar schools without assembly halls cost per square foot of first floor area from \$4.50 to 5.50, and from 9.8 cents to 11.34 cents per cubic foot, and per pupil from \$68 to \$75. Brick grammar schools with assembly halls will cost about \$80 to \$85 per pupil. Wooden school buildings without assembly halls cost from 7 to 8.4 cents per cubic foot, \$3.25 to \$3.78 per square foot of first floor area, and from \$50 to \$60 per pupil. Wooden school buildings with hall cost per pupil about \$68.

The above prices include the building complete, including heating, ventilation, sanitary appliances and architects' services, without furniture. In estimating the cost of furniture, using adjustable desks of birch, adjustable seats, teacher's desk, swivel chair, extra chair, clock and shades, the cost per classroom for primary schools is \$167, for grammar schools \$200, for high schools \$250.

The meeting of the Association for 1898 will be held at the Laurel House, Lakewood. The following programme has been prepared:

#### TWENTY-FOURTH ANNUAL MEETING

OF

THE NEW JERSEY SANITARY ASSOCIATION,

TO BE HELD IN THE LAUREL HOUSE, LAKEWOOD, N. J.,

Friday and Saturday, December 9th and 10th, 1898.

OFFICERS, 1898.

President—Vernon L. Davey, Supt., East Orange.  
 First Vice-President—Daniel Strock, M.D., Camden.  
 Second Vice-President—George W. Howell, C. E., Morristown.  
 Third Vice-President—Herbert B. Baldwin, Chemist, Newark.  
 Recording Secretary—James A. Exton, M.D., Arlington.  
 Corresponding Secretary—\*W. G. Hoopes, Architect, Atlantic City.  
 Treasurer—George P. Olcott, C. E., East Orange.  
 Chairman Executive Council—H. B. Willis, Esq., New Brunswick.

\*Deceased.

## THIRD SESSION.

*Saturday, December 10th, at 9 A. M.*

9. Food, Adulterations and Means of Prevention, Max Meyer, M.D., Ph.D., New York City Board of Health.

10. Public Water-Supplies and the Prevention of the Pollution of the Same, James H. Fuertes, C. E., New York City.

11. Milk: Is Law a Sufficient Protection Against Impure Products? Prof. Edward B. Voorhees, M.A., New Brunswick.

12. Reports of Health Officers, Sanitary and Plumbing Inspectors. Miscellaneous Business. Election of Officers. Unfinished Business. Adjournment.

## REPORT OF THE BOARD OF HEALTH.

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## EXECUTIVE COUNCIL, 1898.

H. Brewster Willis, Chairman; Jos. W. Stickler, M.D., Orange; Elias D. Smith, Esq., Elizabeth; Judge Wm. M. Lanning, Trenton; William Pierson, M.D., Orange; Prof. C. M. Davis, Bayonne; H. R. Baldwin, M.D., L.L.D., New Brunswick; M. N. Baker, C. E., Upper Montclair; John L. Leal, M.D., Paterson; Jos. H. Powell, Esq., Bridgeton; Mortimer Lampson, M.D., Jersey City; Percy H. Terhune, M.D., Passaic; Elias J. Marsh, M.D., Paterson; Henry C. Greene, Esq., Arlington; Geo. W. Rockfellow, Esq., Plainfield; Prof. H. B. Cornwall, Ph.D., Princeton; David Harvey, Counsellor, Asbury Park; Henry S. Scull, Esq., Atlantic City; H. Genet Taylor, M.D., Camden; H. B. Francis, Esq., Camden; Richard H. Reeve, Esq., Camden; Walter Reynolds, M.D., Health Officer, Atlantic City; D. E. English, M.D., Milburn; O. W. Braymer, M.D., Camden; E. C. Osborn, Esq., Princeton; W. J. Harrison, Esq., Lakewood; Alex. W. Pettit, Esq., New Brunswick; T. Frank Appleby, Asbury Park.

## HONORARY MEMBERS EXECUTIVE COUNCIL.

Ex-Presidents C. F. Brackett, M.D., L.L.D., Princeton; Prof. Albert R. Leeds, Ph.D., Hoboken; L. B. Ward, C. E., Jersey City; 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. Olcott, C. E., East Orange; E. L. B. Godfrey, M.D., Camden; Carrol Ph. Bassett, C. E., Ph.D., Summit; Addison B. Poland, Ph.D., New York City; David C. English, M.D., New Brunswick; Shippen Wallace, Ph.D., Burlington; J. Madison Watson, Elizabeth; James Owen, C. E., Montclair.

## FIRST SESSION.

*Friday, December 9th, at 3:30 P. M.*

1. Report of the Committee of Arrangements, Mr. W. J. Harrison, Chairman, Lakewood.
  2. Reports of Committees.
  3. Defective Vision in School Children, W. B. Johnson, M.D., Paterson.
- Discussion—George I. Welch, M.D., Passaic.
4. Treasurer's report. Miscellaneous business.
- The Executive Council will meet immediately after adjournment.

## SECOND SESSION.

*Friday, December 9th, at 8 P. M.*

5. Prayer, Rev. Charles H. McClellan, D.D., Lakewood.
  6. President's Address, Professor Vernon L. Davey, Ph.D., East Orange.
  7. The Powers, Duties and Limitations of Boards of Health, Samuel A. Paterson, Counsellor, Asbury Park.
  8. Methods of Sewage Disposal, Rudolph Hering, C. E., New York City.
- Discussion—A. G. Gavett, C. E. Plainfield.

## CIRCULARS AND LAWS.

The following circulars are now in print and ready for distribution :

- CIRCULAR 7.—Protection to Bathers.
- “ 39.—To Local Boards of Health—Their Duties.
- “ 42.—As to Petroleum, Kerosene, &c.
- “ 45.—Cholera.
- “ 59.—Laws and Regulations as to the Adulteration of Foods or Drugs.
- “ 60.—Laws Relating to Public Health, 1893.
- “ 61.—Care of Household Wastes.
- “ 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.
- “ 73.—Cities.
- “ 79.—Laws Concerning Marriage.
- “ 83.—Tuberculosis.
- “ 86.—Bacteriological Diagnosis No. 1.
- “ 87.—Dangerous Communicable Diseases.
- “ 88.—Laws Relating to the Public Health, 1896.
- “ 89.—Bulletins Nos. 3 and 4.—(Reprint.)
- “ 90.—Ice.
- “ 91.—Maritime Quarantine.
- “ 93.—Bacteriological Diagnosis No. 2.

### NEW CIRCULARS.

Three circulars have been issued during the year, viz. : Circular 66, relating to the certification and registration of marriages, births and deaths ; Circular 92, announcing the re opening of the bacteriological laboratory ; and Circular 93, relating to bacteriological diagnosis.

Circular letters were sent out as follows : No. 29, relating to the advantage, and necessity under the law, of reporting the occurrence of dangerous communicable diseases ; No. 30, relating to the sanitary administration in the ports of the State ; No. 31, relating to milk adulteration by the addition of Formaldehyde ; and 32, on the prevention of small-pox.

Circular Letter 29.

Dangerous Communicable Diseases Must be Reported.

OFFICE OF THE BOARD OF HEALTH  
OF THE STATE OF NEW JERSEY,  
TRENTON, }

To the Local Board of Health of.....

The records of this office show that no reports of communicable diseases have been received from your board during the year ending ....., yet we find that deaths from said diseases have occurred in your sanitary district as follows: Typhoid fever..... ; diphtheria..... ; scarlet fever.....

The act approved March 22d, 1895, 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, and it is made the duty of local boards to enforce the law. Local boards are not compelled by law to furnish blanks to physicians, but physicians would be much accommodated if blanks were supplied for their use, to be paid for from the annual appropriation made to the local board.

Section 2 of the act above referred to requires that the facts contained in every report of a communicable disease which is filed with the clerk, secretary or other designated officer of any local board of health, shall be entered by said local officer in a book kept exclusively for that purpose, and that said facts shall also be transmitted to the office of the State board of health on cards which are provided by the State.

The cards issued for the use of local boards in sending reports of cases of communicable diseases are in form as follows:

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.....				

NOTE — When no communicable diseases occur, no report will be expected from local boards to the State board of health.

Total deaths from all causes ..... Signature of clerk or other designated officer.....

P. O. Address.....

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.

The great value of early notification of cases of communicable diseases is recognized by physicians and health officers in all sanitary districts in which the enforcement of the law has become established, and these progressive communities now demand that every other township and municipality in the State shall obtain and furnish information relating to cases of preventable diseases which occur within their boundaries, and said communities also demand that the isolation of patients suffering from such diseases in other districts shall be thorough and effectual, and that the isolation of such patients shall continue until they are no longer a source of danger to other persons, and that the cleansing of infected persons and premises shall be conducted upon approved principles and

in accordance with prevailing methods, and the State board of health is depended upon to defend these communities against neglect and inefficiency in restricting the spread of these diseases.

The following blank forms for the use of physicians for reporting communicable diseases are reproduced here for the purpose of suggesting to local boards a convenient method for obtaining reports and for simplifying the work of the local health officer :

Board of Health of .....

Blank to be Filled by the Attending Physician.

**STUB OF REPORT OF  
COMMUNICABLE  
DISEASE.**

Name .....

Age .....

Sex .....

Color .....

Residence .....

Disease .....

Date of attack .....

Date of report .....

Remarks .....

....., 189...

The following is an extract from section 1 of chapter 860, 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.*

Blank books for the use of the clerk, secretary or other designated officer of the local board are conveniently made up of sheets ten inches long and twenty inches wide. For the purpose of quickly tracing a few of the more prevalent diseases, colored inks are used; diphtheria is recorded in blue; and scarlet fever in red. The following form of ruling has been found to be suitable :

Blank for Use of Local Board of Health.

Record of Communicable Diseases Occurring in ..... During Year

Ending .....

Number.	Date of Attack		Name of Patient.	Sex.	Color.	Age.	Name of Disease.	Person Reporting.	Place of Residence.	Result		Remarks.
	Month.	Day.								Recovered.	Died.	

(If blanks of this description are used, they should be provided by the local board of health. The State board of health is not authorized by law to furnish blanks for this purpose.)

In cases where the local board neglects or fails to enforce the law requiring physicians to report all cases of the dangerous communicable diseases, and where the local board refuses or fails to conform to the requirement of the act which provides that a record shall be kept of all such reports received from physicians, and also that a transcript of all reported cases of such diseases shall be regularly forwarded to the office of the State board of health, Trenton, the duty of bringing suit for the collection of the penalty will fall upon the State board of health; and upon receipt of satisfactory evidence showing violation of the law on the part of any person whose duty it is to report these cases, the State board will at once commence proceedings.

Very respectfully,

HENRY MITCHELL,  
Secretary.

## Circular Letter 30.

OFFICE OF THE BOARD OF HEALTH  
OF THE STATE OF NEW JERSEY,  
TRENTON, September 1st, 1898. }

DEAR SIR—Attention is called to the provision of Section 4 of Chapter 107 of the Laws of 1897, and replies to the following inquiries are requested:

1. Please state the total number of vessels inspected in the sanitary district under your supervision during the year ending October 1st, 1898.
2. Number of passengers inspected on each of said vessels.
3. Total number of passengers inspected.
4. Total number of permits issued.
5. Amount of fees received from each vessel and the total amount of fees received.
6. Number of passengers examined who were found to be affected by any communicable disease.
7. What facilities are provided for isolating passengers found to be suffering from any dangerous communicable disease.

Please forward replies to the foregoing inquiries on or before October 15th, 1898.

Very respectfully,

HENRY MITCHELL,

Secretary.

## Circular 66. April, 1898.

Certification and Registration of Marriages, Births and Deaths.

SYNOPSIS OF THE LAW RELATING TO THE CERTIFICATION AND REGISTRATION OF MARRIAGES, BIRTHS AND DEATHS IN NEW JERSEY.

(Chapter 39, Laws of 1888.)

1. *Duties of Clergymen and others.*—All persons who shall perform the marriage ceremony shall, within thirty days, transmit a certificate of marriage to the local registrar of vital statistics, if there be such officer, and if there be no such officer, then to the assessor in townships and to the city clerk in cities.

2. *Duties of Physicians and Midwives.*—The physician or midwife who is present at the birth of any child shall transmit, within thirty days, a certificate of birth to the officer mentioned in the preceding section.

3. *Duties of Parents.*—When no physician or midwife is present at a birth, then the parents shall transmit the certificate of birth to the proper officer.

4. *The Assessor, City Clerk* or other person acting as registrar of vital statistics shall supply physicians with twelve stamped envelopes annually.

5. *Assessors in townships* shall make "special returns" of births in cases where any physician, midwife or parent has failed to perform this duty.

6. *When any person shall die* within the state, the attending physician shall sign a certificate of death and deliver it to the undertaker or family.

7. *If no physician shall have attended the deceased person*, any physician may view the body and issue a certificate.

8. *Any Coroner or other officer* who shall lawfully conduct an investigation into the cause of death shall furnish the certificate of death.

9. *When any death occurs within any city or other municipality* the registrar of vital statistics, if there be such officer, and if there be no such officer, then the city clerk, after having received the certificate of death, shall issue a permit for burial, and no burial of the body of

any person dying in any city or other municipality shall be performed until said permit has been issued.

10. *When the death occurs in any township* and the burial is to be made anywhere in the state outside of municipal limits, the certificate of death is itself a permit for burial.

11. *When the death occurs in any township* and the burial is to be made within any city or other municipality, the certificate of death is to be delivered (see next section) to the assessor of the township, or if the assessor cannot be found, to the clerk of the township, and the said assessor or clerk shall then issue the permit for burial.

12. *It is provided, however,* that when a death shall occur in any township and the burial is to be made within any city or other municipality, the certificate of death may be delivered, if more convenient, to the registrar of vital statistics, if there be such officer, and if there be no such officer, then to the clerk of the city or other municipality within which the burial is to be made.

13. *When, for convenience,* the certificate of death is delivered to the registrar or clerk of a municipality, the undertaker shall make known to the said officer the name and post-office address of the assessor of the township in which the death occurred, and shall also pay the sum of two cents for postage, and said officer shall issue the burial permit and transmit the certificate of death to the said assessor.

14. *Any judge of the Court of Common Pleas,* or any justice of the peace of the county, may issue a burial permit in case the registrar or clerk of any city or other municipality is absent.

15. *When any dead body shall be brought into this State* for burial, it shall be accompanied by a certificate of death, or, in lieu thereof, a certificate of death may be obtained from a physician residing in the district within which the burial is to be made.

16. *When a dead body is to be removed from this State,* the undertaker shall obtain a transit permit from the proper officer.

17. *A record of interments* in cemeteries owned by companies shall be kept by the person in charge of every such cemetery.

18. *Undertakers shall transmit certificates of death,* within five days after burial, to the assessor of the township in which the death occurred, in all cases in which the said certificate has been used as a permit for burial.

19. *No dead body shall be buried until a lawful permit* for burial shall first have been obtained, nor shall any such permit be unlawfully signed or delivered by any clerk, under a penalty of \$50.

20. *Any person making a false certificate of marriage, birth or death* shall be punished by a penalty of \$100, or by imprisonment.

21. *All certificates of marriages, births and deaths,* and all "special returns" shall be transmitted by assessors, clerks and registrars to the bureau of vital statistics, Trenton, on or before the 15th of every month.

22. *The medical superintendent* shall certify the number of certificates received from each assessor, clerk and registrar, and for every certificate so certified the local disbursing officer shall pay the sum of ten cents to the said assessor, clerk or registrar.

23. *In cities containing thirty thousand inhabitants or over,* the governing body may cause a local record of vital statistics to be made.

24. *An alphabetical index* shall be made of all certificates of marriages, births and deaths received by the bureau of vital statistics, Trenton.

25. *Blank forms of certificates* shall be furnished by the bureau of vital statistics to local registrars of vital statistics, assessors and city clerks, and by these officers said blanks shall be distributed to clergymen, physicians, midwives and other persons required to perform duties under the law.

26. *A list of ministers, magistrates, physicians, midwives and undertakers* shall be kept by assessors, clerks and registrars, and on or about May 1st in each year the said assessors, clerks and local registrars shall send to each such person instructions and explanations, prepared and supplied by the bureau of vital statistics, together with a supply of blank forms for certificates of marriages, births and deaths.

27. The provisions of the act are to be enforced by local boards of health, the penalty for violation, except as above set forth, being \$20.



## CHAPTER XXXIX, LAWS OF 1888.

AN ACT to secure in this state the certification of marriages, births and deaths, and of the vital facts relating thereto, and to provide for the record thereof.

1. That it shall be the duty of every judge of any court of common pleas, justice of the peace, recorder, police justice, mayor, minister of the gospel, and other person who shall, under the authority of any law of this state, solemnize any marriage therein, and the clerk or keeper of the minutes of any religious society before which any marriage shall be solemnized in this state, to transmit to the officer hereinafter designated, within thirty days after such solemnization, a certificate of each and every marriage solemnized by any such minister, magistrate or other person, or before any such religious society, which certificate shall set forth particularly the name, age, parentage, birthplace, occupation and residence of each of the persons married, the time and place of the marriage, the condition of each of the persons married, whether single or widowed, the name of the minister, magistrate or person by whom, or of the religious society before which the marriage was solemnized, and the names and residences of the witnesses; any minister, magistrate or other person, or clerk or keeper of the minutes of any religious society, who shall neglect or fail to transmit such certificate to the officer hereinafter designated, within the time aforesaid, shall be liable to a penalty of twenty dollars.

2. That it shall be the duty of the physician or midwife present at the birth of any child born in this state, and in case there be no physician or midwife present, then of the parents or either of them, to transmit, within thirty days after such birth, to the officer hereinafter designated, a certificate of such birth, which certificate shall set forth particularly, as far as they can be obtained, the day of the month and year of the birth, the township, city or municipality, and the county, in which the birth occurred, the name of each of the parents, the maiden name of the mother, the birthplace, residence and occupation of each of the parents, the sex and color of the child, the name of the child if it be named, and the name of the attending physician or midwife if any there be; it shall also be the duty of the assessor of every township, and of the clerk or the person acting as registrar of vital statistics in every city, borough, town or other local municipal government, between the first and tenth days of April, in each and every year, to mail to each physician or midwife residing in such township, city, borough, town or other local municipal government, or to supply to every such physician or midwife on application therefor, twelve envelopes of proper size, each with a two-cent postage stamp thereon, to be provided at the expense of the township, city, borough, town, or other local municipal government, for the use of said physicians and midwives in transmitting said certificates of birth to the officer hereinafter designated; any physician, midwife or parent whose duty it may be to

Certificates of marriage to be transmitted to proper officer.

Certificate, what to set forth.

Penalty.

Certificate of birth to be transmitted to the proper officer.

Certificates, what to set forth.

Duty of assessors and clerks.

transmit such certificate as aforesaid, and who shall neglect or fail to perform such duty within the time above limited, shall be liable to a penalty of twenty dollars; and the assessor of any township who shall ascertain that any physician, midwife or parent has neglected or failed to perform such duty as aforesaid, within the time above limited, shall forthwith make and sign a certificate setting forth the particulars hereinabove specified, and shall mark the same with the words "special return," but no such certificate of the assessor and no failure of any assessor, clerk or registrar of vital statistics to mail the envelopes aforesaid, shall release any physician or midwife, or any parent, from the duty of certifying such birth in the manner aforesaid, nor from the penalty incurred by any neglect or failure to certify such birth.

3. That when any person shall die within this state, it shall be the duty of the physician who shall have attended such person during his or her last sickness to furnish the undertaker, or any member of the family applying therefor, a certificate of such death, which certificate shall set forth particularly, to the best of such physician's knowledge, the name, age, sex, color, nativity, occupation, last place of residence, the township, city or municipality and the county within which the death occurred and the cause of death; if no physician shall have attended such deceased person during his or her last sickness, or if the physician who shall have attended such deceased person shall be absent or sick, so that no certificate of death can be obtained from him in time for burial, then and in either of such cases it shall be lawful for any physician to whom application may be made, after having viewed and examined the dead body, and being satisfied that the deceased person did not come to his or her death by the contrivance, aiding, procuring or other misconduct of any person or persons, to furnish such certificate as aforesaid; in case the attending physician, or the physician applied to as aforesaid, after having consented to act upon such application and viewed and examined the dead body, shall refuse to furnish such certificate as aforesaid, except upon the ground aforesaid, he shall be liable to a penalty of twenty dollars; and if any physician shall refuse to furnish such certificate as aforesaid, upon the ground aforesaid, the same proceedings shall be had as are provided by law for the investigation of the cause of violent, sudden or casual deaths, and the physician or officer who shall conduct such investigation shall furnish such certificate of death as aforesaid.

4. 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 or 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, borough, town or other municipal government in which such marriage or birth shall occur; and in any township every such certificate shall be transmitted to the assessor of the township in which such marriage or birth shall

Penalty for failure to perform duties.

Physicians to furnish undertaker with certificate of death.

What certificate to set forth.

Penalty for refusing to furnish certificate.

Certificates of marriages and births to be transmitted to registrars, clerks or assessors.

occur, or if there be no assessor in office, then to the township clerk.

5. That every certificate of death required to be made by the third section of this act, shall, where the death occurs within any city, borough, town or other local municipal government, be delivered to the registrar of vital statistics of such city, borough, town or other local municipal government, if there be such officer, and if there be no such officer, then to the clerk thereof, and said registrar or clerk shall thereupon issue a permit for the burial of the body of the deceased person described in said certificate of death, and shall forthwith give said permit to the person delivering to him the certificate of death, which permit shall be authority for the burial of such body, but the said certificate of death shall be retained, to be disposed of as hereinafter directed; where the death occurs within any township and the burial is to be made in any place in this state not within the limits of any city, borough town or other municipal government, every certificate of such death which shall be furnished to the undertaker, or other person acting as undertaker, shall of itself constitute a sufficient authority for such burial; and where the death occurs within any township and the burial is to be made within the limits of any city, borough, town or other local municipal government of this state, every certificate of such death shall be delivered to the assessor of such township, if there be one in office, or if there be no assessor in office, then to the clerk of such township, which assessor or clerk shall thereupon issue a permit for the burial of the body of the deceased person described in such certificate of death, shall give said permit to the person delivering to him the certificate of death, and shall retain the certificate of death, to be disposed of as hereinafter directed; *provided, however*, that when a death shall occur within any city, borough, town or other local municipal government now existing, or which shall hereafter exist, within the limits of any township, then and in such case a permit for burial shall be obtained in the same manner as in other cities, boroughs, towns and local municipal governments; and *provided further*, that when a death shall occur within any township and the burial is to be made within the limits of any city, borough, town or other local municipal government of this state, the certificate of any such death may be delivered, if it be more convenient, by the undertaker or person acting as undertaker, to the registrar of vital statistics, if there be such officer, or if there be no such officer, then to the clerk of the city, borough, town or other local municipal government within which such undertaker or person acting as undertaker may reside, or within which the burial is to be made, but in all such cases it shall be the duty of such undertaker or person acting as undertaker, to deliver with said certificate of death, in writing, to such registrar or clerk, the name and post-office address of the assessor, if there be such officer, and if there be none, then of the clerk of the township in which the death shall have occurred, and also the sum of two cents to pay for postage, and said registrar

Certificate of death to be delivered to registrars, clerks or assessors.

Registrar or clerk to issue permit.

When certificate to be issued to undertaker.

Certificate authority for burial.

Assessor or clerk to issue permit.

Proviso.

Proviso.

or clerk shall immediately issue a permit for burial as in other cases, and shall immediately transmit such certificate by mail to the assessor or clerk whose name and post-office address shall have been furnished as aforesaid, and for any neglect or failure so to transmit such certificate, such registrar or clerk shall be liable to a penalty of twenty dollars.

6. That in case where, on account of the absence of the registrar of vital statistics or the clerk of any city, borough, town or local municipal government, or for any other sufficient reason, it may be impossible to obtain from such registrar or clerk a permit in time for burial, it shall be lawful for any judge of the court of common pleas or any justice of the peace of the county in which the death occurred, on presentation of the certificate of death to him, and being satisfied that such certificate is genuine, and that no permit can be obtained in time for burial from the clerk aforesaid, to issue a special permit for burial in the following form: "It being impossible to obtain a burial permit from the registrar of vital statistics or the clerk of the [stating here the name of the city, borough, town or other local municipal government], on account of [state here the reason], I, a judge of the court of common pleas [or a justice of the peace], of the county of —, do hereby grant this special permit for the burial of —, whose death has been duly certified to me," which permit shall be dated and signed by such judge or justice; the said judge or justice shall transcribe a copy of said permit upon the back of the certificate of death, shall give the original permit to the person delivering to him the certificate of death, and shall transmit the certificate, with the transcription thereon indorsed, by mail, in an envelope marked "burial permit," to the state bureau of vital statistics, at Trenton; the judge or justice who shall issue any such permit shall be entitled to charge and receive from the person presenting to him such certificate of death the sum of fifteen cents.

7. That in case any person shall die without this state, and his or her body shall be brought into this state for burial, it shall be the duty of the family undertaker or other person conveying such body into this state, to bring therewith, or send beforehand, a certificate of death made by the physician who attended such deceased person during his or her last sickness, setting forth the particulars specified in the third section of this act, or in lieu thereof, a certificate of death, setting forth said particulars, may be obtained from any physician duly authorized to practice medicine within this state, who shall reside within the township, city, borough, town or other local municipal government within which the burial is to be made, and who shall have made proper inquiry as to the facts required to be certified, and satisfied himself as to the same; if the burial of such body shall be made in any township of this state, such certificate as aforesaid shall constitute a sufficient permit for burial; but if the burial shall be made in any city, borough, town or local municipal government of this state, the said certificate shall be delivered to the registrar or

In absence of clerk or registrar, judge of court or justice of peace may issue permit for burial, &c.

Form of permit.

Copy of permit, transmitted to whom.

Proceedings in case bodies are brought into this state for burial.

clerk thereof, who shall issue a permit for burial, as in cases where deaths shall occur within the city, borough, town or local municipal government of which such registrar or clerk is an officer.

8. That any undertaker or other person who shall be about to remove from this state the body of any deceased person who shall have died within this state, shall, prior to such removal, obtain a certificate of the death of such person, as required by the third section of this act, and such certificate shall be presented to the assessor of the township in which the death shall have occurred, if there be such officer, or if there be none, then to the clerk thereof, or to the registrar of vital statistics of the city, borough, town or other local municipal government in which the death shall have occurred, or if there be no such officer, then to the clerk thereof, who shall issue to the person presenting such certificate a general or transit permit, according as the case may require; or, if the death shall have occurred in any township, and it shall be more convenient to present said certificate of death to the clerk of some city, borough, town or other municipal government, such course may be adopted, but the person presenting such certificate shall, in such case, also furnish said clerk with the name and post-office address of the assessor, if there be such officer, and if there be none, then of the clerk of the township in which the death shall have occurred, and shall also pay to said clerk the sum of two cents, and said clerk shall thereupon issue a general or transit permit as aforesaid, and shall also forthwith transmit said certificate, by mail, to the assessor or clerk, whose name and post-office address shall have been furnished as aforesaid, and for any neglect or failure so to transmit such certificate, said clerk shall be liable to a penalty of twenty dollars.

9. That it shall be the duty of the keeper of every cemetery within this state, owned by any cemetery company 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.

10. That it shall be the duty of every undertaker in this state, and of every person acting as undertaker in this state, to transmit by mail or otherwise to the assessor of the township, or if there be no assessor, then to the clerk of the township, within five days after burial, the certificate of death which he may have received and used as a burial permit in the case of any person who shall have died in such township, or of any person who shall have died out of this state and been buried in such township, and if he shall neglect or fail so to do he shall be liable to a penalty of twenty dollars; and any undertaker, or person acting as undertaker, who shall bury within this state the body of any deceased person without having first received a permit for burial, according to the true intent and meaning

of this act, and any clerk who shall sign any permit for burial and deliver the same, or knowingly suffer it to be delivered, to any undertaker or other person, without having first received a certificate of death, according to the true intent and meaning of this act, shall be liable to a penalty of fifty dollars.

11. That any minister of the gospel, magistrate, physician, midwife or other person, who shall knowingly make any false certificate of marriage, birth or death, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be liable to a fine not exceeding one hundred dollars or imprisonment in the county jail for a period not exceeding three months, or both, at the discretion of the court.

12. [As amended.] That it shall be the duty of the assessor and clerk of every township, and of the registrar of vital statistics and the clerk of every city, borough, town, and of the clerk of every county board of health and vital statistics, or other local municipal government in this state, on or before the fifteenth day of each calendar month, to transmit by mail to the state bureau of vital statistics at Trenton, in an envelope marked "vital statistics," all the certificates of marriages, births and deaths received by such officer, and of all "special returns" of births made during the preceding month, which certificates and returns it shall be the duty of every such officer to receive for such transmission; and every such assessor, registrar or clerk, upon receiving a certificate from the medical superintendent of said bureau of the whole number of certificates of marriages, births and deaths returned as aforesaid, shall be entitled to receive from the proper disbursing officer of the township, city, borough, town, county or other local municipal government in which such assessor, registrar or clerk shall be an officer, the sum of ten cents for each marriage, birth and death so returned, the receipt for which shall be attached to the said certificate of the said medical superintendent, and no payment shall be made unless such certificate be produced; and it shall further be the duty of the registrar of vital statistics, or the clerk of every city containing thirty thousand inhabitants or over, provided he has been or shall be so directed by the common council, or other governing body thereof, before transmitting said certificates to the state bureau of vital statistics, to make a complete record of the marriages, births and deaths occurring in such city, which record shall be a transcript of the names and vital facts appearing upon the certificates of marriages, births and deaths delivered to him as hereinbefore directed; the said record shall be so made up that the marriages, the births and the deaths shall appear in separate and distinct classes, in books of such form as may be approved by the local board of health, and for making such record the said registrar or clerk shall be entitled to receive from the disbursing officer of said city the sum of three cents for each certificate thus recorded in addition to his other fees and salary.

13. That it shall be the duty of the medical superintendent of said bureau to cause the certificates of marriages, births and deaths received by said bureau pursuant to the provisions of this act, to be

Penalty for making false certificates.

Assessors, clerks and registrars to transmit certificates to bureau of vital statistics

Fee for each certificate.

Record of births, marriages and deaths to be kept in certain cities.

Certificates of marriages, births and deaths to be alphabetically arranged by superintendent of bureau of vital statistics.

Proceedings in case of removal of bodies from this state.

Keepers of cemeteries to keep record of interments.

Undertakers to transmit burial certificates to assessors.

alphabetically indexed, and in connection with said index to cause to be transcribed or otherwise recorded from said certificates such of the vital facts appearing thereon as the state bureau of vital statistics may deem necessary and useful; the index to the certificates of marriages, of births and of deaths, with said record of vital facts, shall be kept separate and distinct from one another, and shall further be so arranged as to present in separate and distinct classes the index and record for each county, and for each city, borough, town and other local municipal government containing five thousand inhabitants or over, which index and record thus prepared and classified shall be preserved as a public record in the office of the state bureau of vital statistics, and the original certificates shall be preserved in the archives of the bureau of vital statistics; any such original certificate, or any copy thereof, certified to be a true copy under the hand of said medical superintendent, shall be received in evidence in any court of this state to prove the facts therein contained.

State bureau of vital statistics to prepare blank forms of certificates, &c.

14. That it shall be the duty of the state bureau of vital statistics to cause to be prepared blank forms of certificates of marriages, births and deaths, and of burial permits, corresponding to the requirements of this act, which forms, together with such sections of this law and such instructions and explanations thereof as the said bureau may deem useful to persons having duties to perform under this act, shall be printed and supplied in the same manner as the blanks and stationery for the use of the several departments and public offices of the state government are printed and supplied, and shall be distributed from time to time, as occasion shall require, by said bureau, amongst the assessors of the townships and the registrars and clerks of the cities, boroughs, towns and other local municipal governments of this state; and it shall be the duty of every such assessor, registrar and clerk to make and keep a complete list, as far as possible, of all ministers, magistrates, physicians, midwives, undertakers and other persons required to perform any duties under this act, and on or about the first day of May of each year to send to each such person a printed copy of such sections of this act and of such instructions and explanations as may be prepared as aforesaid, and also to furnish to each such person, on application, free of charge, a reasonable number of said blank forms as such person may require, and all certificates of marriages, births or deaths shall be made on the printed forms furnished by said bureau, or if they be written shall conform in all respects to said printed forms.

Duties of assessors, registrars and clerks.

Penalties, how and by whom recovered.

15. That any penalty incurred under any of the provisions of this act, which shall relate to any particular marriage, birth or death, may be recovered with costs in an action upon contract in the name of the local board of health of the township, city, borough, town or other local municipal government, within whose limits such particular marriage, birth or death shall have occurred; and any penalty incurred which shall relate to any particular burial, if the

death occur in this state, may be recovered in like manner in the name of the local board of health of the township, city, borough town or other local municipal government, within whose limits the death shall have occurred, but if the death occur without this state then such penalty shall be recovered with costs in an action upon contract in the name of the local board of health of the township, city, borough, town or other local municipal government within whose limits such burials may have been made; it shall be the duty of any health inspector, registrar of vital statistics or member of any local board of health, who shall know or be informed of any violation of this act, whereby any penalty may have been incurred, to make under oath or affirmation, a complaint against the person incurring such violation, setting forth the facts of such violation, and to file such complaint with the clerk of any district court or any justice of the peace, police justice or recorder of the township, city or municipality within which the local board in whose name the suit may be brought shall have jurisdiction, and the clerk of the district court, the justice of the peace, police justice or recorder with whom any complaint shall be filed as aforesaid, setting forth facts sufficient to show that any penalty prescribed by this act has been incurred, is hereby authorized and required to issue process, either in the nature of a summons or warrant, which process, when in the nature of a warrant, shall be returnable forthwith, and when in the nature of a summons shall be returnable in not less than five nor more than fifteen days; on the return of such process, or at any time to which the trial shall have been adjourned, the said court, justice of the peace, police justice or recorder, shall proceed to hear the testimony and to determine and give judgment in the matter without the filing of any pleadings, and if judgment shall be given in favor of the plaintiff, execution shall be forthwith issued against the goods and chattels and person of the defendant for the amount of the penalty with costs; the officers to serve and execute any process or execution issued as aforesaid, shall be the constables of the county, which service and execution shall be made in the same manner and under the same liabilities as prescribed in cases of the service and execution of process and executions by the act entitled "An act constituting courts for the trial of small causes" and the supplements thereto; all moneys recovered in any such action shall be paid to the local board of health in whose name the suit may have been brought, for the uses of such board.

16. That all acts and parts of acts inconsistent with the provisions of this act, be and the same are hereby repealed, and that this act shall take effect immediately.

Repealer.

Approved February 15th, 1888.

## MARRIAGES.

Neglect on the part of those solemnizing marriages to report the same not only incurs the penalty provided by the law, but often causes much inconvenience in securing evidence concerning questions of great moment. It is the right of each married person that this evidence shall be recorded, and these reports are also essential to the study of social conditions, and of the moral as well as the civic progress and the welfare of society. Those in charge of the various religious bodies at their annual, semi-annual or quarterly meeting should not fail to call attention to this duty of monthly report, and to the breach of law and ethics which the oversight involves.

A prompt return of the certificate to the local registrar or city clerk, or, in townships, to the assessor, is indispensable. Under the laws of this State, the person performing the marriage ceremony may administer the oath as to age, if there is doubt, but the signatures of the parties to the form on the back of the certificate, that they are of lawful age, is also available to defend against the marriage of minors.

## BIRTHS AND DEATHS.

The medical profession (see English Registrar-General and Privy Council Reports and article on Vital Statistics, Vols. I and II, Report of New Jersey State Board of Health, also Transactions of Medical Society of New Jersey, 1878), and the courts (see Supreme Court, Iowa, *Robinson v. Hamilton*; Report of Iowa Board of Health, 1883) recognize as a public duty the making of these reports, besides the obligation which law and the general interest of society impose. If physicians will carry a few blanks in the pocket-case or visiting record but little inconvenience will be experienced in making the certificates, and the bound books containing blanks for still-births, births and deaths will be found complete and convenient. Physicians and others who are by law required to make certificates will add much to the value of the returns by using ink of good quality, and by writing legibly. The facts should be accurately stated, and it should be borne in mind that every omission in filling up a certificate blank may seriously impair the record.

Such terms as general debility, dropsy, old age, sore throat, &c., are rarely defensible. On the other hand, cholera, typhus fever,

typhoid fever, diphtheria, cerebro-spinal meningitis, should not be certified to as causes of death, unless the specific character of the disease is clear. When pyæmia, septicæmia or accident occurs, the causes of these conditions should be stated. Where there is doubt as to the true cause of death, "Ap." for approximate may be written after the name of the disease.

In townships the assessor is required to make "special returns" of births in neglected cases, but the physician or midwife who shall have attended any such case is not thus relieved of the penalty for failure to certify to such births.

## TO UNDERTAKERS.

The procurement of the certificate in case of death is a part of the ordinary duty of the undertaker in connection with preparation for the burial. If the attending physician cannot be found, the undertaker may obtain a certificate of death from some other physician (see section 3, page 7), and where a permit is also required by the law, in cases where the city clerk or registrar cannot be found, any judge of the Court of Common Pleas or any justice of the peace of the county may furnish the permit.

The burial of human remains must be conducted in accordance with the requirements of the act approved March 25th, 1885, which provides that the top of the outside box shall be at least four feet below the natural surface of the ground in the case of adults, and in the case of infants the box shall be at least three and one-half feet below the ground surface.

The transportation of the bodies of persons who have died of certain infectious diseases is governed by section 3 of chapter 260 of the laws of 1895.

## TO REGISTRARS, CITY CLERKS AND ASSESSORS.

This circular will be supplied upon request, and may be sent by local boards of health, registrars, city clerks and assessors to any persons who neglect their duties under the law, or to physicians, clergymen and others who may take up their residence in the locality. No one, however, can plead ignorance of the law because no such special reminder is received. It is the duty of every assessor, city clerk and

registrar of vital statistics to keep a list of all local ministers, magistrates, physicians, midwives and undertakers (see section 14, page 11), and, about May 1st in each year, to send to each such person printed instructions relating to the requirements of the law concerning certificates of marriages, births and deaths, and also to furnish to such persons free of charge a reasonable number of blank forms for making such certificates.

In cases of disinterment and reburial the undertaker should sign an application for a permit, on blanks furnished by this bureau, and the permit may then be issued, provided that the law governing the removal of human remains is conformed to. (See act approved March 24th, 1890.) This law prohibits disinterments from May 1st to November 1st.

With the returns made October 15th of each year all registrars, assessors and city clerks are requested to send to this bureau the names and post-office addresses of any physicians who have commenced practice since the report of the previous year, and of any who have removed or died.

All correspondence should be addressed to the State Board of Health and Bureau of Vital Statistics, Trenton, New Jersey.

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Circular 92. July, 1897.

Announcement of the Opening of the State Laboratory of Hygiene

OPENING OF THE STATE LABORATORY OF HYGIENE.

The Laboratory of Hygiene, located in Princeton, has been reopened on a new and permanent basis, and is now prepared to conduct examinations for diagnosis in cases of suspected diphtheria, tuberculosis and other germ diseases. The service will be rendered, as heretofore, free of charge, and it is intended to establish depots for the mailing packages at accessible points throughout the State, and thus place the facilities offered by the laboratory within the reach of all physicians and health officers.

Epidemic outbreaks of whatever character, whether of diseases peculiar to man or to the lower animals, will be investigated, and a diagnosis given when possible.

Inquiries will be made into the character and purity of the animal products in use in this State for prophylactic and remedial purposes, and also concerning the causes of wholesale poisoning due to unwholesome food, and into the germicidal value of the various substances employed in sanitary operations.

Investigations of a private nature will not be undertaken, and physicians are requested not to send sections of tumors, &c., to the laboratory, as no examinations will be made of such substances, the work of the laboratory, being wholly devoted to the public health interests of the State.

A report stating the result of the examination will be sent by mail on the morning following the receipt of the specimen, and a report will also be sent by telegraph, at the expense of the parties interested, when a request that this shall be done is forwarded with the specimen.

Full letter postage should be prepaid on the mailing packages, and no specimen for the laboratory should be sent by mail unless it is properly inclosed in a mailing package constructed in accordance with the requirements of the order of the Postmaster-General issued February 5th, 1896.

The laboratory is conducted under the supervision of the State Board of Health, and Dr. B. Meade Bolton has been placed in charge of the work.

Dr. Bolton received his training under Professors Robert Koch and Carl Flügge in Germany, and was for several years assistant and associate in bacteriology at the Johns Hopkins University. He left the Johns Hopkins to take charge of the laboratory of the Board of Health of Philadelphia, Pa. He then accepted the professorship of bacteriology and pathology at the University of the State of Missouri, and resigned there to assume his present duties.

All correspondence relating to the laboratory should be addressed to Dr. B. Meade Bolton, Director State Laboratory of Hygiene, Princeton, N. J.

Upon request by letter, Dr. Bolton will send information to physicians and health officers showing the location of the nearest repository where the mailing cases may be obtained.

HENRY MITCHELL, M.D.,  
*Secretary.*

Circular 93. April, 1898.

Bacteriological Diagnosis, No. 2.

STATE LABORATORY OF HYGIENE, }  
PRINCETON, N. J. }

It is desired to extend the service of the laboratory to include examinations of specimens from cases of suspected gonorrhœa and of blood in cases of suspected malarial affections. Those who send specimens of this kind for examination should carefully follow the directions given below, for it is impossible to make diagnoses in these cases unless the specimens are properly prepared, and it would be useless to attempt an examination when the preparation of the specimen has been defective. It is therefore earnestly requested that no imperfectly prepared specimens be sent to the laboratory.

DIRECTIONS FOR PREPARING SPECIMENS FROM CASES OF SUSPECTED  
GONORRHOEA.

Take several slides and cover-glasses and cleanse them thoroughly with alcohol. Put a very small drop, not larger than a pin's head, of the pus on a slide. Put a cover-glass over it and press down gently. Then slip the cover-glass off and allow the slide and cover-glass to dry separately. Do not allow the cover-glass and slide to stick together, but always separate them before they are dry. If there is too much pus on the slide the examination will prove to be unsatisfactory. There should be only the thinnest possible layer. Both the slide and the cover-glass should be sent to the laboratory.

DIRECTIONS FOR THE PREPARATION OF BLOOD FOR EXAMINATION  
FOR THE MALARIAL ORGANISM.

It is essential to use perfectly clean slides and cover-glasses in making these preparations. They should be kept in alcohol and be taken out, one at a time, at the moment they are to be used. They should be wiped dry with a soft linen cloth and be gently warmed over a spirit lamp. The patient's finger or the lobe of the ear may be selected to take the blood from. After puncturing the flesh with a

needle, the cover-glass, while it is still slightly warm, should be applied to the drop of blood. The cover glass should then be placed quickly on the slide, with the drop of blood hanging downward. The blood should immediately spread out under the cover-glass to the very edges on all sides, without the aid of any pressure. As soon as this takes place, and before the blood dries, the cover-glass should be removed, and both the slide and the cover-glass should be allowed to dry separately. A thin layer is indispensable for a successful examination, as there should be but one layer of corpuscles exposed to view.

*Examinations will be made as heretofore* in suspected cases of diphtheria and tuberculosis. Full directions for collecting and forwarding to the laboratory specimens from suspected cases of these diseases will be found in Circular 86.

*Epidemic outbreaks* of whatever character, whether of diseases peculiar to man or to the lower animals, will be investigated, and a diagnosis given when possible.

*Anthrax and Glanders* can be identified by the bacteriological method. Specimens for examination should be sent only in the packages provided by this laboratory. These packages will be furnished upon application.

*Hydrophobia.*—The poison of this disease is found most readily in the brain of affected animals, and it is this organ which is selected for examination. As soon as possible after the death of the suspected animal, the brain should be removed, with aseptic precautions, wrapped in moist bi-chloride gauze, placed in a water-tight vessel (a glass preserve jar is convenient for this purpose), packed in ice, and forwarded to the laboratory. These specimens should, in every case, be sent by messenger.

*Bovine Tuberculosis.*—Milk from suspected herds or from individual cows may be packed in ice and sent to the laboratory by express or by messenger.

*Meat suspected to be tuberculous* should be packed in ice and sent to the laboratory by messenger.

*Inquiries will be made* into the character and purity of the animal products in use in this State for prophylactic and remedial purposes; concerning the causes of wholesale poisoning due to unwholesome food, and into the germicidal value of the various substances employed in sanitary operations.

*Under no circumstances* will investigations of a private nature be undertaken, and physicians are requested not to send sections of tumors, etc., to the laboratory, as the Board will not make examinations of such substances.

*A report stating the result* of the examination will be sent by mail on the morning following the receipt of the specimen, and a report will also be sent by telegraph, at the expense of the parties interested, when a request that this shall be done is forwarded with the specimen.

*Full letter postage* should be prepaid on the mailing packages, and no specimen for the laboratory should be sent by mail unless it is properly inclosed in a mailing package constructed in accordance with the requirements of the order of the Postmaster-General issued February 5th, 1896.

All correspondence relating to the laboratory should be addressed to B. Meade Bolton, M.D., Director State Laboratory of Hygiene, Princeton, N. J.

Upon request by letter, Dr. Bolton will send information to physicians and health officers showing the location of the nearest repository where the mailing cases may be obtained.

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Circular Letter 31.

Milk Adulteration by the Addition of Formaldehyde.

OFFICE OF THE BOARD OF HEALTH  
OF THE STATE OF NEW JERSEY,  
TRENTON. }

*To Local Boards of Health:*

The use of preservatives in milk has recently become so widespread that the attention of local boards of health is hereby especially called to the dangers of this practice, and health officers are advised to take immediate action to prevent further violations of the law.

Until quite recently the most frequent adulteration of milk has consisted in the addition of water and the removal of the cream, but with the introduction of formaldehyde as a food preservative there appears to have been planted among milk dealers a belief that the detection of this antiseptic by health officers is extremely difficult, and the use of this article has consequently grown to large proportions.



The injurious effects of this and other antiseptics are most readily observed in the cases of infants and invalids, and in persons suffering from enfeebled digestion, albumenoids and gelatin being rendered insoluble and the digestive process being thereby partially or wholly prevented.

The act approved March 14th, 1882, makes provision as follows:

"2. That every person who shall sell, or who shall offer for sale, or who shall transport or carry for the purpose of sale, who shall have in possession with intent to sell or offer for sale, any impure, adulterated or unwholesome milk, and every person who shall adulterate milk, or who shall keep cows for the production of milk in a crowded or unhealthy condition, or feed the same on food that produces impure, diseased or unwholesome milk, or shall feed cows on distillery waste, usually called 'swill,' or upon any substance in a state of putrefaction or rottenness, or upon any substance of an unwholesome nature, shall be liable to the penalties hereinafter provided for in this act.

"3. That the addition of water or any other substance or thing is hereby declared an adulteration, and milk that is obtained from animals that are fed on distillery waste, usually called 'swill,' or upon any substance in a state of putrefaction or rottenness, or upon any substance of an unhealthful nature, or milk that has been exposed to or contaminated by the emanations, discharges or exhalation from persons sick with any contagious disease, by which the health or life of any person may be endangered or compromised, is hereby declared to be impure and unwholesome. \* \* \*

"5. That every person who shall violate any of the provisions of this act shall be liable to a penalty of fifty dollars for the first offense and one hundred dollars for a second or subsequent offense.

"6. That justices of the peace and recorders shall have jurisdiction to try and punish all persons for violating the provisions of this act, and the penalties prescribed in section five of this act for the violation of any of the provisions of this act may be enforced before any justice of the peace or recorder in any county where the offense is committed or where the offender is first apprehended.

"7. That said justice of the peace or recorder, upon receiving due proof, made before him by the affidavit of one or more persons, of the violation of any of the provisions of said act by any person or persons, is hereby authorized and required by his warrant, under his hand and seal, directed to any constable or police officer of his county, to cause such person or persons to be arrested and brought before said justice or recorder, who shall hear and determine the guilt or innocence of the person or persons so charged, and upon conviction of said person or persons, the said justice or recorder is hereby authorized and required to impose upon the offender so convicted before him the penalties prescribed for such offenses; and if any person so convicted shall fail to pay the penalty so imposed, together with the costs of the prosecution, the said justice or recorder is hereby authorized and required to commit such offender to the common jail of said county for a period of not less than ten nor more than sixty days; provided, however, that an analysis of condemned milk shall

be made by a member of the council of public analysts of this state or the chemist of the state experiment station.

"8. That the certificate of any member of the council of public analysts, or chemist of the state experiment station, given under his hand and seal, and sworn to and subscribed before any justice of the peace or notary public in this state, shall be taken and accepted as prima facie evidence."

#### TESTS FOR FORMALDEHYDE IN MILK.

Test No. 1. Place in a test-tube four or five cubic centimeters of hydrochloric acid containing a trace of ferric chloride, and add about an equal quantity of the suspected milk.

Shake the mixture and heat nearly to the boiling point. If formaldehyde is present a violet coloration will appear.

Test No. 2. One or two cubic centimeters of concentrated sulphuric acid to which has been added a trace of ferric chloride is put into a test-tube, and four or five cubic centimeters of the suspected milk are added carefully, so that the milk and acid do not mix. If formaldehyde is present a violet zone is formed at the point of contact between the two liquids, the bluish violet coloration extending down some distance into the acid. When the coloration does not appear, it is advisable to dilute a portion of the suspected milk by the addition of four or five times its bulk of water, and repeat the test as above described.

Test No. 3. The results obtained by the foregoing examinations may be confirmed as follows: One cubic centimeter of a decolorized solution of fuchsine (1 gram of fuchsine to 500 cubic centimeters of water, decolorized by sulphurous acid) is added to ten cubic centimeters of milk. Shake and allow the mixture to stand five minutes. Then add two cubic centimeters of hydrochloric acid, and if formaldehyde is present a violet color will appear.

In cases where the local health officer discovers that milk has been adulterated by the addition of formaldehyde or other preservative the facts and evidence should be at once brought to the attention of the State Board of Health. If the adulterant has been added before delivery within the jurisdiction of the local board, further investigation by State officers will be made, if necessary, for the detection of the guilty parties.

Very respectfully,

HENRY MITCHELL,

Secretary.

## Circular Letter 32.

## Prevention of Small-Pox.

OFFICE OF THE BOARD OF HEALTH  
OF THE STATE OF NEW JERSEY,  
TRENTON. }

*To Local Boards of Health:*

Small-pox has prevailed as a widespread epidemic in a number of the States during the past year, and New Jersey, because of its being constantly traversed by travelers from all portions of the country, is especially exposed to the infection of the disease. Public attention has repeatedly been called by the State Board of Health to the vaccinal status of the inhabitants, and it has been shown that the ratio of unvaccinated children has increased from year to year, and that at present nearly 23 per cent. of those within school age are unprotected against small-pox.

An extensive outbreak of small-pox can be prevented with absolute certainty if vaccination of all susceptible persons is secured, and the question now arises, Shall general vaccination be done before a great calamity compels resort to this preventive measure, or must there first be startling losses of life to arouse parents, guardians, school boards, the public, and in too many instances the health authorities also, to a realizing sense of their duty to institute precautions against the spread of this pestilential disease?

The operation of vaccination has rarely, if ever, caused undesirable result except in cases where uncleanly methods have been employed in collecting or inserting the lymph, and as at present conducted, the operation is free from all objection.

The State Board of Health advises the adoption by local boards of health of the following measures for the prevention of small-pox:

1. Offer free vaccination and re-vaccination to all persons who cannot or will not pay for this service.
2. Urge boards of education to enforce the provision of Section 22 of Chapter 68 of the laws of 1887, which authorizes exclusion from the public schools of all pupils who have not been vaccinated.
3. Call the attention of boards of education to Section 23 of said Chapter 68, laws of 1887, which authorizes said boards to secure the vaccination of pupils.

4. Advise parents to cause every child to be vaccinated before reaching the age of one year.

5. In factories the superintendent should be advised to direct all employees to be vaccinated.

6. Advise that re-vaccination should be practiced as often as once every five years, and if a case of small-pox appears in the neighborhood all persons in the vicinity should be at once vaccinated or re-vaccinated.

7. Provide a suitable isolation hospital, and arrange for medical care, nursing and hospital supplies. (It should be remembered that domestic quarantine is unreliable and that no method for the isolation of infected persons is so effectual as that which attends hospital treatment.)

8. Require physicians and parents to notify the local health officer of every case of chicken-pox. Authority for this requirement is contained in sub-section 3, section 12, of chapter 68, laws of 1887.

(The early cases occurring during the epidemics of small-pox at present prevailing in Ohio and Pennsylvania were, in numerous instances, mistaken for chicken-pox, and whole communities were infected before the true nature of the disease was recognized.)

9. Prosecute vigorously every person who violates section 1 of chapter 260 of laws of 1895, which requires that the local board of health shall be immediately notified of every case of small-pox.

10. The State Board of Health should be notified by the local health officer, by wire, of the appearance of small-pox, and co-operation will be undertaken when necessary to prevent the spread of the disease.

Small-pox would forever cease if the preventive measures now thoroughly understood—vaccination, isolation and disinfection—were rigidly applied.

Very respectfully,

HENRY MITCHELL,  
*Secretary.*

## LAWS.

Following is a list of titles of bills having relation to hygiene, introduced during the legislative session of 1898:

Senate 93, entitled "An act to regulate the practice of dentistry in the state of New Jersey and to repeal certain acts now relating to the same." (Chapter 74.)

Senate 160, entitled "An act to authorize local boards of health in cities and boroughs of this state to license and regulate the business of dealing in milk, and to license proper persons to engage therein, and to prohibit unlicensed persons from engaging in such business.

Senate 167, entitled "An act in relation to contagious and infectious diseases among animals, and to repeal certain acts inconsistent therewith."

Senate 191, entitled "An act to amend an act entitled 'An act to authorize the boards of chosen freeholders of the several counties of this state to enter upon private lands for the purpose of removing obstructions from any stream or water-course or to change the course or channel of such stream or water-course, and to authorize the payment of the cost thereof,'" approved February twenty-third, one thousand eight hundred and ninety-seven.

Senate 197, entitled "A further supplement to the 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. (Chapter 182.)

Senate 200, entitled "An act to amend an act entitled 'An act for the protection of the public health,'" approved March twenty-second, one thousand eight hundred and ninety-five. (Chapter 101.)

Senate 201, entitled "A further supplement to the 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.

Senate 202, entitled "A supplement to the act entitled 'An act concerning marriage licenses,'" approved May eighteenth, one thousand eight hundred and ninety-seven. (Chapter 70.)

Senate 203, entitled "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.

Senate No. 207, entitled "An act to amend an act entitled '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, and which supplement was approved April twenty-third, one thousand eight hundred and ninety-seven. (Chapter 183.)

Senate No. 233, entitled "A supplement to an act entitled 'An act to regulate the practice of pharmacy in the State of New Jersey,'" approved April fifth, one thousand eight hundred and eighty six.

Senate No. 224, entitled "A further supplement to an act entitled 'An act to enable cities to supply the inhabitants thereof with pure and wholesome water,'" approved April twenty-first, eighteen hundred and seventy-six.

Senate 254. Empowering the governor to appoint three persons to consider the subject of the pollution of any stream or river, whose duty, after an investigation, shall be to prepare and perfect a plan for its prevention, and to report their conclusions to the legislature. The commissioners are to be paid not exceeding \$1,000 each, and may employ clerical help. They are authorized to spend \$25,000, which shall be apportioned among the taxing districts to be relieved, and raised by them like other taxes. (Chapter 233.)

Senate 265. Amends the act establishing a certification of marriages, births and deaths, and of the vital facts relating thereto.

Assembly No. 24, entitled "An act to authorize the assessment of the cost of the construction of sewers, drains and receiving-basins in cities of this state, where the proceedings taken for the construction thereof has been informal and defective." (Chapter 49.)

Assembly No. 43, entitled "An act empowering municipal corporations, wherein a public scavenger service is maintained, to pass and enforce ordinances requiring that garbage and offal be kept in covered receptacles and separate from ashes and cinders." (Chapter 102.)

Assembly No. 80, entitled "An act to amend an act entitled 'An act concerning marriage licenses,'" approved May eighteenth, one thousand eight hundred and ninety-seven. (Chapter 119.)

Assembly No. 142, entitled "An act to amend an act entitled 'An act to provide for the repaving, repairing and improvement of paved

streets and public places and reconstruction of sewers in cities of the first class in this state," approved April sixteenth, one thousand eight hundred and ninety-seven. (Chapter 75.)

Assembly No. 155, entitled "A supplement to an act entitled 'An act to provide for sewerage or drainage, or both, in townships,'" approved May ninth, one thousand eight hundred and ninety-four, and to amend the same. (Chapter 109.)

Assembly No. 172, entitled "An act to authorize the establishment and provide for the maintenance of hospitals in counties of the first class.

Assembly 173. Authorizes third-class cities to construct and maintain a general system of sewerage and drainage. (Chapter 48.)

Assembly No. 174, entitled "An act to repeal an act entitled 'An act concerning registrars of vital statistics in cities of the second class in this state,'" approved March twenty-first, one thousand eight hundred and ninety-five.

Assembly No. 175, entitled "A further supplement to an act entitled 'An act to authorize cities to construct sewers and drains, and to provide for the payment of the cost thereof,'" approved March eighth, one thousand eight hundred and eighty-two. (Chapter 141.)

Assembly No. 186, entitled "An act to amend an act entitled 'An act to regulate the manufacture of flour and meal food-products,'" approved April sixteenth, one thousand eight hundred and ninety-six.

Assembly No. 208, entitled "An act authorizing the cremation of garbage, and the acquisition of lands and the erection of crematories thereon for that purpose, in all municipalities of this state wherein a public scavenger system is maintained."

Assembly No. 224, entitled "An act authorizing governing bodies of the townships of this state to open streets for the construction of sewers without consent of the land-owners, whenever the local board of health of any township shall recommend to the governing body thereof that the construction of a sewer or sewers is necessary for the preservation of the public health."

Assembly No. 247, entitled "An act for the construction, maintenance and operation of systems of sewerage in any municipality in this state." (Chapter 210.)

Assembly No. 255, entitled "An act to provide for the appointment of inspectors of meat in cities of this state."

Assembly No. 258, entitled "An act empowering municipal corporations, wherein a public service is maintained, to pass and enforce ordinances requiring that garbage and offal be kept in covered receptacles and separate from ashes and cinders."

Assembly No. 259, entitled "An amendment 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.

Assembly 260. Amends the borough act relative to the construction and purchase of water-works and sewer systems.

Assembly No. 267, entitled "An act authorizing the appointment of commissioners to consider the subject of the pollution of the rivers and streams within this state, to provide a plan for the prevention thereof, and for the relief of the persons and property affected thereby, and to provide for the expenses necessary for that purpose."

Assembly No. 270, entitled "A further supplement to an act entitled 'An act concerning contagious and infectious diseases among animals, and to repeal certain acts relating thereto,'" approved May fourth, one thousand eight hundred and eighty-six. (Chapter 148.)

Assembly No. 292, entitled "A supplement to an act entitled 'An act to prevent the adulteration of food and drugs,'" approved March twenty-fifth, one thousand eight hundred and eighty-one.

Assembly No. 301, entitled "A supplement to an act entitled 'An act to provide for drainage where the same is necessary to the public health,'" approved March twenty-fourth, one thousand eight hundred and eighty-one. (Chapter 160.)

"An act respecting boroughs, providing for the purchase of sewers." (Chapter 156.)

"A supplement to an act entitled 'An act to authorize towns and villages to construct sewers.'" (Chapter 68.)

## PUBLIC DECLARATION

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

At a meeting of the Board of Health of the State of New Jersey, held October 11th, 1898, the following resolutions were adopted:

*Resolved*, That in accordance with the provision of Chapter 260 of the laws of 1895, entitled "An act for the protection of the public health," the Board of Health of the State of New Jersey hereby declares and gives notice that purulent ophthalmia is preventable and especially dangerous to the public health.

*Resolved*, That purulent ophthalmia shall be added to the list of dangerous communicable diseases named in Section 1 of said Chapter 260 of the laws of 1895.

HENRY MITCHELL,  
*Secretary.*

Trenton N. J., }  
October 11th, 1898. }

Following are Sections 1 and 2 of the act referred to in the foregoing declaration:

CHAPTER CCLX, LAWS OF 1895.

AN ACT for the protection of the public health.

1. BE IT ENACTED by the Senate and General Assembly of the State of New Jersey, 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 diseases 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; and every house-owner or householder who knows that any person living, dwelling or being in any building under his control is affected by any of the contagious, infectious or communicable diseases hereinabove specified or referred to shall, when no physician has professionally attended such sick person, within twelve hours after discovering the same, report the fact in writing to the same person and in the same manner as any physician attending such sick person would be required to do as hereinabove set forth; and on the thirtieth day of June and the thirty-first day of December in each and every year every physician, house-owner and householder making any report or reports as in this section required, shall be entitled to receive from the officer to whom such report or reports shall have been made during the preceding six months a certificate in writing under the hand of such officer, setting forth the number of names of persons reported to have been affected with any of the diseases hereinabove specifically named or referred to, which certificate, when presented by such physician, house-owner or householder to the proper disbursing officer of the city, borough, town or other local municipal government or township within which such affected person may have been, shall entitle such physician, house-owner or householder to receive from such disbursing officer the sum of ten cents for each and every name by such certificate 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 officers 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.

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Purulent ophthalmia is added to the list of notifiable diseases, because the attention of the board has been called to the increase of blindness which is occurring as a result of this disease, and because the act of the legislature, approved March 11th, 1895, has not been found effectual in bringing cases of this nature to the notice of health officers.

Following is the act referred to:

[P. L. 1895, p. 282.]

1. 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. That the said local board of health shall direct the parents or person 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. 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. That any failure to comply with the provisions of this act shall be punished 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.

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TWENTIETH REPORT

OF THE

BUREAU OF VITAL STATISTICS

FOR THE

STATISTICAL YEAR ENDING JUNE 30,

1898.

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(465)

# REPORT ON VITAL STATISTICS.

## INTRODUCTION.

The system at present in operation in New Jersey for the collection and preservation of records of births, marriages and deaths was inaugurated in 1878, the records previously made having been almost altogether limited in their usefulness to serve as legal proofs in the courts, and their bearing upon the prevalence of disease and the causes of premature deaths had no consideration.

The advantage to the State which would attend an accurate and speedy system for the collection, classification and tabulation of such statistics was recognized by Dr. Ezra M. Hunt and his associates, and the necessity for improvement in the study of these records formed the foundation upon which has been erected the public health service of New Jersey. The State Board of Health became the State Bureau of Vital Statistics under the act of 1878, and under subsequent enactments every local board of health was empowered to appoint a Registrar of Vital Statistics and to have knowledge of the facts relating to the number and causes of deaths occurring within the territory over which the board has jurisdiction. The statistical year was made to end June 30th, because the October report of the Bureau of Vital Statistics could then present the tabulated records with less delay than would occur if the statistical year was made to conform to the calendar year. Experience during the past twenty years has shown that delay sometimes occurs in receiving returns in cases where the local registration officer is succeeded by a new official, and occasionally from other causes, and consequently the period between the registration of the returns and the publication of the report is too brief to admit of a satisfactory presentation of deduction from a study of the facts at hand.

It has therefore been determined by this Bureau to publish in the Annual Report for 1901 the vital statistics for the year ending December 31st, 1900, and it is believed that the value of the vital records of the State will be increased for purposes of comparison with



other States and countries when the statistical and calendar years shall thus coincide.

The act approved February 15th, 1888, requires that all births, marriages and deaths shall be certified on blanks provided by the State, and that the original certificate shall be transmitted to this bureau. All local registrars may keep a record of the facts stated in the certificate, and in all cities containing thirty thousand inhabitants or over the governing body may require the local registrar to keep such a record.

Quinquennial tables have been presented from time to time, and decennial tables were published in 1888, and while the indications of the annual, quinquennial and decennial tables are often unmistakably correct, yet the records for a longer series of years are necessary to eliminate all errors.

In this issue we group the tables for the twenty years ending June 30th, 1898, and show on charts some of the averages for this period.

The movement of the population in the counties and cities having 5,000 inhabitants or over is shown in the following tables :

Population of New Jersey by Counties for the Census Years  
1880, 1885, 1890, 1895.

	1880.	1885.	1890.	1895.
Atlantic, . . . . .	18,704	22,356	28,836	34,750
Bergen, . . . . .	36,786	39,880	47,226	65,251
Burlington, . . . . .	55,403	57,558	58,528	59,117
Camden, . . . . .	62,942	75,685	87,687	100,104
Cape May, . . . . .	9,765	10,744	11,268	12,855
Cumberland, . . . . .	37,687	41,982	45,438	49,815
Essex, . . . . .	189,929	213,764	250,098	315,000
Gloucester, . . . . .	25,686	27,803	28,649	31,191
Hudson, . . . . .	187,944	240,342	275,126	328,080
Hunterdon, . . . . .	38,570	37,420	35,355	35,334
Mercer, . . . . .	68,061	66,785	79,975	85,538
Middlesex, . . . . .	62,298	56,180	61,754	70,668
Monmouth, . . . . .	55,538	62,324	69,128	75,543
Morris, . . . . .	50,861	50,675	54,101	59,636
Ocean, . . . . .	14,465	16,386	15,974	18,759
Passaic, . . . . .	68,860	83,374	105,046	133,227
Salem, . . . . .	24,579	25,373	25,151	26,084
Somerset, . . . . .	27,162	27,425	28,311	30,447
Sussex, . . . . .	29,539	22,401	22,259	22,585
Union, . . . . .	61,671	61,339	72,467	85,404
Warren, . . . . .	36,659	37,737	36,553	37,283

Population of the Cities of New Jersey Having 5,000 Inhabitants  
or Over for the Census Years 1880, 1885, 1890 and 1895.

	1880.	1885.	1890.	1895.
Atlantic County—				
Atlantic City, . . . . .	5,477	7,942	13,055	18,329
Bergen County—				
Hackensack, . . . . .				7,282
Burlington County—				
*Bordentown, . . . . .	5,334	5,857	5,990	5,176
Burlington, . . . . .	7,237	7,690	7,264	7,844
Camden County—				
Camden City, . . . . .	41,659	52,884	58,313	63,467
Gloucester City, . . . . .	5,347	5,966	6,564	6,225
Cumberland County—				
Bridgeton, . . . . .	8,722	10,065	11,424	13,292
Millville, . . . . .	7,660	8,824	10,002	10,466
Essex County—				
Newark, . . . . .	136,508	152,988	181,830	215,806
Orange, . . . . .	13,207	15,431	18,844	22,792
Hudson County—				
Bayonne, . . . . .	9,372	13,080	19,033	19,856
Harrison, . . . . .	6,898	6,806	8,338	9,672
Hoboken, . . . . .	30,999	37,721	43,648	54,083
Jersey City, . . . . .	120,722	153,613	183,093	192,713
Town of Union, . . . . .	5,849	8,398	10,648	13,336
Mercer County—				
Chambersburg, . . . . .	5,437	8,542		
Trenton, . . . . .	29,910	34,386	57,458	62,518
Middlesex County—				
New Brunswick, . . . . .	17,166	18,258	18,603	19,910
Perth Amboy, . . . . .			9,612	13,030
Monmouth County—				
Long Branch, . . . . .		5,140	7,231	7,333
Morris County—				
Morristown, . . . . .	6,837	8,760	8,156	10,290
Passaic County—				
Passaic City, . . . . .	6,532		13,028	17,894
Paterson, . . . . .	51,031	8,326	78,547	97,344
Salem County—				
Salem City, . . . . .	5,056	5,516	6,516	6,337
Union County—				
Elizabeth, . . . . .	28,229	32,119	37,764	43,834
Plainfield, . . . . .	8,125	8,913	11,267	13,629
Rahway, . . . . .	6,455	6,861	7,105	7,945
Warren County—				
Phillipsburg, . . . . .	7,181	8,068	8,644	9,081

\* Includes the township.

Table Showing Number of Deaths from Each of the Classified Diseases for Twenty Years, 1879-1908.

DISEASES.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Remittent fever, &c.	395	576	443	573	505	505	505	512	522	526	526	526	526	526	526	526	526	526	526	526
Small-pox.....	284	15	354	867	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
Scarlet fever.....	627	673	695	1266	656	847	646	232	255	574	537	209	253	1076	446	372	294	183	203	201
Diphtheria and croup.....	1190	673	1128	1473	1146	1027	1464	1368	1027	938	1074	1676	1737	1776	1677	1264	1664	1768	1382	960
Whooping cough.....	277	87	70	238	139	110	151	84	181	181	301	275	271	299	305	287	285	273	276	181
Measles.....	1090	873	1128	1473	1146	1027	1464	1368	1027	938	1074	1676	1737	1776	1677	1264	1664	1768	1382	960
Diarrhœal diseases of children.....	1869	2195	2265	2765	2425	2645	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624
Consumption, M.....	3738	3714	3680	1696	1837	1837	1673	1681	1910	1735	1903	1840	1840	1840	1840	1840	1840	1840	1840	1840
Consumption, F.....	2169	1968	2293	2752	2756	3174	3243	3290	2523	2623	2624	2624	2624	2624	2624	2624	2624	2624	2624	2624
Acute lung diseases.....	1647	1638	1643	1999	1883	1838	1781	1774	1886	1871	1937	2023	2026	2243	2072	2053	1925	2018	1869	1643
Brain and nervous diseases of children.....	523	523	523	523	523	523	523	523	523	523	523	523	523	523	523	523	523	523	523	523
Brain and nervous diseases of adults.....	523	523	523	523	523	523	523	523	523	523	523	523	523	523	523	523	523	523	523	523
Heart and chest affections.....	1341	1305	1320	1401	1253	1175	1140	1213	1276	1480	1331	1273	1273	1273	1273	1273	1273	1273	1273	1273
Diarrhœa and intestinal diseases.....	378	451	408	451	454	494	448	574	612	579	640	640	640	640	640	640	640	640	640	640
Cancer.....	70	54	89	62	83	62	66	139	143	117	108	76	100	100	103	91	63	59	67	55
Amebic rheumatism.....	194	244	303	344	369	371	354	361	350	350	350	350	350	350	350	350	350	350	350	350
Purpura.....	194	244	303	344	369	371	354	361	350	350	350	350	350	350	350	350	350	350	350	350
Violent death.....	194	244	303	344	369	371	354	361	350	350	350	350	350	350	350	350	350	350	350	350
Total deaths per year.....	1977	1544	1759	2310	2116	2397	2794	2431	2773	2645	2840	2840	2840	2840	2840	2840	2840	2840	2840	2840

\* Norm.—Total deaths as given include deaths under one month, which are not classified. If all diseases are added, a discrepancy will be found which is due to the fact that death under one month are not classified under classified diseases.

Table Showing Death-rate for 1 000 Population in the Cities of New Jersey Having over 5,000 Population, for Twenty Years, 1879-1898.

NAMES OF CITIES.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Atlantic City.....	24.46	31.76	26.26	22.50	23.54	31.00	27.20	22.84	26.57	26.01	26.46	26.19	16.47	18.28	19.20	18.76	20.45	16.80	16.80	16.80
Bordentown.....	16.53	16.69	15.31	15.86	15.88	15.88	15.83	15.65	15.65	15.65	15.65	15.65	15.65	15.65	15.65	15.65	15.65	15.65	15.65	15.65
Camden.....	13.46	13.61	13.67	13.61	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65	13.65
Clintonsville.....	14.10	15.70	16.32	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58	13.58
Bridgeport.....	15.73	17.75	19.74	22.85	15.43	18.69	17.78	15.92	16.19	17.09	14.81	17.70	13.40	16.05	17.62	18.39	18.76	15.41	15.63	13.10
Bridgeton.....	20.22	23.71	17.75	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27
Camden.....	18.71	21.73	26.46	24.70	21.88	23.14	24.49	27.02	25.69	27.26	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62	23.62
Clarksville.....	25.23	15.94	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48
Bayonne.....	25.23	15.94	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48	16.48
Harrison.....	31.01	30.63	31.43	33.18	33.68	33.68	33.68	33.68	33.68	33.68	33.68	33.68	33.68	33.68	33.68	33.68	33.68	33.68	33.68	33.68
Hoboken.....	27.01	27.71	28.29	28.61	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74	28.74
Jersey City.....	20.04	20.09	20.61	20.12	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74	20.74
Town of Union.....	20.04	18.80	18.83	18.78	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48
New Brunswick.....	20.04	18.80	18.83	18.78	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48	18.48
New Brunswick.....	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06
Paterson.....	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06
Elizabeth.....	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06
Plainfield.....	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06	18.06
Phillipsburg.....	14.06	14.06	14.06	14.06	14.06	14.06	14.06	14.06	14.06	14.06	14.06	14.06	14.06	14.06	14.06	14.06	14.06	14.06	14.06	14.06
Total.....	19.41	19.14	20.74	20.20	20.09	21.26	20.63	22.21	21.76	21.04	23.19	22.67	24.81	22.93	20.95	20.87	20.37	18.81	17.05	

\* The death-rate in seaside resorts is calculated on the basis of the resident population, whereas the rate in other localities is not a criterion of health conditions. The death-rate in inland resorts is calculated on the basis of the total population, whereas the rate in other localities is not a criterion of health conditions.

## NUMBER OF MARRIAGES, BIRTHS AND DEATHS,

By Counties, Cities and Townships, and Totals for the State,  
for the Year Ending June 30th, 1898.

### ATLANTIC COUNTY.

	M.	B.	D.
Absecon, . . . . .	4	11	10
Atlantic City, . . . . .	210	424	363
Buena Vista, . . . . .	10	38	25
Egg Harbor City, . . . . .	14	43	21
Egg Harbor Township, . . . . .	25	71	40
Galloway, . . . . .	11	45	17
Hamilton, . . . . .	13	50	30
Hammonton, . . . . .	42	96	71
Maulica, . . . . .	3	22	10
Weymouth, . . . . .	*	18	8
	* 3		
	341	818	595

\* Marriage certificates received from County Clerk, in which the place where the marriage was performed is not stated.

### BERGEN COUNTY.

	M.	B.	D.
Bergen, . . . . .	5	52	28
Eaglewood, . . . . .	26	69	72
Franklin, . . . . .	22	60	40
Hackensack, . . . . .	72	114	92
Harrington, . . . . .	22	63	44
Hillsdale, . . . . .	0	1	0
Hobokas, . . . . .	13	42	43
Lodi, . . . . .	49	203	93
Midland, . . . . .	10	38	39
Orvil, . . . . .	9	43	34
Overpeck, . . . . .	7	27	12
Palisade, . . . . .	21	74	53
Ridgefield, . . . . .	19	107	89
Ridgewood, . . . . .	19	77	58
Saddle River, . . . . .	20	98	35
Teaneck, . . . . .	2	1	5
Union, . . . . .	43	101	108
Washington, . . . . .	13	73	56
	*2		
	374	1,223	910

\* Marriage certificates received from County Clerk, in which the place where the marriage was performed is not stated.

## BURLINGTON COUNTY.

	M.	B.	D.
Bass River, . . . . .	5	17	11
Beverly, . . . . .	25	38	50
Bordentown, . . . . .	31	63	95
Burlington, . . . . .	63	90	133
Chester, . . . . .	40	85	59
Chesterfield, . . . . .	2	15	14
Cinnaminson, . . . . .	8	42	17
Delran, . . . . .	3	18	9
Eastampton, . . . . .	0	5	0
Evesham, . . . . .	7	28	12
Florence, . . . . .	6	51	28
Lumberton, . . . . .	3	13	16
Mansfield, . . . . .	2	17	21
Medford, . . . . .	15	50	35
Mount Laurel, . . . . .	0	26	18
New Hanover, . . . . .	11	14	23
Northampton, . . . . .	40	53	90
Palmyra, . . . . .	10	34	30
Pemberto, . . . . .	15	26	24
Riverside, . . . . .	8	66	18
Shamong, . . . . .	2	1	9
Southampton, . . . . .	9	9	8
Springfield, . . . . .	2	17	12
Washington, . . . . .	4	18	10
Westampton, . . . . .	0	10	11
Willingboro, . . . . .	1	4	6
Woodland, . . . . .	1	5	3
	*10		
	323	795	76

\* Marriage certificates received from County Clerk, in which the place where the marriage was performed is not stated.

## CAMDEN COUNTY.

	M.	B.	D.
Camden City, . . . . .	824	1,170	1,186
Centre, . . . . .	4	37	33
Delaware, . . . . .	0	12	19
Gloucester City, . . . . .	47	108	114
Gloucester, . . . . .	28	75	92
Haddon, . . . . .	39	77	75
Pensauken, . . . . .	6	34	31
Stockton, . . . . .	61	202	130
Waterford, . . . . .	17	59	40
Winslow, . . . . .	5	37	39
	*31		
	1,082	1,811	1,762

\* Marriage certificates received from the County Clerk, in which the place of marriage is not stated.

## CAPE MAY COUNTY.

	M.	B.	D.
Cape May City, . . . . .	23	44	40
Dennis, . . . . .	23	47	27
Lower, . . . . .	13	37	29
Middle, . . . . .	27	46	30
Upper, . . . . .	12	57	27
	*1		
	99	227	163

\* Marriage certificate, in which the place where the marriage was performed is not stated.

## CUMBERLAND COUNTY.

	M.	B.	D.
Bridgeton, . . . . .	85	286	189
Commercial, . . . . .	18	25	7
Deerfield, . . . . .	20	49	25
Downe, . . . . .	9	13	13
Fairfield, . . . . .	12	14	17
Greenwich, . . . . .	7	25	26
Hopewell, . . . . .	8	19	29
Landis, . . . . .	71	146	119
Lawrence, . . . . .	8	37	11
Maurice River, . . . . .	14	22	22
Millville, . . . . .	96	241	133
Stow Creek, . . . . .	3	20	5
	351	897	596

## ESSEX COUNTY.

	M.	B.	D.
Belleville, . . . . .	12	92	89
Bloomfield, . . . . .	53	263	127
Caldwell, . . . . .	16	43	36
Clinton, . . . . .	38	103	65
East Orange, . . . . .	81	235	166
Franklin, . . . . .	6	60	33
Livingston, . . . . .	3	17	15
Millburn, . . . . .	13	65	29
Montclair, . . . . .	77	311	169
Newark, . . . . .	1,979	5,051	3,932
Orange, . . . . .	151	565	480
South Orange, . . . . .	45	119	86
Verona, . . . . .	14	41	18
West Orange, . . . . .	22	111	76
	*13		
	2,522	7,016	5,312

\* Marriage certificates received from the County Clerk, in which the place of marriage is not stated.

## GLOUCESTER COUNTY.

	M.	B.	D.
Clayton, . . . . .	19	42	26
Deptford, . . . . .	9	35	25
East Greenwich, . . . . .	5	26	16
Elk, . . . . .	2	6	7
Franklin, . . . . .	8	41	28
Glassboro, . . . . .	25	69	29
Greenwich, . . . . .	6	26	32
Harrison, . . . . .	9	26	23
Logan, . . . . .	7	26	14
Mantua, . . . . .	21	29	22
Monroe, . . . . .	21	30	35
South Harrison, . . . . .	3	8	8
Washington, . . . . .	3	15	14
West Deptford, . . . . .	4	33	25
Woodbury, . . . . .	39	72	62
Woolwich, . . . . .	21	50	38
	*4		
	206	535	404

\* Marriage certificates received from the County Clerk, in which the place where the marriage was performed is not stated.

## HUDSON COUNTY.

	M.	B.	D.
Bayonne, . . . . .	233	781	509
Guttenberg, . . . . .	6	80	70
Harrison, . . . . .	68	130	249
Hoboken, . . . . .	640	1,831	1,090
Jersey City, . . . . .	1,393	3,723	3,727
Kearny, . . . . .	45	161	244
North Bergen, . . . . .	39	146	296
Town of Union, . . . . .	152	289	293
Union, . . . . .	32	115	64
Weehawken, . . . . .	7	79	60
West Hoboken, . . . . .	144	578	277
	*9		
	2,785	7,912	6,789

\* Marriage certificates received from the County Clerk, in which the place of marriage is not stated.

## HUNTERDON COUNTY.

	M.	B.	D.
Alexandria, . . . . .	2	11	15
Bethlehem, . . . . .	14	20	22
Clinton, . . . . .	31	41	32
Delaware, . . . . .	31	25	42
East Amwell, . . . . .	8	23	16
Franklin, . . . . .	8	11	15
Frenchtown, . . . . .	12	19	12
High Bridge, . . . . .	9	22	19
Holland, . . . . .	3	39	18
Kingswood, . . . . .	6	30	10
Lambertville, . . . . .	26	81	66
Lebanon, . . . . .	29	45	32
Lebanon, . . . . .	27	54	49
Raritan, . . . . .	18	33	46
Readington, . . . . .	12	22	17
Tewksbury, . . . . .	7	6	11
Union, . . . . .	1	9	8
West Amwell, . . . . .			
	235	491	430

## MERCER COUNTY.

	M.	B.	D.
East Windsor, . . . . .	24	39	34
Ewing, . . . . .	5	19	114
Hamilton, . . . . .	24	34	108
Hopewell, . . . . .	43	60	70
Lawrence, . . . . .	6	11	19
Princeton, . . . . .	81	97	69
Trenton, . . . . .	583	764	1013
Washington, . . . . .	7	16	10
West Windsor, . . . . .	3	11	14
	*8		
	734	1,051	1,451

\* Marriage certificates received from the County Clerk, in which the place where the marriage was performed is not stated.

## MIDDLESEX COUNTY.

	M.	B.	D.
Cranbury, . . . . .	9	19	15
East Brunswick, . . . . .	31	78	99
Madison, . . . . .	3	14	13
Monroe, . . . . .	13	21	19
New Brunswick, . . . . .	138	351	305
North Brunswick, . . . . .	10	9	11
Perth Amboy, . . . . .	94	324	228
Piscataway, . . . . .	11	38	45
Raritan, . . . . .	21	50	50
Sayreville, . . . . .	23	102	30
South Amboy, . . . . .	51	118	83
South Brunswick, . . . . .	19	49	26
Woodbridge, . . . . .	25	141	89
	449	1,307	1,011

## MONMOUTH COUNTY.

	M.	B.	D.
Atlantic, . . . . .	6	4	13
Eatontown, . . . . .	19	40	36
Freehold, . . . . .	55	102	64
Holmdel, . . . . .	4	24	15
Howell, . . . . .	51	51	43
Long Branch, . . . . .	88	63	134
Manalapan, . . . . .	13	15	15
Marlboro, . . . . .	8	7	24
Matawan, . . . . .	16	52	35
Middletown, . . . . .	31	114	89
Millstone, . . . . .	12	18	17
Neptune, . . . . .	114	152	151
Ocean, . . . . .	13	21	23
Raritan, . . . . .	27	113	72
Shrewsbury, . . . . .	84	137	124
Upper Freehold, . . . . .	19	55	13
Wall, . . . . .	56	73	90
	*2		
	597	1,031	958

\* Marriage certificates received from the County Clerk, in which the place where the marriage was performed is not stated.

## MORRIS COUNTY.

	M.	B.	D.
Boonton, . . . . .	13	43	50
Chatham, . . . . .	37	106	72
Chester, . . . . .	14	32	23
Dover, . . . . .	61	129	79
Hanover, . . . . .	21	58	117
Jefferson, . . . . .	4	3	21
Menlham, . . . . .	9	24	16
Montville, . . . . .	9	13	9
Morristown, . . . . .	109	199	201
Mount Olive, . . . . .	8	31	13
Passaic, . . . . .	5	10	21
Pequannock, . . . . .	15	27	22
Randolph, . . . . .	10	62	39
Rockaway, . . . . .	39	83	73
Roxbury, . . . . .	14	56	37
Washington, . . . . .	5	36	8
	363	912	801

## OCEAN COUNTY.

	M.	B.	D.
Berkeley, . . . . .	0	10	10
Brick, . . . . .	13	71	28
Dover, . . . . .	33	44	32
Egglewood, . . . . .	12	18	17
Jackson, . . . . .	6	15	9
Lacey, . . . . .	2	12	7
Lakewood, . . . . .	27	62	55
Little Egg Harbor, . . . . .	14	43	44
Manchester, . . . . .	2	10	14
Ocean, . . . . .	2	11	3
Plumsted, . . . . .	8	10	18
Stafford, . . . . .	3	14	3
Union, . . . . .	8	16	9
	130	336	261

## PASSAIC COUNTY.

	M.	B.	D.
Acquackanonk, . . . . .	9	47	49
Little Falls, . . . . .	6	51	37
Manchester, . . . . .	16	107	54
Passaic, . . . . .	306	681	413
Paterson, . . . . .	849	1,955	1,728
Pompton, . . . . .	32	26	27
Wayne, . . . . .	7	18	16
West Milford, . . . . .	10	16	23
	*6		
	1,241	2,901	2,347

\* Marriage certificates received from the County Clerk, in which the place where the marriage was performed is not stated.

## SALEM COUNTY.

	M.	B.	D.
Alloway, . . . . .	8	15	29
Elsinboro, . . . . .	0	1	11
Lower Alloways Creek, . . . . .	8	20	12
Lower Penns Neck, . . . . .	3	14	20
Mannington, . . . . .	3	10	36
Oldmans, . . . . .	8	35	16
Pilesgrove, . . . . .	23	52	57
Pittsgrove, . . . . .	17	52	37
Quinton, . . . . .	7	21	18
Salem, . . . . .	74	43	125
Upper Penns Neck, . . . . .	26	31	27
Upper Pittsgrove, . . . . .	7	20	22
	*1		
	185	314	410

\* Marriage certificate received from the County Clerk, in which the place where the marriage was performed is not stated.

## SOMERSET COUNTY.

	M.	B.	D.
Dedminster, . . . . .	19	44	13
Bernards, . . . . .	18	33	30
Branchburg, . . . . .	3	11	16
Bridgewater, . . . . .	118	188	139
Franklin, . . . . .	15	55	39
Hillsborough, . . . . .	9	29	31
Montgomery, . . . . .	5	29	17
North Plainfield, . . . . .	47	97	62
Warren, . . . . .	4	13	12
	*2		
	237	487	359

\* Marriage certificates received from the County Clerk, in which the place of marriage is not stated.

## SUSSEX COUNTY.

	M.	B.	D.
Andover, . . . . .	10	19	19
Byram, . . . . .	14	24	13
Frankford, . . . . .	13	26	29
Green, . . . . .	5	8	6
Hardyston, . . . . .	6	7	4
Hampton, . . . . .	25	6	31
Lafayette, . . . . .	1	0	4
Montague, . . . . .	0	3	7
Newton, . . . . .	23	41	33
Newton, . . . . .	9	10	13
Sandyston, . . . . .	6	32	28
Sparta, . . . . .	15	12	4
Stillwater, . . . . .	7	13	18
Vernon, . . . . .	7	13	18
Walpack, . . . . .	19	19	39
Wantage, . . . . .	*1		
	156	222	249

\* Marriage certificate received from the County Clerk, in which the place where the marriage was performed is not stated.

## UNION COUNTY.

	M.	B.	D.
Clark, . . . . .	2	1	4
Cranford, . . . . .	14	50	33
Elizabeth, . . . . .	309	1,067	736
Fanwood, . . . . .	4	18	20
Linden, . . . . .	11	29	30
New Providence, . . . . .	3	17	18
Plainfield, . . . . .	86	268	213
Rahway, . . . . .	61	58	121
Springfield, . . . . .	3	27	10
Summit, . . . . .	34	81	61
Union, . . . . .	6	47	29
Westfield, . . . . .	21	62	49
	*1		
	655	1,725	1,324

\* Marriage certificate received from the County Clerk, in which the place where the marriage was performed is not stated.

## WARREN COUNTY.

	M.	B.	D.
Alamuchy, . . . . .	0	5	6
Baldie, . . . . .	16	25	27
Blairstown, . . . . .	4	6	13
Franklin, . . . . .	11	6	9
Frelinghuysen, . . . . .	5	8	3
Greenwich, . . . . .	9	11	10
Hackettstown, . . . . .	25	38	38
Hardwick, . . . . .	0	2	2
Harmony, . . . . .	8	22	9
Hope, . . . . .	0	4	9
Independence, . . . . .	6	17	12
Knawton, . . . . .	15	13	8
Lopatcong, . . . . .	1	31	15
Mansfield, . . . . .	11	10	19
Oxford, . . . . .	12	55	32
Pahaugary, . . . . .	0	1	1
Phillipsburg, . . . . .	83	137	162
Pohatcong, . . . . .	9	25	15
Washington, . . . . .	43	88	58
	265	504	453

\* Marriage certificates received from the County Clerk, in which the place where the marriage was performed is not stated.

## SUMMARY.

	M.	B.	D.
Atlantic, . . . . .	341	818	595
Bergen, . . . . .	374	1,223	910
Burlington, . . . . .	323	795	762
Camden, . . . . .	1,062	1,811	1,762
Cape May, . . . . .	99	227	153
Cumberland, . . . . .	351	897	596
Essex, . . . . .	2,522	7,016	5,312
Gloucester, . . . . .	206	535	404
Hudson, . . . . .	2,788	7,912	6,789
Hunterdon, . . . . .	235	491	430
Mercer, . . . . .	734	1,051	1,451
Middlesex, . . . . .	449	1,307	1,011
Monmouth, . . . . .	597	1,031	958
Morris, . . . . .	363	912	801
Ocean, . . . . .	130	336	251
Passaic, . . . . .	1,241	2,901	2,347
Salem, . . . . .	185	314	410
Somerset, . . . . .	237	447	359
Sussex, . . . . .	156	222	249
Union, . . . . .	565	1,725	1,324
Warren, . . . . .	265	504	453
	*18,313	32,515	27,337

\*101 marriage certificate: were received from County Clerks, with place of marriage not stated.

## SUPPLEMENTARY BIRTHS.

REGISTERED 1897-98.

	1881-82	1892-93.	1893-94.	1896-97.	1894-95.	1895-96.	1891-92.
Hoboken, . . . . .	1	Bergen County, . . . . .	1	Atlantic County, . . . . .	1	Bergen County, . . . . .	5
Jersey City, . . . . .	3	Essex County, . . . . .	1	Burlington County, . . . . .	2	Hackensack, . . . . .	1
		Orange, . . . . .	17	Burlington City, . . . . .	1	Hudson County, . . . . .	2
		Passaic County, . . . . .	3	Bordertown, . . . . .	1	Monmouth County, . . . . .	82
Camden City, . . . . .	1	Jersey City, . . . . .	3	Burlington County, . . . . .	2	Newark, . . . . .	58
Newark, . . . . .	1	Union County, . . . . .	1	Bordertown, . . . . .	1	Hudson County, . . . . .	68
Hoboken, . . . . .	1	Essex County, . . . . .	1	Burlington City, . . . . .	1	Hoboken, . . . . .	1
Jersey City, . . . . .	5	Paterson, . . . . .	1	Camden County, . . . . .	3	Jersey City, . . . . .	5
Hunterdon County, . . . . .	1	Elizabeth, . . . . .	1	Camden City, . . . . .	20	Town of Union, . . . . .	348
				Cape May County, . . . . .	1	Hunterdon County, . . . . .	10
				Paterson, . . . . .	1	Gloucester County, . . . . .	84
				Elizabeth, . . . . .	1	Mercer County, . . . . .	34
						Trenton, . . . . .	19
						Middlesex County, . . . . .	10
						Ocean County, . . . . .	1
						Passaic County, . . . . .	13
						Perth Amboy, . . . . .	37
						Monmouth County, . . . . .	37
						Morris County, . . . . .	60
						Dover, . . . . .	31
						Ocean County, . . . . .	3
						Passaic County, . . . . .	15
						Paterson, . . . . .	4
						Burlington County, . . . . .	39
						Burlington City, . . . . .	18
						Salem City, . . . . .	10
						Somerset County, . . . . .	9
						Sussex County, . . . . .	32
						Union County, . . . . .	20
						Elizabeth, . . . . .	64
						Plainsfield, . . . . .	8
						Rahway, . . . . .	1
						Warren County, . . . . .	16
						Phillipsburg, . . . . .	7
						Total, . . . . .	2,172

SUPPLEMENTARY MARRIAGES.

REGISTERED 1897-98.

1878-79.	Gloucester County, . . . . .	1	Camden City, . . . . .	6	
Camden County, . . . . .	Bayonne, . . . . .	3	Cape May County, . . . . .	1	
	Jersey City, . . . . .	2	Cumberland County, . . . . .	8	
1884-85.	Mercer County, . . . . .	1	Hudson County, . . . . .	3	
Chambersburg, . . . . .	Long Branch, . . . . .	2	Montclair, . . . . .	3	
	Morris County, . . . . .	3	Newark, . . . . .	70	
1885-86.	Morristown, . . . . .	1	Orange, . . . . .	6	
Warren County, . . . . .	1894-95.		Gloucester County, . . . . .	5	
	Hoboken, . . . . .	1	Hudson County, . . . . .	7	
1896-97.	Jersey City, . . . . .	2	Harrison, . . . . .	16	
Elizabeth, . . . . .	1895-96.		Jersey City, . . . . .	48	
			Hunterdon County, . . . . .	2	
1888-89.	Atlantic City, . . . . .	1	Mercer County, . . . . .	2	
Newark, . . . . .	Camden City, . . . . .	1	Trenton, . . . . .	5	
	New Brunswick, . . . . .	1	Middlesex County, . . . . .	5	
	Essex County, . . . . .	2	New Brunswick, . . . . .	6	
	Newark, . . . . .	11	South Amboy, . . . . .	6	
1890-91.	2	Monmouth County, . . . . .	6		
Newark, . . . . .	Gloucester County, . . . . .	24	Morris County, . . . . .	7	
	Jersey City, . . . . .	1	Dover, . . . . .	3	
1891-92.	Mercer County, . . . . .	1	Passaic County, . . . . .	10	
Newark, . . . . .	Trenton, . . . . .	1	Passaic City, . . . . .	5	
Orange, . . . . .	Monmouth County, . . . . .	2	Paterson, . . . . .	21	
Bayonne, . . . . .	Long Branch, . . . . .	2	Salem County, . . . . .	1	
	Morris County, . . . . .	2	Somerset County, . . . . .	7	
	Somerset County, . . . . .	5	Sussex County, . . . . .	4	
1892-93.	Elizabeth, . . . . .	8	Union County, . . . . .	6	
Newark, . . . . .	1896-97.		Elizabeth, . . . . .	10	
Bayonne, . . . . .	Atlantic County, . . . . .	2	Plainfield, . . . . .	2	
	Bergen County, . . . . .	12	Warren County, . . . . .	1	
	Burlington County, . . . . .	4	Phillipsburg, . . . . .	12	
1893-94.	1	Camden County, . . . . .	4	Total, . . . . .	451
Essex County, . . . . .	1				
Newark, . . . . .	1				

Number of Marriage Licenses Issued by and Duplicate Certificates Received from County Clerks, during the Year Ending June 30th, 1898.

	Copies of Licenses	Duplicate Certificates	Place of Marriage not stated.
Atlantic, . . . . .	14	12	3
Bergen, . . . . .	3	3	2
Burlington, . . . . .	20	18	10
Camden, . . . . .	49	49	31
Cape May, . . . . .	2	2	1
Cumberland, . . . . .	4	4	0
Essex, . . . . .	55	59	13
Gloucester, . . . . .	8	11	4
Hudson, . . . . .	40	36	9
Hunterdon, . . . . .	0	0	0
Mercer, . . . . .	0	0	0
Middlesex, . . . . .	0	0	0
Monmouth, . . . . .	9	5	2
Morris, . . . . .	5	3	0
Ocean, . . . . .	12	12	6
Passaic, . . . . .	2	2	1
Salem, . . . . .	5	5	2
Somerset, . . . . .	2	1	1
Sussex, . . . . .	3	3	1
Union, . . . . .	13	13	7
Warren, . . . . .			
	278	262	101

Statement of Belated Returns of Marriages, Births and Deaths, for Year Ending June 30th, 1898.

MUNICIPALITY.	M. B. D.	MUNICIPALITY.	M. B. D.
<b>Atlantic County.</b>			
Atlantic City, . . . . .	3 1	Montclair, . . . . .	4
Egg Harbor Township, . . . . .	2 1	Newark, . . . . .	451 137
Galloway, . . . . .	2 2	Orange, . . . . .	1
Hammononton, . . . . .	2 2	South Orange Borough, . . . . .	4
Mullica, . . . . .	2	South Orange Township, . . . . .	1
		Verona, . . . . .	1
<b>Bergen County.</b>			
Franklin Township, . . . . .	1 1	Clayton Borough, . . . . .	1
Glen Rock Borough, . . . . .	2 2	Deptford Township, . . . . .	1 1 1
Hackensack, . . . . .	3 2 3	East Greenwich Township, . . . . .	1
Lodi Township, . . . . .	2 2	Elk Township, . . . . .	1
Midland Township, . . . . .	2	Franklin Township, . . . . .	1 1
Ridgefield Borough, . . . . .	1	Greenwich Township, . . . . .	4
Ridgewood Township, . . . . .	3	Harrison Township, . . . . .	1
Union Township, . . . . .	1 7	Logan Township, . . . . .	3 4
Wallington Borough, . . . . .	1	Washington Township, . . . . .	2
		West Deptford Township, . . . . .	1
		Woodbury, . . . . .	1
<b>Burlington County.</b>			
Beverly Township, . . . . .	1		
Burlington City, . . . . .	4		
Chester Township, . . . . .	1 2 1		
Cunnaminton Township, . . . . .	2 2		
Delran Township, . . . . .	2 1		
Eastampton Township, . . . . .	1		
Evesham Township, . . . . .	1		
Lumberton Township, . . . . .	1		
Mansfield Township, . . . . .	2		
Medford Township, . . . . .	1		
Mount Laurel Township, . . . . .	1 1		
Northampton Township, . . . . .	1 8		
Palmyra Township, . . . . .	3 1		
Pemberton Township, . . . . .	1 3		
Riverside Borough, . . . . .	4 2		
Springfield Township, . . . . .	2 2		
Waterford Township, . . . . .	2		
<b>Camden County.</b>			
Camden City, . . . . .	1		
Centre Township, . . . . .	1 1		
Delaware Township, . . . . .	1		
Gloucester City, . . . . .	9		
Merchantville, . . . . .	2		
Waterford Township, . . . . .	3		
<b>Cape May County.</b>			
Dennis Township, . . . . .	2		
Ocean City, . . . . .	2		
Upper Township, . . . . .	1		
<b>Cumberland County.</b>			
Deerfield Township, . . . . .	1 8		
Hopewell Township, . . . . .	1		
Vineland Borough, . . . . .	2		
Maurice River Township, . . . . .	1		
Millville, . . . . .	1		
Soc Creek Township, . . . . .	1		
<b>Essex County.</b>			
Belleville Township, . . . . .	1		
Bloomfield Borough, . . . . .	4		
Caldwell Borough, . . . . .	1 1		
Caldwell Township, . . . . .	1 2		
Clinton Township, . . . . .	1		
East Orange Township, . . . . .	1 7 1		
Franklin Township, . . . . .	3 2		
<b>Hudson County.</b>			
Harrison, . . . . .	1		
Hoboken, . . . . .	1		
Jersey City, . . . . .	104 206	12	
Keany, . . . . .	1		
West Hoboken, . . . . .	1		
Town of Union, . . . . .	1		
<b>Hunterdon County.</b>			
Bethlehem, . . . . .	1		
Clinton Township, . . . . .	1		
Delaware Township, . . . . .	5		
East Amwell Township, . . . . .	1		
Lambertville, . . . . .	1		
Lebanon Township, . . . . .	1		
Readington Township, . . . . .	10		
Union Township, . . . . .	6		
<b>Mercer County.</b>			
East Windsor, . . . . .	6		
Ewing Township, . . . . .	1		
Hamilton Township, . . . . .	1		
Hopewell Township, . . . . .	1		
Trenton, . . . . .	1		
West Windsor Township, . . . . .	1		
<b>Middlesex County.</b>			
East Brunswick Township, . . . . .	6		
New Brunswick, . . . . .	10		
North Brunswick Township, . . . . .	1		
Perth Amboy, . . . . .	6		
Piscataway Township, . . . . .	2		
Raritan Township, . . . . .	5		
Sayreville Township, . . . . .	1 1		
South Amboy, . . . . .	1		
<b>Monmouth County.</b>			
Allentown Borough, . . . . .	7		
Asbury Park, . . . . .	6		
Eatontown Township, . . . . .	2		
Freehold, . . . . .	6		
Howell, . . . . .	1		
Long Branch, . . . . .	22		
Manalapan Township, . . . . .	1		
Marlboro Township, . . . . .	1		
Matawan Township, . . . . .	3		



Statement of Belated Returns of Marriages, Births and Deaths—  
Continued.

MUNICIPALITY.	M.	B.	D.	MUNICIPALITY.	M.	B.	D.
<b>Monmouth County—Con.</b>							
Middletown Township, . . . . .	2			Oldmans Township, . . . . .	1		
Millstone Township, . . . . .	10	1		Pilesgrove Township, . . . . .		3	6
Neptune Township, . . . . .	12	37	32	Pennsgrove Borough, . . . . .	1		
Ocean Township, . . . . .	1	2	4	Quinton Township, . . . . .			1
Shrewsbury, . . . . .	6	13		Salem City, . . . . .			2
Spring Lake Beach Borough, . . . . .		1		<b>Somerset County.</b>			
Upper Freehold Township, . . . . .			2	Bernards Township, . . . . .			2
Wall Township, . . . . .	2		2	Bridgewater Township, . . . . .	1	17	3
<b>Morris County.</b>							
Boonton, . . . . .	1	1		Franklin Township, . . . . .			1
Mendham Township, . . . . .			1	North Plainfield Township, . . . . .			1
Montville Township, . . . . .		4	1	Warren Township, . . . . .	1		1
Morristown, . . . . .		1		<b>Sussex County.</b>			
Mount Olive Township, . . . . .		1		Branchville Borough, . . . . .		1	
Passaic Township, . . . . .		2		Frankford Township, . . . . .		7	7
Roxbury Township, . . . . .		1		Hampton Township, . . . . .		3	1
<b>Ocean County.</b>							
Point Pleasant, . . . . .	1			Hardystron Township, . . . . .			1
Jackson Township, . . . . .			2	Sparta Township, . . . . .			
<b>Passaic County.</b>							
Little Falls Township, . . . . .		1		Stillwater Township, . . . . .			1
Passaic City, . . . . .		2		<b>Union County.</b>			
Paterson City, . . . . .		3		Plainfield, . . . . .	2	5	
Wayne Township, . . . . .		1		Rahway, . . . . .		1	
West Milford Township, . . . . .			2	Summit Township, . . . . .			4
<b>Salem County.</b>							
Elmer Borough, . . . . .		2		Union Township, . . . . .		2	1
Elsinboro Township, . . . . .			2	<b>Warren County.</b>			
Mannington Township, . . . . .	1	1		Hackettstown Township, . . . . .		7	
				Independence Township, . . . . .		1	
				Knowlton Township, . . . . .			2
				Oxford Township, . . . . .		2	
				Pohatcong Township, . . . . .			1
				<b>Total,</b>	<b>164</b>	<b>979</b>	<b>350</b>

## SYNOPSIS OF VITAL AND MORTUARY STATISTICS.

The following table presents the comparative number of marriages, births and deaths, as follows:

Average for five years ending June 30th, 1883:

Marriages.....	8,539
Births.....	24,281
Deaths.....	21,981

Average for five years ending June 30th, 1888:

Marriages.....	10,067
Births.....	26,050
Deaths.....	23,952

Average for five years ending June 30th, 1893:

Marriages.....	12,089
Births.....	30,199
Deaths.....	29,439

Average for five years ending June 30th, 1898:

Marriage.....	16,374
Births.....	32,144
Deaths.....	29,712

The marriages occurring in Camden and other places, as a result of the Pennsylvania law, so far as known, are not counted in our reckoning, although necessarily recorded. The excess, as we have it, is as follows:

1886.....	2,527
1887.....	4,332
1888.....	4,557
1889.....	4,187
1890.....	3,411
1891.....	3,767
1892.....	4,073
1893.....	3,881
1894.....	3,282
1895.....	4,132
1896.....	4,090
1897.....	

## REPORT OF VITAL STATISTICS.

The following is the record for the year, from July 1st, 1888, to June 30th, 1889:

Marriages (including 4,072 non-residents).....	15,726
Marriages of non-residents.....	4,072
Births.....	29,099
Still-births.....	1,817
Deaths.....	26,543

The record from July 1st, 1889, to July 1st, 1890, is as follows:

Marriages (including 4,187 non-residents).....	15,564
Marriages of non-residents.....	4,187
Births.....	30,103
Still-births.....	1,799
Deaths.....	28,530

The population of the State in 1880 was 1,131,116; in 1885, 1,278,133, and in 1890, 1,444,933.

The following is the record for the year ending July 1st, 1891:

Marriages (including 3,411 non-residents).....	15,305
Marriages of non-residents.....	3,411
Births.....	28,882
Still-births.....	1,795
Deaths.....	28,840

The following is the record for the year ending July 1st, 1892:

Marriages (including 3,767 non-residents).....	16,082
Marriages of non-residents.....	3,767
Births.....	30,627
Still-births.....	1,826
Deaths.....	32,685

The following is the record for the year ending July 1st, 1893:

Marriages (including 4,073 non-residents).....	17,178
Marriages of non-residents.....	4,073
Births.....	32,285
Still-births.....	1,877
Deaths.....	30,596

The following is the record for the year ending July 1st, 1894:

Marriages (including 3,881 non-residents).....	16,245
Marriages of non-residents.....	3,881
Births.....	33,662
Still-births.....	1,996
Deaths.....	30,004

## REPORT OF VITAL STATISTICS.

The following is the record for the year ending July 1st, 1895:

Marriages (including 3,282 non-residents).....	15,873
Marriages of non-residents.....	3,282
Births.....	31,742
Still-births.....	1,900
Deaths.....	30,634

The following is the record for the year ending July 1st, 1896:

Marriage (including 4,132 non-residents).....	18,370
Marriages of non-residents.....	4,132
Births.....	31,207
Still-births.....	1,998
Deaths.....	30,767

The following is the record for the year ending July 1st, 1897:

Marriages (including 4,090 non-residents).....	18,171
Marriages of non-residents.....	4,090
Births.....	31,595
Still-births.....	2,031
Deaths.....	29,822

The following is the record for the year ending July 1st, 1898:

Marriages.....	13,213
Births.....	32,515
Still-births.....	2,060
Deaths.....	27,337

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, 1898.

Table with columns for Counties, Statistical Divisions, and various mortality categories (Under one month, One to one year, etc.). Rows list counties like Atlantic, Bergen, Burlington, Camden, etc.

NOTE.—Under the heading "Number of deaths from certain specified diseases," the first ten diseases are classified, including consumption (male and female). Of those of less importance, the number of deaths is given in small numbers, and the total for the State is given in large aggregates.

DEATHS AT ALL AGES. Total. Under the heading "Number of deaths from all causes," the first ten diseases are classified, including consumption (male and female). Of those of less importance, the number of deaths is given in small numbers, and the total for the State is given in large aggregates.

Table with columns for Cities Having Over 5,000 Population and various mortality categories (Under one month, One to one year, etc.). Rows list cities like Atlantic City, Camden, Newark, etc.

Return of Deaths from all Causes and Certain Specified Diseases, in Cities of Over 5,000. Inhabitants of the State of New Jersey, for the Year Ending June 30th, 1898.

Table with columns for Cities Having Over 5,000 Population and various mortality categories (Under one month, One to one year, etc.). Rows list cities like Atlantic City, Camden, Newark, etc.

REPORT OF VITAL STATISTICS.

Return of Deaths from all Causes and Certain Specified Diseases, in Cities of Over 5,000 Inhabitants of the State of New Jersey, for the Year Ending June 30th, 1898.—Continued.

Table with columns: CITIES HAVING OVER 5,000 POPULATION, Statistical Divisions, DEATHS AT ALL AGES, DEATHS FROM THE MORE COMMON CAUSES, and Violent deaths. Rows include Passaic County, Essex County, Salem County, Union County, Elizabeth, Newark, Warren County, Philadelphia, and Totals.

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, 1898.

MORTALITY TABLES.

Table with columns: ATLANTIC COUNTY, Statistical Divisions, DEATHS AT ALL AGES, DEATHS FROM THE MORE COMMON CAUSES, and Violent deaths. Rows include Atlantic City, Buena Vista, Egg Harbor City, Egg Harbor Township, Galloway, Hamilton, Marlton, and Weymouth.

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, 1898.

Table with columns for age groups (Under one month to Over sixty) and causes of death (Under one month to Violent deaths). Includes a sub-section for 'DEATHS FROM THE MORE COMMON CAUSES'.

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, 1898.

Table with columns for age groups (Under one month to Over sixty) and causes of death (Under one month to Violent deaths). Includes a sub-section for 'DEATHS FROM THE MORE COMMON CAUSES'.



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, 1898.

DEATHS AT ALL AGES.

CUMBERLAND 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.			Total, including un- defined.	Total defined.	Diarrhoeal diseases of children.	Consumption, M.	Consumption, F.	Acute and nervous diseases of children.	Diseases of heart and circulation.	Adult brain and spinal diseases.	Digestive and intes- tinal diseases.	Cancer.	Acute rheumatism.	Fueryal.
Bridgeton	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1
Dorchester	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1
Dorcas	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1
Fairfield	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1
Greenswich	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1
Hopewell	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1
Lanula	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1
Lawrence	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1
Middleboro	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1
Northampton	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1
Shrewsbury	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1
Totals	44	76	49	124	167	205	586	33,440	11.37	1	1	1	1	1	1	1	1	1	1	1

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, 1898.

DEATHS AT ALL AGES.

ESSEX 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.			Total, including un- defined.	Total defined.	Diarrhoeal diseases of children.	Consumption, M.	Consumption, F.	Acute and nervous diseases of children.	Diseases of heart and circulation.	Adult brain and spinal diseases.	Digestive and intes- tinal diseases.	Cancer.	Acute rheumatism.	Fueryal.	Violent deaths.								
Bridgeton	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1									
Dorchester	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1									
Dorcas	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1									
Fairfield	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1									
Greenswich	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1									
Hopewell	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1									
Lanula	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1									
Lawrence	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1									
Middleboro	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1									
Northampton	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1									
Shrewsbury	1	1	1	1	1	1	14,411	18.10	1	1	1	1	1	1	1	1	1	1	1	1									
Totals	417	841	576	828	971	1,167	14	6312	846,000	15.31	13	40	25	23	24	130	14	401	443	844	423	346	478	284	185	105	145	245	225







*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 30, 1898.*

REPORT OF VITAL STATISTICS.

MIDDLESEX 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.	Scarlet fever.	Small-pox.			Diphtheria and whooping cough.	Kyphosis.	Diphtheria 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.	Pneumonia.	Violent deaths.
Granbury.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
East Brunswick.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Monroe.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
North Brunswick.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Park Abbey.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Piscataway.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Raritan.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sayreville.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
South Amboy.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
South Brunswick.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Woodbridge.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals.....	50,719	118,841	84,271	272,106	101,76,008	13,411	16,639	105,477	389,120	56,951	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859

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, 1898.*

MONMOUTH 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.	Scarlet fever.	Small-pox.			Diphtheria and whooping cough.	Kyphosis.	Diphtheria 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.	Pneumonia.	Violent deaths.
Atlantic.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Berkeley.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Freehold.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Holmdel.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Howell.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Long Branch.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Manasquan.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mantoloking.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mantoloking.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Middletown.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Milford.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Neptune.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ocean.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Shrewsbury.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Upper Freehold.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Wall.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals.....	50,109	108,861	71,271	205,106	98,78,008	12,671	16,639	110,477	389,120	56,951	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	10,859	



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 30, 1898.

PASADIC 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.	Prior to twenty.	Twenty to sixty.	Over sixty.	Total, including un- defined.			Remittent fever, etc.	Enteric or typhoid fever.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Erysipelas.	Diphtheria diseases of children.	Consumption, M.	Consumption, F.	Active lung diseases.	Brain and nervous diseases of heart.	Diseases of heart and circulation.	Renal and cystic diseases.	Acute brain and spinal diseases.	Diphtheria and other diseases.	Cancer.	Acute rheumatism.	Puerperal.	Violent deaths.
Atlantic County.....	8	17	4	7	11	11	52	50	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Atlantic City.....	1	1																												

REPORT OF VITAL STATISTICS.

MORTALITY TABLES.

SOMERSET COUNTY. 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 undeclared.	Estimated population.	Death-rate per 1,000.	Remittent fever, etc.	Scarlet fever.	Small-pox.	Measles.	Whooping cough.	Diphtheria and croup.	Erysipelas.	Diarrhoeal 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.	Diphtheria and diphtheritic diseases.	Acute rheumatism.	Fuerepals.	Violent deaths.
Bridgewater.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Franklin.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Warren.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Totals.....</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>	<b>31</b>

SUSSEX COUNTY. 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 undeclared.	Estimated population.	Death-rate per 1,000.	Remittent fever, etc.	Scarlet fever.	Small-pox.	Measles.	Whooping cough.	Diphtheria and croup.	Erysipelas.	Diarrhoeal 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.	Diphtheria and diphtheritic diseases.	Acute rheumatism.	Fuerepals.	Violent deaths.
Andover.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Frankford.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hampton.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hardyston.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Lafayette.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Montague.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Newton.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sanford.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Shilwater.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Verona.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Walpack.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Totals.....</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</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, 1898.



REPORT OF VITAL STATISTICS.

MORTALITY TABLES.

COUNTIES OF STATE	DEATHS AT ALL AGES.										Estimated population.	Death rate per 1,000.
	Under one month.	Under one year.	One to five years.	Five to twenty years.	Twenty to sixty years.	Over sixty years.	Undeclared.	Total, including undeclared.	Male.	Female.		
Atlantic	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Bergen	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Camden	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Essex	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Gloucester	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Hudson	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Monmouth	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Morris	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Passaic	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Salem	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Union	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Warren	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Westchester	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
<b>Total.</b>	<b>11,931</b>	<b>70,111</b>	<b>40,288</b>	<b>10,821</b>	<b>119,311</b>	<b>198,561</b>	<b>8,755,111</b>	<b>164,871</b>	<b>110,311</b>	<b>883,476</b>	<b>12,383,261</b>	<b>13.3</b>

\* All added under one year. † Not classified for the year.

COUNTIES OF STATE	DEATHS FROM THE MORE COMMON CAUSES.										Estimated population.	Death rate per 1,000.
	Under one month.	Under one year.	One to five years.	Five to twenty years.	Twenty to sixty years.	Over sixty years.	Undeclared.	Total, including undeclared.	Male.	Female.		
Atlantic	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Bergen	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Camden	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Essex	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Gloucester	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Hudson	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Monmouth	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Morris	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Passaic	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Salem	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Union	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Warren	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Westchester	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
<b>Total.</b>	<b>11,931</b>	<b>70,111</b>	<b>40,288</b>	<b>10,821</b>	<b>119,311</b>	<b>198,561</b>	<b>8,755,111</b>	<b>164,871</b>	<b>110,311</b>	<b>883,476</b>	<b>12,383,261</b>	<b>13.3</b>

\* Average population, 24,328. † Average rate, 18.14.

Return of Deaths from all Causes and Certain Specified Diseases, in Atlantic County, for the Twenty Years Ending June 30th, 1898.

COUNTIES OF STATE	DEATHS FROM THE MORE COMMON CAUSES.										Estimated population.	Death rate per 1,000.
	Under one month.	Under one year.	One to five years.	Five to twenty years.	Twenty to sixty years.	Over sixty years.	Undeclared.	Total, including undeclared.	Male.	Female.		
Atlantic	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Bergen	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Camden	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Essex	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Gloucester	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Hudson	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Monmouth	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Morris	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Passaic	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Salem	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Union	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Warren	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
Westchester	1,080	7,011	4,028	1,082	11,931	19,856	875,511	16,487	11,031	883,476	1,238,326	13.3
<b>Total.</b>	<b>11,931</b>	<b>70,111</b>	<b>40,288</b>	<b>10,821</b>	<b>119,311</b>	<b>198,561</b>	<b>8,755,111</b>	<b>164,871</b>	<b>110,311</b>	<b>883,476</b>	<b>12,383,261</b>	<b>13.3</b>

\* Average population, 24,328. † Average rate, 18.14.

*Return of Deaths from all Causes and Certain Specified Diseases, in Bergen County, for the Twenty Years Ending June 30th, 1898.*

REPORT OF VITAL STATISTICS.

BERGEN COUNTY.	DEATHS AT ALL AGES.										DEATHS FROM THE MORE COMMON CAUSES.																				
	Under one month.	Under one year.	One to five years.	Five to ten years.	Ten to twenty years.	Over fifty years.	Undeclared.	Total, including undeclared.	Estimated population.	Death-rate per 1,000.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Dysentery and cholera.	Diarrhoeal diseases of children.	Consumption, M.	Consumption, F.	Acute lung diseases.	Brain and nervous diseases of children.	Brain and nervous diseases of adults.	Diseases of heart and circulation.	Diseases of heart and circulation.	Adult brain and spinal diseases.	Diphtheria and diphtheritic diseases.	Diarrhoeal diseases.	Intestinal diseases.	Cancer.	Acute rheumatism.	Puerperal.	Violent deaths.
1878	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1879	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1880	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1881	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1882	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1883	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1884	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1885	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1886	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1887	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1888	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1889	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1890	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
<b>Total.</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	

\* Average population, 47,776. † Average rate, 15.96.

MORTALITY TABLES.

*Return of Deaths from all Causes and Certain Specified Diseases, in Burlington County, for the Twenty Years Ending June 30th, 1898.*

BURLINGTON COUNTY.	DEATHS AT ALL AGES.										DEATHS FROM THE MORE COMMON CAUSES.																				
	Under one month.	Under one year.	One to five years.	Five to ten years.	Ten to twenty years.	Over fifty years.	Undeclared.	Total, including undeclared.	Estimated population.	Death-rate per 1,000.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Dysentery and cholera.	Diarrhoeal diseases of children.	Consumption, M.	Consumption, F.	Acute lung diseases.	Brain and nervous diseases of children.	Brain and nervous diseases of adults.	Diseases of heart and circulation.	Diseases of heart and circulation.	Adult brain and spinal diseases.	Diphtheria and diphtheritic diseases.	Diarrhoeal diseases.	Intestinal diseases.	Cancer.	Acute rheumatism.	Puerperal.	Violent deaths.
1878	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1879	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1880	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1881	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1882	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1883	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1884	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1885	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1886	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1887	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1888	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1889	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1890	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
<b>Total.</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	<b>389</b>	

\* Average population, 57,696. † Average rate, 15.96.



REPORT OF VITAL STATISTICS.

Return of Deaths from all Causes and Certain Specified Diseases in Camden County, for the 20 Years Ending June 30th, 1898.

CAMDEN COUNTY.	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.	Undefined.	Total, including undefined.	Acute lung diseases.	Consumption, M.	Consumption, F.	Diphtheria and erysipelas.	Whooping cough.	Measles.	Scarlet fever.	Small-pox.	Rheumatic fever, etc.	Brain and nervous diseases of children.	Brain and nervous diseases.	Acute rheumatism.	Pauperial.	Violent deaths.			
1878	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
1879	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
1880	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
1881	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
1882	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
1883	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
1884	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
1885	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
1886	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
1887	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
1888	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
1889	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
1890	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10			
<b>Total</b>	<b>718</b>	<b>8064</b>	<b>4550</b>	<b>5233</b>	<b>9516</b>	<b>10177</b>	<b>150</b>	<b>32100</b>	<b>148,704</b>	<b>146,468</b>	<b>101,400</b>	<b>94,307</b>	<b>1314</b>	<b>681</b>	<b>4484</b>	<b>370</b>	<b>1914</b>	<b>3485</b>	<b>8281</b>	<b>1180</b>	<b>1670</b>	<b>1637</b>	<b>640</b>	<b>751</b>	<b>804</b>	<b>1240</b>	<b>1240</b>

\* Average population, 61,883. † Average rate, 30.32.

MORTALITY TABLES.

Return of Deaths from all Causes and Certain Specified Diseases, in Cape May County, for the Twenty Years Ending June 30th, 1898.

CAPE MAY COUNTY.	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.	Undefined.	Total, including un-	Acute lung diseases.	Consumption, M.	Consumption, F.	Diphtheria and erysipelas.	Whooping cough.	Measles.	Scarlet fever.	Small-pox.	Rheumatic fever, etc.	Brain and nervous diseases of children.	Brain and nervous diseases.	Acute rheumatism.	Pauperial.	Violent deaths.	
1878	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
1879	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1880	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1881	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1882	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1883	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1884	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1885	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1886	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1887	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1888	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1889	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1890	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
<b>Total</b>	<b>86</b>	<b>616</b>	<b>311</b>	<b>328</b>	<b>901</b>	<b>1087</b>	<b>54</b>	<b>3280</b>	<b>332,100</b>	<b>1,500,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>

\* Average population, 11,108. † Average rate, 14.41.









REPORT OF VITAL STATISTICS.

Return of Deaths from all Causes and Certain Specified Diseases, in Morris County, for the Twenty Years Ending June 30th, 1898.

Table with columns for MORRIS COUNTY, DEATHS AT ALL AGES, DEATHS FROM THE MORE COMMON CAUSES, and VIOLENT DEATHS. Rows list years from 1879 to 1898, with a total row at the bottom.

\* Average population, 109,250. † Average rate, 15.95.

MORTALITY TABLES.

Return of Deaths from all Causes and Certain Specified Diseases, in Ocean County, for the Twenty Years Ending June 30, 1898.

Table with columns for OCEAN COUNTY, DEATHS AT ALL AGES, DEATHS FROM THE MORE COMMON CAUSES, and VIOLENT DEATHS. Rows list years from 1879 to 1898, with a total row at the bottom.

\* Average population, 16,022. † Average rate, 14.14.



REPORT OF VITAL STATISTICS.

SOMERSET COUNTY.	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.	Over sixty.			Undeclared.	Total, including undeclared.	Measles.	Whooping cough.	Diphtheria and erysipelas.	Cholera, M.	Consumption, F.	Acute lung diseases.	Brain and nervous diseases.	Diseases of heart and circulation.	Diseases of brain and spinal cord.	Adult brain and spinal diseases.	Diarrhoea and enteric diseases.	Cancer.	Perforated.	Violent deaths.
1878	65	40	50	107	2,601	40,866	15.82	115	52	38	33	53	108	103	250	184	426	540	361	36	181	147	30
1879	71	75	50	116	2,624	41,010	14.33	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1880	77	82	46	125	2,648	41,150	13.65	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1881	96	62	64	139	2,672	41,290	13.33	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1882	80	58	56	123	2,696	41,430	12.85	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1883	80	58	56	123	2,720	41,570	12.47	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1884	83	56	46	126	2,744	41,710	12.10	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1885	81	41	41	113	2,768	41,850	11.72	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1886	81	41	41	113	2,792	41,990	11.35	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1887	81	41	41	113	2,816	42,130	10.98	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1888	78	48	48	115	2,840	42,270	10.61	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1889	85	55	55	118	2,864	42,410	10.24	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1890	85	55	55	118	2,888	42,550	9.87	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1891	77	50	52	124	2,912	42,690	9.50	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1892	86	57	57	127	2,936	42,830	9.13	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1893	85	56	56	126	2,960	42,970	8.76	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1894	84	55	55	125	2,984	43,110	8.39	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1895	85	56	56	126	3,008	43,250	8.02	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1896	85	56	56	126	3,032	43,390	7.65	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1897	88	62	62	129	3,056	43,530	7.28	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1898	88	62	62	129	3,080	43,670	6.91	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
Total.	163	1,477	719	3,007	40,866	566,318	13.02	1,103	1,182	853	853	1,182	4,183	4,183	10,441	8,584	20,360	25,075	17,523	361	1,811	1,477	30

\* Average population, 38,310. † Average rate, 13.14.

MORTALITY TABLES.

Return of Deaths from all Causes and Certain Specified Diseases, in Sussex County for the Twenty Years Ending June 30th, 1898.

SUSSEX COUNTY.	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 twenty.	Twenty to sixty.	Over sixty.			Undeclared.	Total, including undeclared.	Measles.	Whooping cough.	Diphtheria and erysipelas.	Cholera, M.	Consumption, F.	Acute lung diseases.	Brain and nervous diseases.	Diseases of heart and circulation.	Diseases of brain and spinal cord.	Adult brain and spinal diseases.	Diarrhoea and enteric diseases.	Cancer.	Perforated.	Violent deaths.
1878	69	30	59	158	3,056	43,670	13.14	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1879	69	30	59	158	3,080	43,810	12.77	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1880	69	30	59	158	3,104	43,950	12.40	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1881	72	33	62	165	3,128	44,090	12.03	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1882	72	33	62	165	3,152	44,230	11.66	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1883	72	33	62	165	3,176	44,370	11.29	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1884	75	36	65	172	3,200	44,510	10.92	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1885	75	36	65	172	3,224	44,650	10.55	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1886	75	36	65	172	3,248	44,790	10.18	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1887	78	39	68	179	3,272	44,930	9.81	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1888	78	39	68	179	3,296	45,070	9.44	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1889	80	42	71	186	3,320	45,210	9.07	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1890	80	42	71	186	3,344	45,350	8.70	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1891	81	45	74	193	3,368	45,490	8.33	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1892	81	45	74	193	3,392	45,630	7.96	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1893	81	45	74	193	3,416	45,770	7.59	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1894	81	45	74	193	3,440	45,910	7.22	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1895	81	45	74	193	3,464	46,050	6.85	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1896	81	45	74	193	3,488	46,190	6.48	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1897	81	45	74	193	3,512	46,330	6.11	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
1898	81	45	74	193	3,536	46,470	5.74	111	51	39	34	51	102	102	248	181	434	540	361	36	181	147	30
Total.	77	384	477	901	614	3,311	60,876	14.57	1,106	1,106	853	853	4,183	4,183	10,441	8,584	20,360	25,075	17,523	361	1,811	1,477	30

\* Average population, 38,310. † Average rate, 13.63.



REPORT OF VITAL STATISTICS.

Union County.	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.	Measles.	Whooping cough.	Diphtheria and group.	Erysipelas.	Diarrhoeal 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.	Acute brain and spinal diseases.	Algebraic and tropical diseases.	Cancer.	Acute rheumatism.	Puerperal.	Violent deaths.		
1879	114	305	511	818	1,080	67,611	14.6	3,703	4	1,177	1,181	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1880	114	305	511	818	1,080	67,611	14.6	3,703	4	1,177	1,181	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1881	114	305	511	818	1,080	67,611	14.6	3,703	4	1,177	1,181	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1882	114	305	511	818	1,080	67,611	14.6	3,703	4	1,177	1,181	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1883	114	305	511	818	1,080	67,611	14.6	3,703	4	1,177	1,181	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1884	114	305	511	818	1,080	67,611	14.6	3,703	4	1,177	1,181	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1885	114	305	511	818	1,080	67,611	14.6	3,703	4	1,177	1,181	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1886	114	305	511	818	1,080	67,611	14.6	3,703	4	1,177	1,181	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1887	114	305	511	818	1,080	67,611	14.6	3,703	4	1,177	1,181	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1888	114	305	511	818	1,080	67,611	14.6	3,703	4	1,177	1,181	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	1,140	3,050	5,110	8,180	10,800	676,110	14.6	37,030	40	11,770	11,810	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	

Average population, 67,611. †Average rate, 14.6.

Return of Deaths from all Causes and Certain Specified Diseases, in Warren County, for the Twenty Years Ending June 30th, 1898.

Warren County.	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.	Measles.	Whooping cough.	Diphtheria and group.	Erysipelas.	Diarrhoeal 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.	Acute brain and spinal diseases.	Algebraic and tropical diseases.	Cancer.	Acute rheumatism.	Puerperal.	Violent deaths.			
1879	174	397	524	1,021	1,315	82,403	16.2	4,242	11	1,265	1,265	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1880	174	397	524	1,021	1,315	82,403	16.2	4,242	11	1,265	1,265	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1881	174	397	524	1,021	1,315	82,403	16.2	4,242	11	1,265	1,265	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1882	174	397	524	1,021	1,315	82,403	16.2	4,242	11	1,265	1,265	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1883	174	397	524	1,021	1,315	82,403	16.2	4,242	11	1,265	1,265	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1884	174	397	524	1,021	1,315	82,403	16.2	4,242	11	1,265	1,265	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1885	174	397	524	1,021	1,315	82,403	16.2	4,242	11	1,265	1,265	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1886	174	397	524	1,021	1,315	82,403	16.2	4,242	11	1,265	1,265	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1887	174	397	524	1,021	1,315	82,403	16.2	4,242	11	1,265	1,265	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1888	174	397	524	1,021	1,315	82,403	16.2	4,242	11	1,265	1,265	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	1,740	3,970	5,240	10,210	13,150	824,030	16.2	42,420	110	1,265	1,265	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10

Average population, 82,403. †Average rate, 16.2.

REPORT OF VITAL STATISTICS.

Return of Deaths from all Causes and Certain Specified Diseases, in the Cities of the State of New Jersey of Over 5,000 Inhabitants, for the Twenty Years Ending June 30th, 1898.

Table with columns for Deaths at All Ages (Under one month to Over sixty) and Deaths from More Common Causes (Diphtheria, Whooping cough, Small-pox, etc.). Includes population data and average rates.

Average population, 770,407. †Average rate, 36.34.

MORTALITY TABLES.

Return of Deaths from all Causes and Certain Specified Diseases, in Atlantic City, for the Twenty Years Ending June 30, 1898.

Mortality Tables for Atlantic City, showing deaths by age group (Under one month to Over sixty) and by cause (Diphtheria, Whooping cough, Small-pox, etc.). Includes population data and average rates.

Average population, 13,146. †Average rate, 39.99.

REPORT OF VITAL STATISTICS.

MORTALITY TABLES.

BAYONNE.	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.	Over sixty.			Undeclared.	Total, including undeclared.	Remittent fever, etc.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and group.	Typhoid.	Diarrhoeal 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.	Fœteral.	Violent deaths.	
1879	48	44	34	31	11	9	151	1,086	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1880	44	44	34	31	11	9	151	1,086	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1881	44	44	34	31	11	9	151	1,086	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1882	44	44	34	31	11	9	151	1,086	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1883	44	44	34	31	11	9	151	1,086	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1884	44	44	34	31	11	9	151	1,086	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1885	44	44	34	31	11	9	151	1,086	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1886	44	44	34	31	11	9	151	1,086	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1887	44	44	34	31	11	9	151	1,086	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1888	44	44	34	31	11	9	151	1,086	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Total.</b>	<b>308</b>	<b>1070</b>	<b>1281</b>	<b>530</b>	<b>3058</b>	<b>111</b>	<b>14,676</b>	<b>103,644</b>	<b>1470.56</b>	<b>62</b>	<b>133</b>	<b>88</b>	<b>48</b>	<b>68</b>	<b>408</b>	<b>321</b>	<b>307</b>	<b>306</b>	<b>1064</b>	<b>688</b>	<b>357</b>	<b>358</b>	<b>353</b>	<b>204</b>	<b>68</b>	<b>13</b>	<b>61</b>	<b>430</b>	<b>10</b>	

\* Average population, 14,424. † Average rate, 23.41.

Return of Deaths from all Causes and Certain Specified Diseases, in Bordentown, for the Twenty Years Ending June 30th, 1898.

BORDENTOWN.	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.	Over sixty.			Undeclared.	Total, including undeclared.	Remittent fever, etc.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and group.	Typhoid.	Diarrhoeal 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.	Fœteral.	Violent deaths.	
1879	14	14	10	10	4	5	48	1,113	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1880	14	14	10	10	4	5	48	1,113	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1881	14	14	10	10	4	5	48	1,113	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1882	14	14	10	10	4	5	48	1,113	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1883	14	14	10	10	4	5	48	1,113	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1884	14	14	10	10	4	5	48	1,113	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1885	14	14	10	10	4	5	48	1,113	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1886	14	14	10	10	4	5	48	1,113	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1887	14	14	10	10	4	5	48	1,113	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1888	14	14	10	10	4	5	48	1,113	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Total.</b>	<b>116</b>	<b>345</b>	<b>150</b>	<b>162</b>	<b>637</b>	<b>856</b>	<b>6,187</b>	<b>105,463</b>	<b>1360.07</b>	<b>14</b>	<b>46</b>	<b>30</b>	<b>6</b>	<b>15</b>	<b>88</b>	<b>131</b>	<b>160</b>	<b>144</b>	<b>176</b>	<b>103</b>	<b>153</b>	<b>153</b>	<b>806</b>	<b>189</b>	<b>15</b>	<b>7</b>	<b>56</b>	<b>76</b>	<b>3</b>	

\* Average population, 5,371. † Average rate, 17.44.

REPORT OF VITAL STATISTICS.

MORTALITY TABLES.

BURLINGTON.	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.	Over sixty.			Undefined.	Total, including unde- fined.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Krypsias.	Dartorial 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 in- flamatory diseases.	Cancer.	Acute rheumatism.	Faetoral.	Violent deaths.
1878	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1879	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1880	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1881	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1882	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1883	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1884	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1885	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1886	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1887	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1888	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1889	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1890	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Total.</b>	<b>81</b>	<b>83</b>	<b>81</b>	<b>23</b>	<b>83</b>	<b>26</b>	<b>848</b>	<b>7,257</b>	<b>18.60</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	

\*Average population, 10,917. †Average rate, 17.08.

Return of Deaths from all Causes and Certain Specified Diseases, in Burlington City, for the Twenty Years Ending June 30th, 1898.

BURLINGTON CITY.	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.	Over sixty.			Undefined.	Total, including unde- fined.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Krypsias.	Dartorial 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 in- flamatory diseases.	Cancer.	Acute rheumatism.	Faetoral.	Violent deaths.
1878	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1879	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1880	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1881	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1882	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1883	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1884	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1885	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1886	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1887	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1888	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1889	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1890	52	54	51	10	53	9	183	1,587	11.72	1	1	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Total.</b>	<b>81</b>	<b>83</b>	<b>81</b>	<b>23</b>	<b>83</b>	<b>26</b>	<b>848</b>	<b>7,257</b>	<b>18.60</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>13</b>	

\*Average population, 7,665. †Average rate, 19.00.

REPORT OF VITAL STATISTICS.

Return of Deaths from all Causes and Certain Specified Diseases, in Camden City, for the Twenty Years Ending June 30th, 1898.

CAMDEN CITY.	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.	Total, including un- defined.	Estimated population.	Death-rate per 1,000.	Remittent fever, &c.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Dyspepsia.	Diarrhœal diseases of children.	Consumption, M.	Consumption, F.	Acute lung diseases.	Brain and nervous diseases of children.	Diseases of heart and circulation.	Adult brain and spinal diseases.	Diphtheria and scarlet fever.	Cancer.	Acute rheumatism.	Puerperal.	Violent deaths.			
1879	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131		
1880	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131		
1881	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131		
1882	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131		
1883	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131		
1884	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131		
1885	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131		
1886	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131		
1887	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131		
1888	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131		
<b>Total.</b>	517	5,616	5,637	5,611	5,614	5,604	56,260	1,077,064	142,036	171	580	100	567	69	1,811	1,118	45	213	1,060	1,811	310	1,950	1,806	956	1,806	441	53	160	335	40

\* Average population, 53,663. † Average rate, 21.81.

MORTALITY TABLES.

Return of Deaths from all Causes and Certain Specified Diseases, in Chambersburg, for the Twenty Years Ending June 30th, 1898.

CHAMBERSBURG.	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.	Total, including un- defined.	Estimated population.	Death-rate per 1,000.	Remittent fever, &c.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Diarrhœal diseases of children.	Consumption, M.	Consumption, F.	Acute lung diseases.	Brain and nervous diseases of children.	Diseases of heart and circulation.	Adult brain and spinal diseases.	Diphtheria and scarlet fever.	Cancer.	Acute rheumatism.	Puerperal.	Violent deaths.					
1879	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1880	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1881	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1882	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1883	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1884	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1885	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1886	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1887	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
1888	12	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131	131
<b>Total.</b>	528	5,616	5,637	5,611	5,614	5,604	56,260	1,077,064	142,036	171	580	100	567	69	1,811	1,118	45	213	1,060	1,811	310	1,950	1,806	956	1,806	441	53	160	335	40	

\* Average population, 53,617. † Average rate, 20.81.

REPORT OF VITAL STATISTICS.

DOWN.	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.	Over sixty.			Undefined.	Total, including un- defined.	Violent deaths.	Puerperal.	Acute rheumatism.	Cancer.	Digestive and inter- stitial diseases.	Adult brain and spinal diseases.	Renal and cystic diseases.	Brain and nervous diseases of children.	Acute lung diseases.	Consumption, P.	Consumption, M.	Tubercular diseases of children.	Dyspepsias.	Whooping cough.	Diphtheria and croup.	Measles.	Scarlet fever.	Small-pox.	Rentism fever, Eratice or typhoid fever.	
1879	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1880	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1881	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1882	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1883	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1884	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1885	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1886	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1887	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1888	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1889	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1890	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1891	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1892	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1893	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1894	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1895	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1896	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1897	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1898	1	1	1	1	1	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.	17	26	14	18	69	36	170	10,070	144.86	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

\* Average population, 8,061. † Average rate, 17.47.

Return of Deaths from all Causes and Certain Specified Diseases, in East Orange, for the Twenty Years Ending June 30th, 1898.

EAST ORANGE.	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.	Over sixty.			Undefined.	Total, including un- defined.	Violent deaths.	Puerperal.	Acute rheumatism.	Cancer.	Digestive and inter- stitial diseases.	Adult brain and spinal diseases.	Renal and cystic diseases.	Brain and nervous diseases of children.	Acute lung diseases.	Consumption, P.	Consumption, M.	Tubercular diseases of children.	Dyspepsias.	Whooping cough.	Diphtheria and croup.	Measles.	Scarlet fever.	Small-pox.	Rentism fever, Eratice or typhoid fever.	
1879	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1880	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1881	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1882	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1883	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1884	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1885	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1886	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1887	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1888	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1889	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1890	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1891	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1892	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1893	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1894	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1895	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1896	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1897	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1898	1	1	1	1	1	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.	70	48	25	30	91	51	281,195	144.77	4	15	5	1	19	5	50	60	40	28	30	11	17	7	1	10	1	1	1	1	

\* Average population, 7,781. † Average rate, 14.92.







REPORT OF VITAL STATISTICS.

Return of Deaths from all Causes and Certain Specified Diseases, in Harrison, for the Twenty Years Ending June 30th, 1898.

Table with columns: DEATHS AT ALL AGES, DEATHS FROM THE MORE COMMON CAUSES, and various disease categories like Tuberculosis, Consumption, etc.

\*Average population, 6,078. †Average rate, 24.88.

MORTALITY TABLES.

Return of Deaths from all Causes and Certain Specified Diseases, in Hoboken, for the Twenty Years Ending June 30th, 1898.

Table with columns: DEATHS AT ALL AGES, DEATHS FROM THE MORE COMMON CAUSES, and various disease categories like Tuberculosis, Consumption, etc.

\*Average population, 41,273. †Average rate, 24.63.





Return of Deaths from all Causes and Certain Specified Diseases, in Morristown, for the Twenty Years Ending June 30th, 1898.

REPORT OF VITAL STATISTICS.

MORRISTOWN.	DEATHS AT ALL AGES.					DEATHS FROM THE MORE COMMON CAUSES.																										
	Under one month.	Under one year.	One to five.	Five to twenty.	Over fifty.	Undeath.	Total, including undeath.	Estimated population.	Death-rate per 1,000.	Remittent fever, &c.	Remittent or typhoid fever.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Krypsias.	Dartorial diseases of children.	Consumption, M.	Consumption, P.	Acute lung diseases.	Brain and nervous diseases of children.	Brain and nervous diseases.	Rheumatism and gout.	Acute rheumatism.	Acute rheumatism.	Cancer.	Acute rheumatism.	Perforal.	Violent deaths.		
1878	12	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
1879	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
1880	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1881	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1882	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1883	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1884	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1885	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1886	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1887	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1888	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1889	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1890	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1891	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1892	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1893	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1894	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1895	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1896	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1897	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1898	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Total.</b>	<b>54</b>	<b>500</b>	<b>850</b>	<b>266</b>	<b>107</b>	<b>11</b>	<b>1,748</b>	<b>198,544</b>	<b>8.8</b>	<b>47</b>	<b>1</b>	<b>43</b>	<b>29</b>	<b>143</b>	<b>9</b>	<b>340</b>	<b>213</b>	<b>307</b>	<b>170</b>	<b>248</b>	<b>148</b>	<b>378</b>	<b>187</b>	<b>189</b>	<b>167</b>	<b>161</b>	<b>61</b>	<b>37</b>	<b>38</b>	<b>7</b>		

\* Average population, 9,888. † Average rate, 16.47.

MORTALITY TABLES.

Return of Deaths from all Causes and Certain Specified Diseases, in Newark, for the Twenty Years Ending June 30th, 1898.

NEWARK.	DEATHS AT ALL AGES.					DEATHS FROM THE MORE COMMON CAUSES.																										
	Under one month.	Under one year.	One to five.	Five to twenty.	Over fifty.	Undeath.	Total, including undeath.	Estimated population.	Death-rate per 1,000.	Remittent fever, etc.	Enteric or typhoid fever.	Small-pox.	Measles.	Whooping cough.	Diphtheria and group.	Krypsias.	Dartorial diseases of children.	Consumption, M.	Consumption, P.	Acute lung diseases.	Brain and nervous diseases of children.	Brain and nervous diseases.	Rheumatism and gout.	Acute rheumatism.	Acute rheumatism.	Cancer.	Acute rheumatism.	Perforal.	Violent deaths.			
1878	12	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1879	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1880	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1881	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1882	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1883	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1884	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1885	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1886	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1887	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1888	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1889	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1890	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1891	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1892	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1893	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1894	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1895	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1896	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1897	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1898	13	15	22	22	22	1	114	8,000	14.4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Total.</b>	<b>160</b>	<b>1,000</b>	<b>1,800</b>	<b>710</b>	<b>270</b>	<b>13</b>	<b>3,110</b>	<b>345,000</b>	<b>9.0</b>	<b>107&lt;/</b>																						

Return of Deaths from all Causes and Certain Specified Diseases, in New Brunswick, for the Twenty Years Ending June 30th, 1898.

REPORT OF VITAL STATISTICS.

Table with columns for 'DEATHS AT ALL AGES' and 'DEATHS FROM THE MORE COMMON CAUSES'. Rows list years from 1879 to 1897, and categories like 'New Brunswick', 'Total including undeducted', 'Estimated population', and various diseases such as 'Scarlet fever', 'Whooping cough', and 'Consumption, M.'.

Total population, 18,468. † Average rate, 19.41.

MORTALITY TABLES.

Return of Deaths from all Causes and Certain Specified Diseases, in Orange, for the Twenty Years Ending June 30th, 1898.

Table with columns for 'DEATHS AT ALL AGES' and 'DEATHS FROM THE MORE COMMON CAUSES'. Rows list years from 1879 to 1897, and categories like 'Orange', 'Total including undeducted', 'Estimated population', and various diseases such as 'Scarlet fever', 'Whooping cough', and 'Consumption, M.'.

Total population, 7,689. † Average rate, 20.66.



*Return of Deaths from all Causes and Certain Specified Diseases, in Perth Amboy, for the Twenty Years Ending June 30th, 1898.*

REPORT OF VITAL STATISTICS.

PERTH AMBOY.	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.	Over sixty.			Undeclared.	Total, including undeclared.	Remittent fever, etc.	Bacterial or typhoid fever.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and group.	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.	Puerperal.	Violent deaths.		
1879	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
1880	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
1881	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
1882	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1883	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1884	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1885	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1886	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1887	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1888	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
<b>Totals</b>	<b>178</b>	<b>845</b>	<b>451</b>	<b>310</b>	<b>676</b>	<b>316</b>	<b>8</b>	<b>2,968</b>	<b>1,053.21</b>	<b>234.71</b>	<b>13</b>	<b>95</b>	<b>1</b>	<b>94</b>	<b>5</b>	<b>20</b>	<b>153</b>	<b>5</b>	<b>388</b>	<b>145</b>	<b>181</b>	<b>305</b>	<b>1,068</b>	<b>176</b>	<b>26</b>	<b>307</b>	<b>140</b>	<b>59</b>	<b>11</b>	<b>88</b>	<b>116</b>	<b>9</b>

\* Average population, 10,511. † Average rate, 50.46.

MORTALITY TABLES.

*Return of Deaths from all Causes and Certain Specified Diseases, in Phillipsburg, for the Twenty Years Ending June 30th, 1898.*

PHILLIPSBURG.	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.	Over sixty.			Undeclared.	Total, including undeclared.	Remittent fever, etc.	Bacterial or typhoid fever.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and group.	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.	Puerperal.	Violent deaths.			
1879	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
1880	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1881	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1882	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1883	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1884	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1885	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1886	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1887	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1888	1	1	1	1	1	1,000	1.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Totals</b>	<b>85</b>	<b>671</b>	<b>329</b>	<b>276</b>	<b>735</b>	<b>553</b>	<b>7</b>	<b>2,752</b>	<b>1,053.21</b>	<b>134.71</b>	<b>13</b>	<b>95</b>	<b>1</b>	<b>94</b>	<b>5</b>	<b>20</b>	<b>153</b>	<b>5</b>	<b>388</b>	<b>145</b>	<b>181</b>	<b>305</b>	<b>1,068</b>	<b>176</b>	<b>26</b>	<b>307</b>	<b>140</b>	<b>59</b>	<b>11</b>	<b>88</b>	<b>116</b>	<b>9</b>	

\* Average population, 5,296. † Average rate, 16.75.

REPORT OF VITAL STATISTICS.

Return of Deaths from all Causes and Certain Specified Diseases, in Plainfield, for the Twenty Years Ending June 30th, 1898.

PLAINFIELD.	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.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Erysipelas.	Dysenteric 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.	Poisonal deaths.				
1879.	10	54	52	115	131	30	16	431	8,155	12.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1880.	12	54	55	117	136	35	16	461	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1881.	12	55	56	118	137	36	16	470	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1882.	12	56	57	119	138	37	16	479	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1883.	12	57	58	120	139	38	16	488	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1884.	12	58	59	121	140	39	16	497	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1885.	12	59	60	122	141	40	16	506	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1886.	12	60	61	123	142	41	16	515	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1887.	12	61	62	124	143	42	16	524	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1888.	12	62	63	125	144	43	16	533	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1889.	12	63	64	126	145	44	16	542	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1890.	12	64	65	127	146	45	16	551	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1891.	12	65	66	128	147	46	16	560	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1892.	12	66	67	129	148	47	16	569	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1893.	12	67	68	130	149	48	16	578	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1894.	12	68	69	131	150	49	16	587	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1895.	12	69	70	132	151	50	16	596	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1896.	12	70	71	133	152	51	16	605	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1897.	12	71	72	134	153	52	16	614	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1898.	12	72	73	135	154	53	16	623	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
TOTAL.	50	561	587	1,101	1,191	518	10	3,678	231,381	154.352	135	59	2	54	24	35	163	10	444	259	199	484	274	365	141	321	174	105	16	44	136	14

\* Average population, 10,668. † Average rate, 17.14.

MORTALITY TABLES.

Return of Deaths from all Causes and Certain Specified Diseases, in Rahway, for the Twenty Years Ending June 30th, 1898.

RAHWAY.	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.	Small-pox.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Erysipelas.	Dysenteric 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.	Poisonal deaths.			
1879.	10	54	52	115	131	30	16	431	8,155	12.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1880.	12	54	55	117	136	35	16	461	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1881.	12	55	56	118	137	36	16	470	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1882.	12	56	57	119	138	37	16	479	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1883.	12	57	58	120	139	38	16	488	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1884.	12	58	59	121	140	39	16	497	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1885.	12	59	60	122	141	40	16	506	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1886.	12	60	61	123	142	41	16	515	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1887.	12	61	62	124	143	42	16	524	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1888.	12	62	63	125	144	43	16	533	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1889.	12	63	64	126	145	44	16	542	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1890.	12	64	65	127	146	45	16	551	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1891.	12	65	66	128	147	46	16	560	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1892.	12	66	67	129	148	47	16	569	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1893.	12	67	68	130	149	48	16	578	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1894.	12	68	69	131	150	49	16	587	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1895.	12	69	70	132	151	50	16	596	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1896.	12	70	71	133	152	51	16	605	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1897.	12	71	72	134	153	52	16	614	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1898.	12	72	73	135	154	53	16	623	8,155	18.00	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
TOTAL.	44	464	544	916	967	446	20	2,669	149,659	179.514	30	55	3	51	27	37	111	204	340	169	484	274	365	141	321	174	105	16	44	136	14

\* Average population, 7,127. † Average rate, 18.85.





REPORT OF VITAL STATISTICS.

Return of Deaths from all Causes and Certain Specified Diseases, in Town of Union, for the Twenty Years Ending June 30th, 1898.

Table with columns: TOWN OF UNION, DEATHS AT ALL AGES, DEATHS FROM THE MORE COMMON CAUSES, and various disease categories like Measles, Whooping cough, Diphtheria and croup, etc.

Average population, 4,378. † Average rate, 30.88.

MORTALITY TABLES.

Return of Deaths from all Causes and Certain Specified Diseases, in Trenton, for the Twenty Years Ending June 30th, 1898.

Table with columns: TRENTON, DEATHS AT ALL AGES, DEATHS FROM THE MORE COMMON CAUSES, and various disease categories like Measles, Whooping cough, Diphtheria and croup, etc.

Average population, 47,940. † Average rate, 18.81.

REPORT OF VITAL STATISTICS.

Return of Deaths from all Causes and Certain Specified Diseases, in West Hoboken, for the Twenty Years Ending June 30th, 1898.

DEATHS AT ALL AGES.

West Hoboken.	DEATHS AT ALL AGES.							Total including undened.	Estimated population.	Death-rate per 1,000.
	Under one month.	Under one year.	One to five.	Five to twenty.	Twenty to sixty.	Over sixty.	Undened.			
1879	7	22	14	35	15	36	99	4,913	18.13	
1880	10	27	14	36	14	36	97	5,411	18.17	
1881	10	27	15	35	15	35	100	5,411	18.30	
1882	10	27	15	35	15	35	100	5,411	18.30	
1883	10	27	15	35	15	35	100	5,411	18.30	
1884	10	27	15	35	15	35	100	5,411	18.30	
1885	10	27	15	35	15	35	100	5,411	18.30	
1886	10	27	15	35	15	35	100	5,411	18.30	
1887	10	27	15	35	15	35	100	5,411	18.30	
1888	10	27	15	35	15	35	100	5,411	18.30	
1889	10	27	15	35	15	35	100	5,411	18.30	
1890	10	27	15	35	15	35	100	5,411	18.30	
1891	10	27	15	35	15	35	100	5,411	18.30	
1892	10	27	15	35	15	35	100	5,411	18.30	
1893	10	27	15	35	15	35	100	5,411	18.30	
1894	10	27	15	35	15	35	100	5,411	18.30	
1895	10	27	15	35	15	35	100	5,411	18.30	
1896	10	27	15	35	15	35	100	5,411	18.30	
1897	10	27	15	35	15	35	100	5,411	18.30	
1898	10	27	15	35	15	35	100	5,411	18.30	
<b>Total</b>	<b>76</b>	<b>268</b>	<b>87</b>	<b>277</b>	<b>41</b>	<b>293</b>	<b>293</b>	<b>15,101</b>	<b>183.66</b>	

\* Average population, 5,297. † Average rate, 17.83.

DEATHS FROM THE MORE COMMON CAUSES.

West Hoboken.	DEATHS FROM THE MORE COMMON CAUSES.																																				
	Under one month.	Under one year.	One to five.	Five to twenty.	Twenty to sixty.	Over sixty.	Undened.	Total including undened.	Estimated population.	Death-rate per 1,000.	Remittent fever, etc.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria and croup.	Erysipelas.	Diarrheal diseases of children.	Consumption, M.	Consumption, P.	Acute lung diseases.	Brain and nervous diseases of children.	Brain and nervous diseases of adults.	Renal and cystic diseases.	Heart and circulation.	Spinal diseases.	Alcohol and intemperate habits.	Digestive and intestinal diseases.	Cancer.	Acute rheumatism.	Fever.	Violent deaths.						
1879	7	22	14	35	15	36	99	99	4,913	18.13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
1880	10	27	14	36	14	36	97	97	5,411	18.17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
1881	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
1882	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
1883	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
1884	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
1885	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
1886	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1887	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1888	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1889	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1890	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1891	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
1892	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1893	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1894	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1895	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1896	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1897	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1898	10	27	15	35	15	35	100	100	5,411	18.30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

DIAGRAMS SHOWING DEATHS.

Diagram Showing Deaths in New Jersey from Remittent Fever for Twenty Years, 1879-1898.

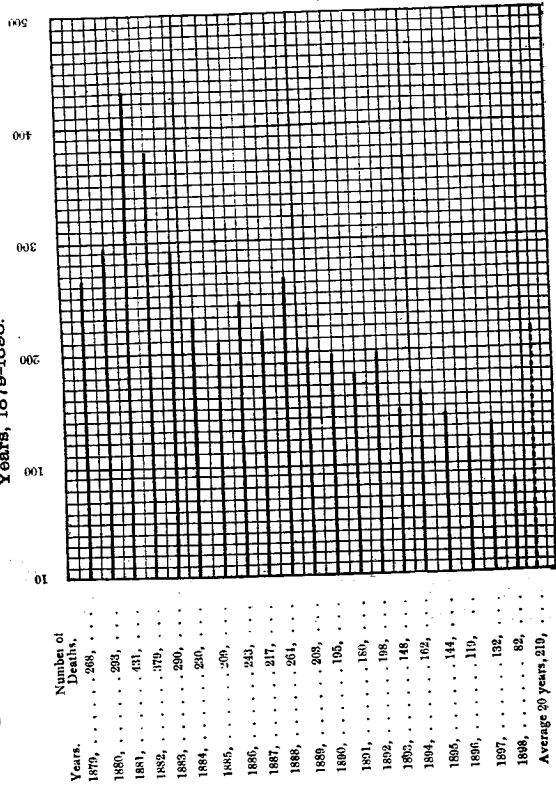


Diagram Showing Deaths in New Jersey from Typhoid Fever for Twenty Years 1879-1898.

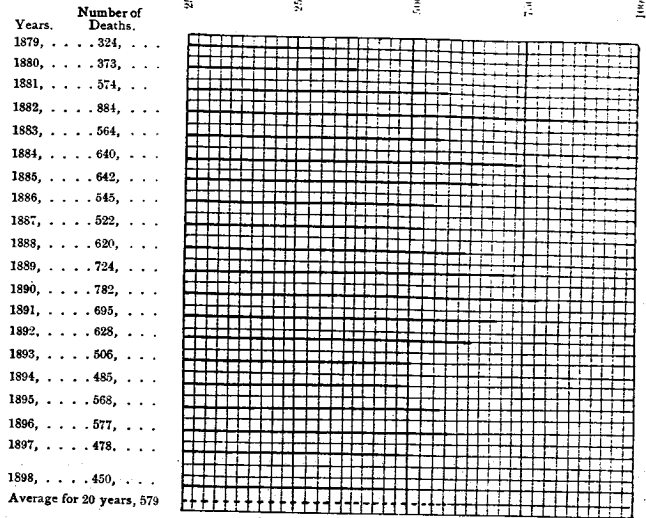


Diagram Showing Deaths in New Jersey from Small-pox for Twenty Years, 1879-1898.

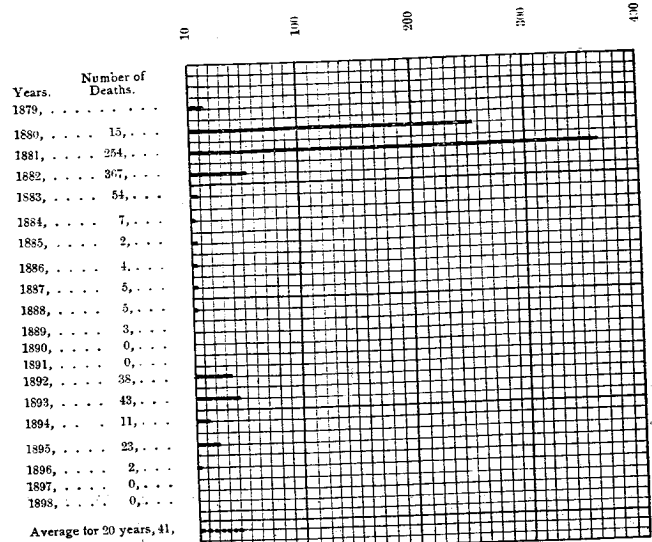


Diagram Showing Deaths in New Jersey from Scarlet Fever for Twenty Years, 1879-1898.

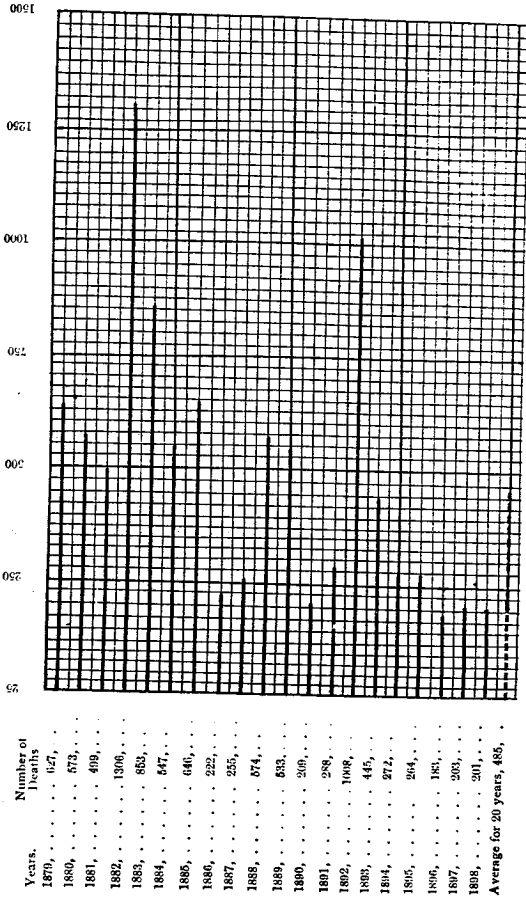


Diagram Showing Deaths in New Jersey from Measles for Twenty Years, 1879-1898.

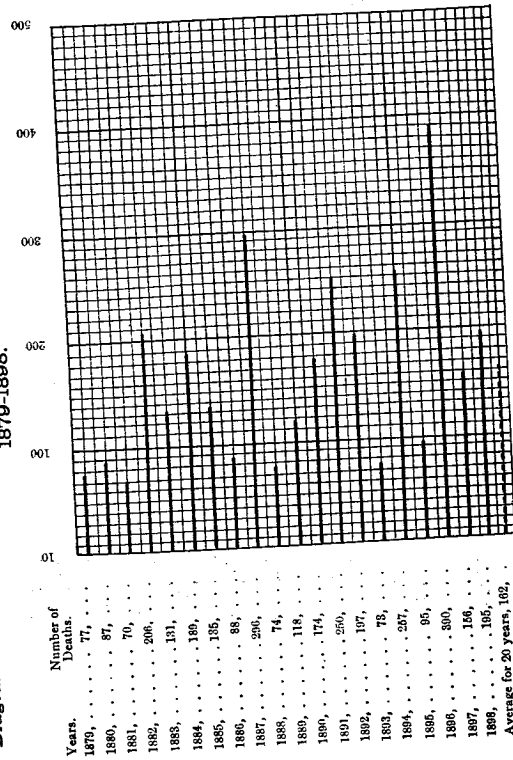


Diagram Showing Deaths in New Jersey from Whooping Cough for Twenty Years, 1879-1898.

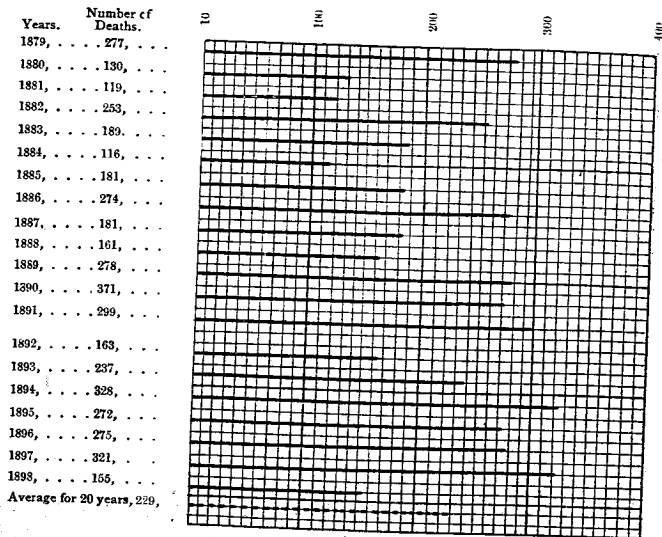


Diagram Showing Deaths in New Jersey from Diphtheria for Twenty Years, 1879-1898.

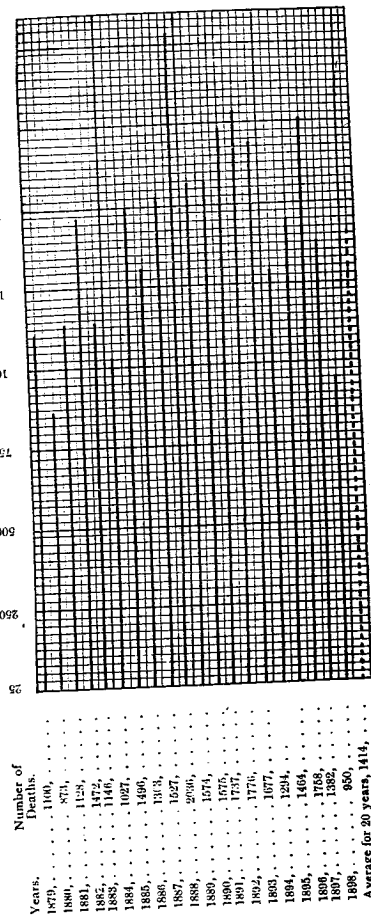


Diagram Showing Deaths in New Jersey from Erysipelas for Twenty Years, 1879-1898.

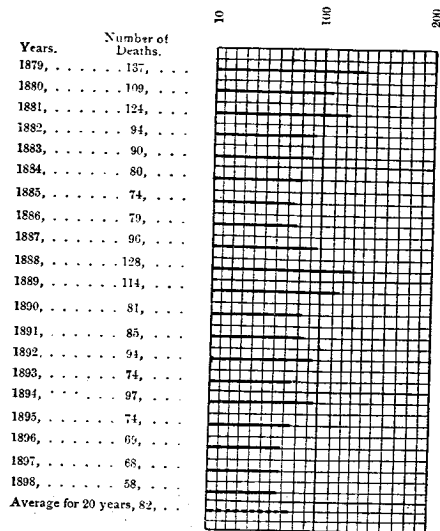


Diagram Showing Deaths in New Jersey from Diarrhoeal Diseases of Children for Twenty Years, 1879-1898.

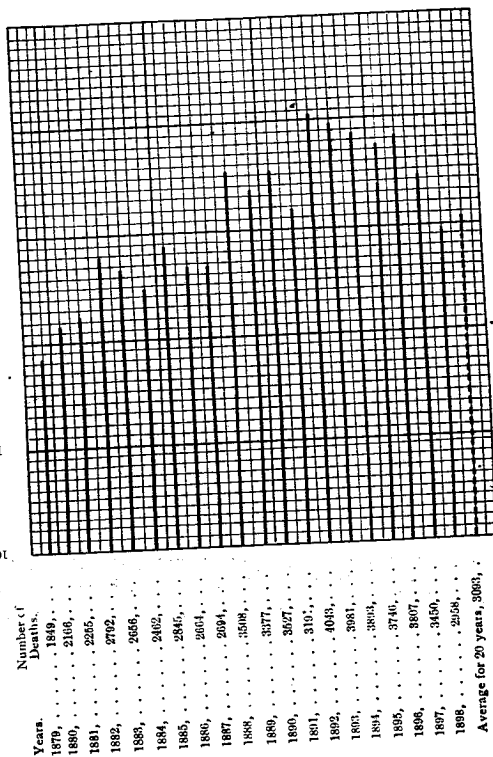
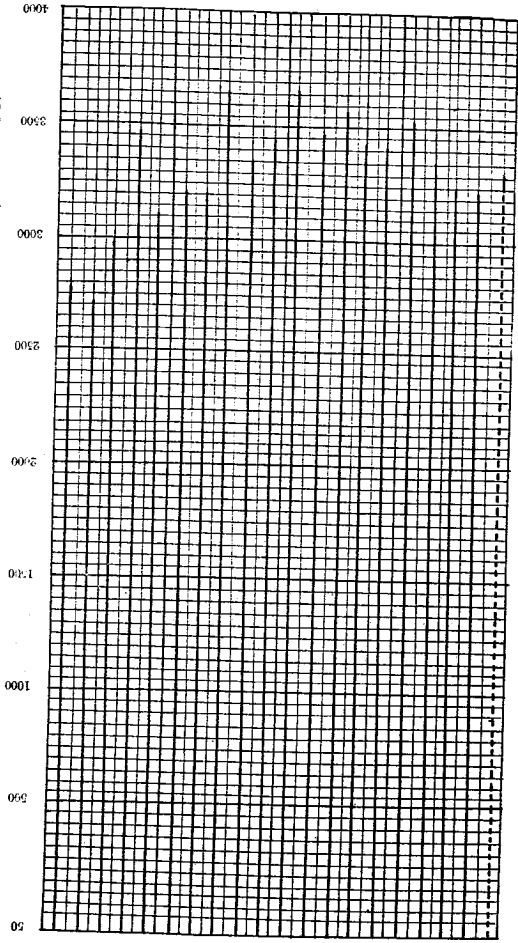
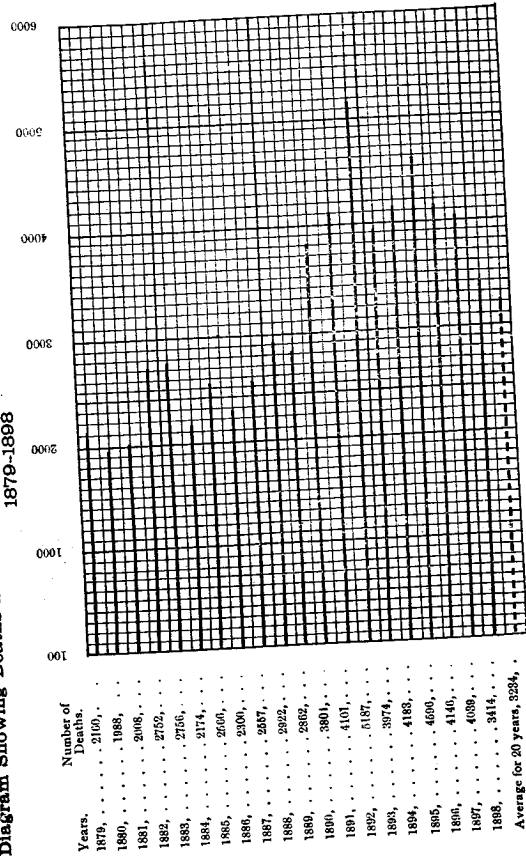


Diagram Showing Deaths in New Jersey from Consumption for Twenty Years, 1879-1898.



Years.	Number of Deaths.
1879	2788
1880	2714
1881	2989
1882	3175
1883	3121
1884	3216
1885	3205
1887	3563
1888	3338
1889	3449
1890	3669
1891	3450
1892	3575
1893	3429
1894	3433
1895	3519
1896	3356
1897	3271
1898	3225
Ave. for 20 yrs.	3310

Diagram Showing Deaths in New Jersey from Acute Lung Diseases for Twenty Years, 1879-1898



Years.	Number of Deaths.
1879	2109
1880	1988
1881	2008
1882	2752
1883	2756
1884	2174
1885	2660
1886	2500
1887	2587
1888	2922
1889	2882
1890	3801
1891	4101
1892	5187
1893	3374
1894	4183
1895	4603
1896	4140
1897	4089
1898	3414
Average for 20 years	3234



Diagram Showing Deaths in New Jersey from Brain and Nervous Diseases of Children for 20 Years, 1879-1898.

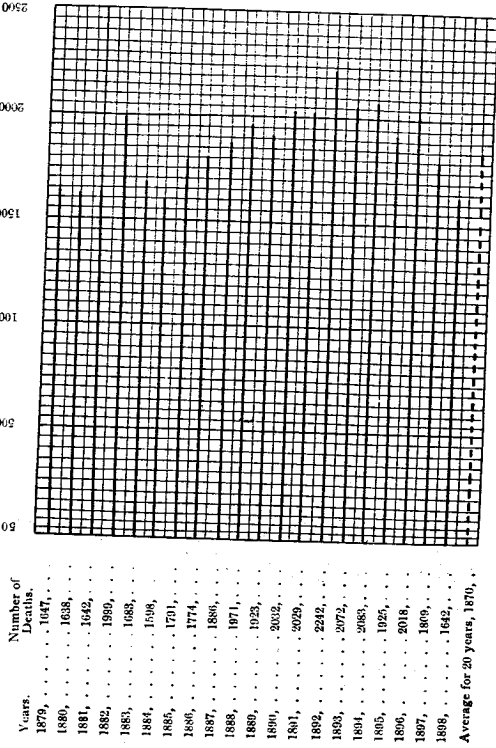


Diagram Showing Deaths in New Jersey from Diseases of Heart and Circulation for Twenty Years, 1879-1898.

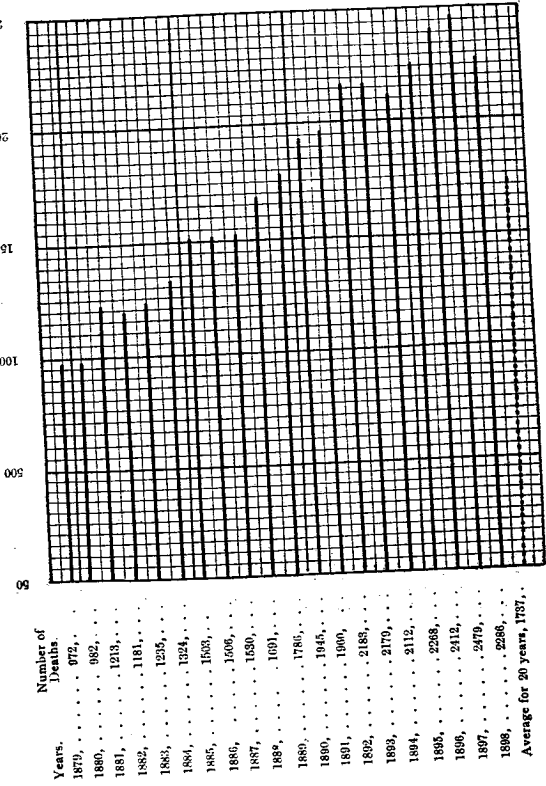


Diagram Showing Deaths in New Jersey from Renal and Cystic Diseases for Twenty Years, 1879-1898

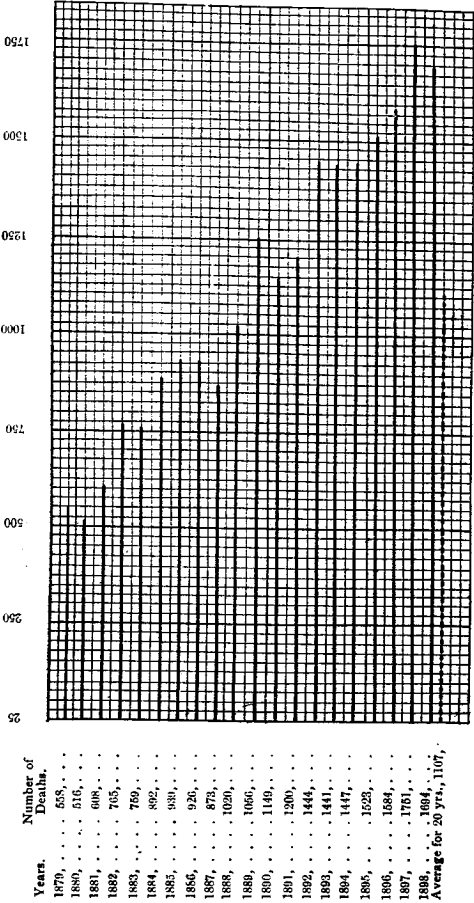


Diagram Showing Deaths in New Jersey from Adult Brain and Spinal Diseases for Twenty Years, 1879-1898.

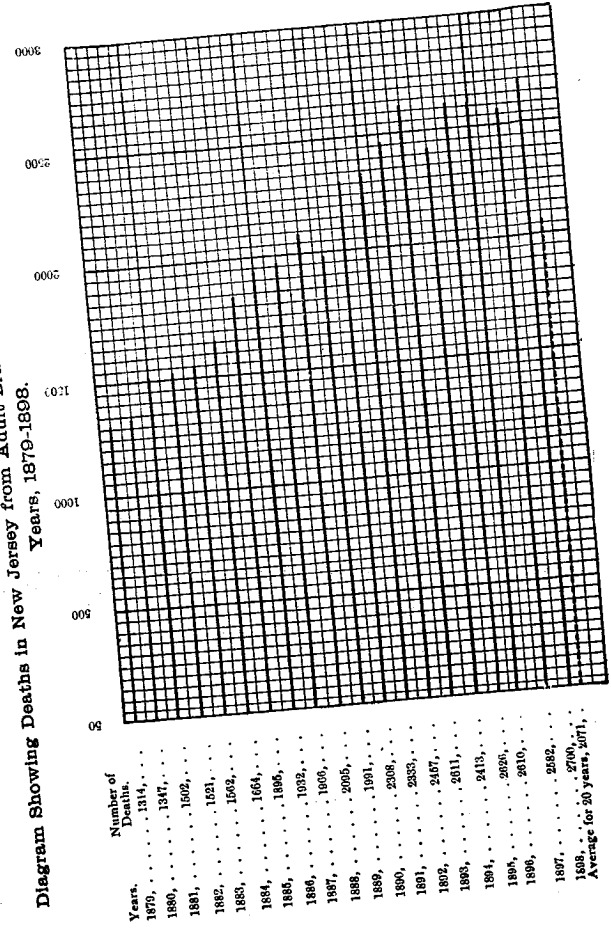


Diagram Showing Deaths in New Jersey from Digestive and Intestinal Diseases for Twenty Years, 1879-1898.

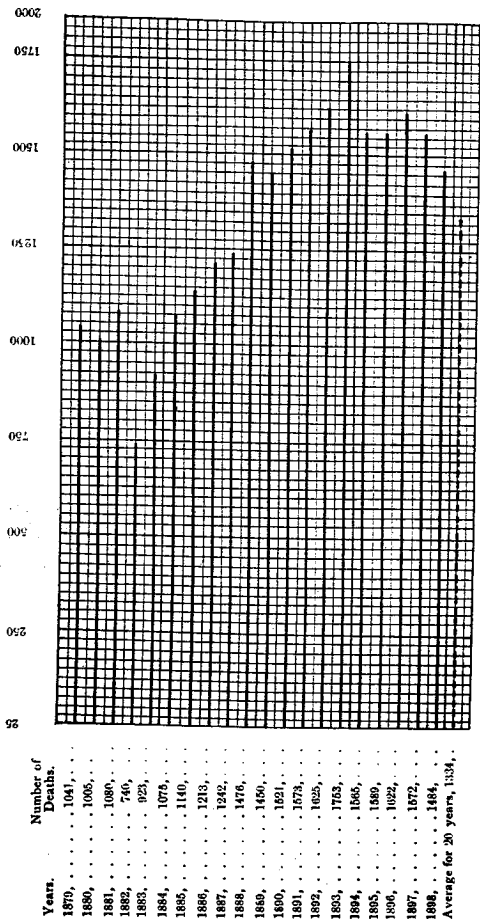


Diagram Showing Deaths in New Jersey from Cancer for Twenty Years, 1879-1898.

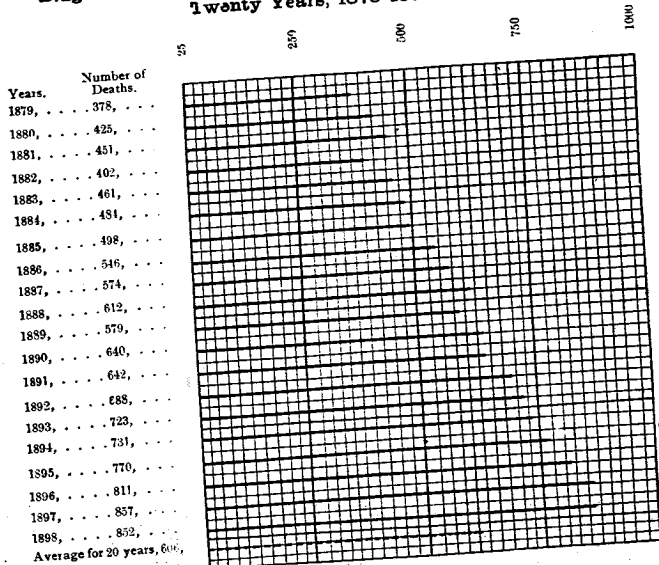


Diagram Showing Deaths in New Jersey from Acute Rheumatism  
for Twenty Years, 1879-1898.

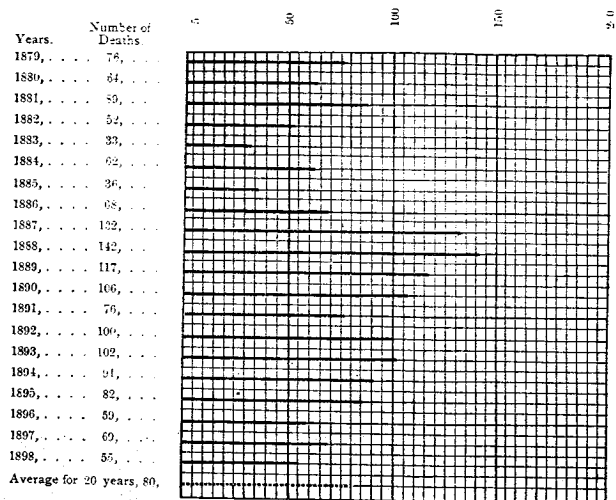


Diagram Showing Deaths in New Jersey from Puerperal Diseases  
for Twenty Years, 1879-1898.

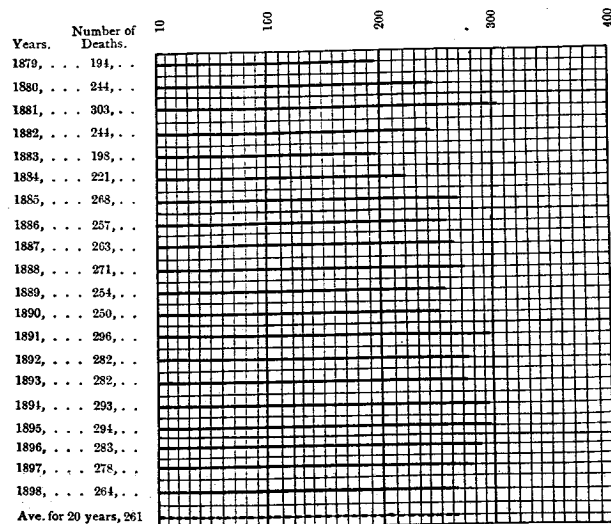
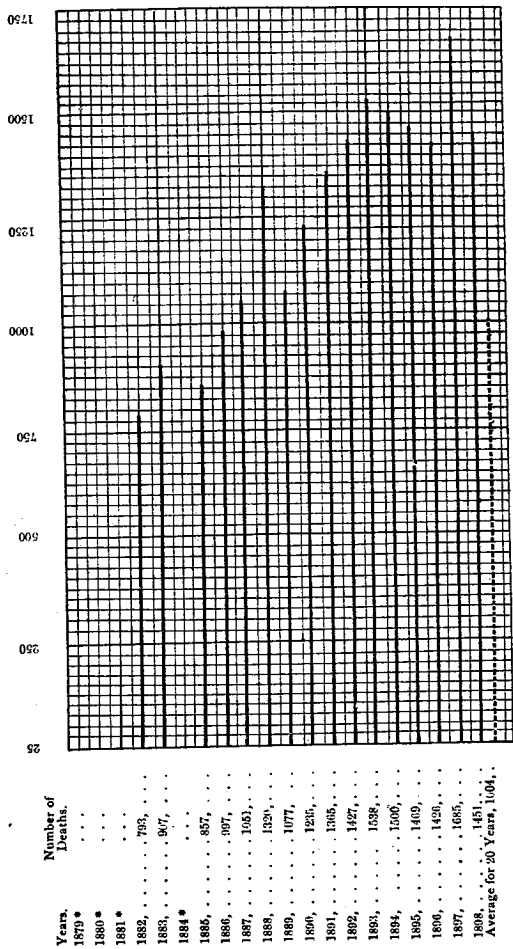


Diagram Showing Deaths from Violence in New Jersey for Twenty Years, 1879-1898.



\* Unclassified for these years.

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