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HEALTH DEPARTMENT

Report for the Year ending December 31, 1891.

HEALTH DEPARTMENT,
NEW YORK, April 18, 1892.

Hon. HUGH J. GRANT, *Mayor:*

SIR—In accordance with the provisions of section 533 of the New York Consolidation Act, the Commissioners of Health have the honor to present this their report of the operations of the Board of Health of the Health Department of the City of New York, for the year ending December 31, 1891. Under the provisions of the Consolidation Act, the organization of the Health Department is divided into two bureaus, namely, the Sanitary Bureau and the Bureau of Records.

THE SANITARY BUREAU.

The Sanitary Bureau is under the charge of the Sanitary Superintendent, who, as its chief executive officer, is charged with the general supervision of the sanitary work of the Department, the enforcement of the provisions of the several sections of the Sanitary Code, and the laws and ordinances relating to tenements and lodging-houses, and generally of the laws of the State relating to the Health Department of the City of New York. This bureau is divided into four divisions, as follows:

1st. The Division of Contagious Diseases, and Special Medical Sanitary Inspection.
2d. The Division of General and Special Sanitary Inspection.
3d. The Division of Plumbing and Ventilation.
4th. The Division of Offensive Trades and Food Inspections.

THE BUREAU OF RECORDS.

This Bureau is in charge of the Register of Records, and is entrusted with the registration of births, marriages and deaths, the granting of burial permits, the study of topographical causes of disease and circumstances of unusual deaths, and incidentally the classification and filing of vital statistics.

HOSPITALS.

There are also three hospitals under the charge of the Board of Health, namely, the Willard Parker Hospital, the Reception Hospital and the Riverside Hospital (North Brother Island), which are devoted to the reception and care of those suffering from contagious diseases.

PUBLIC HEALTH.

The record of vital statistics, as found in the report of the Register of Records for the year 1891, shows that, with an estimated population of 1,680,796, there were 43,659 deaths, as against 40,103 deaths in 1890 with an estimated population of 1,631,232, showing a death-rate of 25.97 per 1,000 in 1891, as against 24.58 per 1,000 in 1890. This increase in a great measure was probably due to the influence of influenza or the so-called la grippe. In the latter part of March, 1891, la grippe commenced to appear, and culminated in an epidemic much more fatal than that of 1890, and as its result undoubtedly caused an increased number of deaths from other diseases by depressing the vital energies of those who but for these complications might have otherwise recovered. Although we may not assume that the increase in the total number of deaths was due directly to this cause, we feel assured that to its influence is chargeable a large proportion of this increase. It is proper to add that a considerable portion of this increase was caused by the epidemic of scarlet fever.

From the tabulated statements of the Register of Records, it will be seen that the deaths from the following diseases show a marked increase over those of previous years, which, as before stated, can only be attributable to the subtle effects of the epidemic influence of la grippe. For instance, the increase over the previous year is shown as follows:

Miasmatic	1,336	Diarrhœal	241
Developmental	112	Nervous	132
Circulatory	315	Respiratory	930
Digestive	192	Heart disease	307
Pneumonia	829	Chronic bronchitis	145

Scarlet fever shows an increase over 1890 of 812, and diphtheria of 92, while influenza is directly charged with an increase of 540 deaths over those of 1890. By the table of comparative mortality by age and sex, of the total increase of 3,556 deaths for the year, more than one-half (1,919) were caused by the increased mortality among children. The increased prevalence of contagious diseases accounts to a considerable extent for this, but a new feature in this increase in the total mortality appears in the conduct of the epidemic influenza among children, who in the previous epidemic of this disease suffered but very little. By the following table it will be noticed that children and youth who passed almost unaffected through the epidemic of 1890, succumbed largely to it in the present year, as well as those of advanced age, while those in the prime of life, who suffered largely in 1890, showed no increased susceptibility to the disease in 1891. This is well illustrated in the following table (prepared by the Register of Records) of comparative mortality by age and sex for the years 1889, 1890 and 1891:

	Under 5 Years.		5 and Under 25 Years.		25 and Under 45 Years.		45 and Under 65 Years.		65 Years and Over.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1889	9,165	7,987	2,135	2,155	4,555	3,371	3,692	2,879	1,742	1,998
1890	8,659	7,646	2,015	1,954	4,947	3,699	3,935	3,197	1,879	2,172
1891	9,732	8,492	2,309	2,288	4,977	3,799	4,014	3,427	2,072	2,549

From this comparison the Register arrives at the conclusion that while the epidemic of 1890 was fatal to those between the ages of 25 and 65, those under 25 were apparently but little affected; while in 1891 the mortality of persons between 25 and 65 varied little from that of 1890, there was a marked increase of mortality at ages below and above those figures. The duration of the epidemic was much more protracted than in 1890, which was virtually over in six weeks from its commencement, while that of 1891 was four weeks in reaching culmination, and continued for five weeks more before it was apparently exhausted, and its subsequent effects undoubtedly resulted in causing many deaths by complication with other diseases, which cannot be clearly shown by the records.

The following tabulated statement shows the number of deaths under 5 and over 5 years of age, by comparison weekly for the years 1890 and 1891, and the percentage of each class to the total mortality:

Week Ending	No. of Week.	Deaths Under 5 Years of Age.		Percentage of Same on Total Mortality.		Deaths Over 5 Years of Age.		Percentage of Same on Total Mortality.		Total Deaths.	
		1890.	1891.	1890.	1891.	1890.	1891.	1890.	1891.	1890.	1891.
Jan. 10	1	327	253	22.97	34.01	1,097	491	77.03	65.99	1,424	744
" 17	2	302	285	26.24	36.26	849	501	73.76	63.74	1,151	786
" 24	3	265	284	30.39	37.97	607	464	69.61	62.03	872	748
" 31	4	263	300	33.89	40.70	517	437	66.11	59.30	782	737
Feb. 7	5	273	289	35.69	39.26	492	447	64.31	60.74	765	736
" 14	6	266	306	35.86	40.53	476	449	64.14	59.47	742	755
" 21	7	287	289	37.91	38.48	470	462	62.09	61.52	757	751
" 28	8	248	320	33.98	40.15	482	477	66.02	59.85	730	797
Mar. 7	9	249	291	35.78	39.59	447	444	64.22	60.41	696	735
" 14	10	265	324	34.46	39.85	504	489	65.54	60.15	769	813
" 21	11	281	327	36.40	38.92	491	513	63.60	61.08	772	840
" 28	12	288	300	36.78	33.52	495	595	63.22	66.48	783	895
Apr. 4	13	294	375	38.79	34.09	464	725	61.21	65.91	758	1,100
" 11	14	304	399	40.22	32.82	452	817	59.78	67.18	756	1,216
" 18	15	289	484	40.14	35.93	431	863	59.86	64.07	720	1,347
" 25	16	345	455	43.02	37.66	457	753	56.98	62.34	802	1,208
May 2	17	281	353	37.93	36.73	460	608	62.07	63.27	741	961
" 9	18	305	314	41.22	34.50	435	596	58.78	65.50	740	910
" 16	19	254	334	36.03	38.26	451	539	63.97	61.74	705	873
" 23	20	299	290	39.82	37.33	452	487	60.18	62.67	751	777
" 30	21	270	324	41.16	40.60	386	474	58.84	59.40	656	798
June 6	22	340	299	41.42	38.73	481	473	58.58	61.27	821	772
" 13	23	310	324	44.60	43.60	385	419	55.40	56.40	695	743
" 20	24	367	447	47.48	46.96	406	505	52.52	53.04	773	952
" 27	25	499	416	57.03	51.80	376	387	42.97	48.20	875	803
July 4	26	663	544	65.64	59.00	347	378	34.36	41.00	1,010	922
" 11	27	697	581	60.25	60.71	460	376	39.75	39.29	1,157	957
" 18	28	538	666	57.18	62.01	403	408	42.82	37.99	941	1,074
" 25	29	418	550	51.29	58.08	397	397	48.71	41.92	815	947
Aug. 1	30	474	481	52.26	55.54	433	385	47.74	44.46	907	866
" 8	31	382	380	46.77	49.81	433	383	53.23	50.19	815	763
" 15	32	369	492	50.41	48.96	363	513	49.59	51.04	732	1,005
" 22	33	352	319	46.87	41.27	399	454	53.13	58.73	751	773
" 29	34	352	376	49.16	45.52	364	450	50.84	54.48	716	826
Sept. 5	35	325	369	45.33	50.14	392	367	54.67	49.86	717	736
" 12	36	315	341	45.91	45.64	371	406	54.09	54.36	686	747
" 19	37	311	339	47.12	46.57	349	389	52.88	53.43	660	728
" 26	38	245	384	38.34	47.35	394	427	61.66	52 65	639	811
Oct. 3	39	279	366	42.92	49.66	371	371	57.08	50.34	650	737
" 10	40	253	325	41 27	45.01	360	397	58.73	54.99	613	722
" 17	41	235	336	38.02	44.98	383	411	61.98	55.02	618	747
" 24	42	223	276	37.10	40.12	378	412	62.90	59.88	601	688
" 31	43	220	275	36.54	37.31	382	462	63.46	62.69	602	737
Nov. 7	44	226	267	33.67	36.44	445	466	66.32	63.56	671	733
" 14	45	225	260	34.99	33.59	418	514	65.01	66.41	643	774
" 21	46	204	253	34.99	35.44	379	461	65.01	64.56	583	714
" 28	47	225	217	34.41	32.34	429	454	65.59	67.66	654	671
Dec. 5	48	212	238	31.55	35.26	460	437	68.45	64.74	672	675
" 12	49	240	250	34.10	34.06	464	484	65.90	65.94	704	734
" 19	50	260	273	35.57	34.12	471	527	64.43	65.88	731	800
" 26	51	247	321	35.04	36.10	458	568	64.96	63.90	705	889
Jan. 2	52	290	251	37.96	33.29	474	503	62.04	66.71	764	754

From this table it will be perceived that while the average death-rate of this city in 1891 was 25.97 as against 24.58 in 1890, the percentage of deaths of children under five years of age to the whole number of deaths was 41.74 in 1891 as against 40.66 in 1890, and of persons over five years of age 58.26 in 1891 as against 59.34 in 1890. It also shows that the percentage of deaths of children under five years of age to the whole number of deaths was lowest for the week ending November 28, 1891, when it was 32.34 as against 22.97 in 1890, when it was lowest, which was for the week ending January 10, and that it was highest for the week ending July 18, 1891, when it was 62.01 as against 65.64, the highest in 1890, which was for the week ending July 4. It will also be seen that the percentage of deaths of those over five years of age to the whole number of deaths was lowest for the week ending July 18, 1891, when it was 37.99 as against 34.36, the lowest in 1890, which was for the week ending July 4, and that it was highest for the week ending November 28, 1891, when it was 67.66 as against 77.03, the highest in 1890, which was for the week ending January 10.

The Register in his report remarks "that the number of deaths reported in any one week in the epidemic of 1891 was not as large as that of 1890, but the slower course of the disease resulted in a greater mortality.

"The deaths attributed to influenza alone, or to bronchitis or pneumonia as its result in 1891, were 854 against 314 in 1890, while the total number of deaths during the months when the disease was most destructive was only 4,745 in January, 1890, as against 5,048 in April, 1891. In 1890, after the epidemic was over, the general mortality decreased as compared with 1889, so that although at the end of January there had been an excess of 1,370 deaths, the diminished mortality for the remainder of the year reduced the number to only 424. In 1891, on the other hand, April closed with an excess of 960 deaths from the beginning of the year as compared with 1890, and

May with an excess of 1,464, and this increase was not only maintained but added to until the year closed with an excess of 3,556. Moreover, the excess of deaths in January, 1890, was more than accounted for by the excess of deaths from bronchitis, pneumonia, phthisis and influenza, showing that aside from these four causes the mortality was less than usual, while in April, 1891, the deaths from those four causes account for only two-thirds of the total cases of the month, showing that the mortality from other causes was largely in excess of the normal rate." It is, therefore, fairly presumable that la grippe has been the prime factor in the increase of the death-rate for this year.

Contagious diseases also added to the total mortality, especially among children. The increase in the latter is shown in the number of deaths in 1891:

YEAR.	DIPHTHERIA.	SCARLET FEVER.	MEASLES.	TOTAL.
1891	1,361	1,220	663	3,244
1890	1,262	408	730	2,400

A total of 3,244, as compared with 2,400 in 1890.

Again, this city being the chief point for receiving and distributing emigrants, the density of its population in circumscribed areas, and its peculiar cosmopolitan character, render it eminently susceptible to variable death-rates, disturbing what would otherwise be its normal death-rate.

That New York City is pre-eminently a healthy city, both for residence and commercial purposes, with all these adverse conditions, cannot be doubted. With its rapidly increasing population, as shown by the following table for the past twelve years, the death-rate has been steadily decreasing, and only from unavoidable causes, such as a widespread epidemic, influences to which all large cities are alike amenable, it is not probable that the death-rate will show a permanent increase in the future.

The vast improvements in sanitary appliances, the constant attention to the crowded tenement-house population, the watchful care over contagious diseases and the generally advanced intelligence among all but the most indifferent classes of our citizens with reference to their hygienic surroundings, cannot but improve the general welfare and conduce to the general healthfulness of the city.

The following table shows the estimated population, number of deaths and death-rate of this city for the past twelve years:

YEAR.	POPULATION ESTIMATED.	DEATHS.	DEATH-RATE.	YEAR.	POPULATION ESTIMATED.	DEATHS.	DEATH-RATE.
1880	1,209,268	31,937	26.41	1886	1,447,166	37,351	25.81
1881	1,246,011	38,624	30.99	1887	1,491,137	38,933	26.11
1882	1,283,870	37,924	29.54	1888	1,536,444	40,175	26.15
1883	1,322,880	34,011	25.71	1889	1,583,120	39,679	25.06
1884	1,363,075	35,034	25.70	1890	1,631,232	40,103	24.58
1885	1,404,401	35,682	25.40	1891	1,680,796	43,659	25.97

INFANT MORTALITY.

The deaths of children under five years of age were 18,224 as against 16,305 in 1890 and 17,152 in 1889, an excess of 1,919 over 1890. Of the total increase of 3,556 deaths for this year, the excess of 1,919 was more than fifty-six per cent. of the whole increase. As before stated, this increased mortality was due to the influenza epidemic in a great measure, although to a considerable extent it was also due to the prevalence of contagious diseases. To the causes which prevailed during the months of March, April and part of May, and before they had time to recuperate, came the heated terms of June, July and August, still further depressing infant vitality and persistently holding the rate of infant mortality above the normal standard of the previous year, and thereby increasing the total normal death-rate for the year.

The mortality of infants under five years of age seems in all large cities to be excessive, especially so when it is compared with the mortality of children of the same age outside of cities. It is the penalty of massing humanity in crowded tenements, and neither sanitarians or humanitarians can prevent or greatly modify these rates so long as these conditions prevail. A few lives, comparatively, can be saved by the efforts of both, as has been proven in the past; but until a great radical change can be instituted in our tenement-house life, the great rate of infant mortality will still continue. Miasmatic and epidemic influences at all times will give a variable death-rate, but so long as the preventable causes before enumerated remain, no considerable decrease in this special death-rate can be expected. Uncleanliness is also a chief factor, not only for infantile but also for adult mortality.

Even with all of these drawbacks, there has been a gradual and substantial gain in the chances of life of children, as will be shown by the following table, showing the total number of deaths in each year since 1875, number of deaths under one year of age, between one and five years of age, and over five years of age, with the percentage of each class to the whole:

YEAR.	NUMBER OF DEATHS.				PER CENT. OF TOTAL.		
	Total.	Over 5 Years.	Under 1 Year.	1 to 5 Years.	Over 5 Years.	Under 1 Year.	1 to 5 Years.
1875	30,709	15,861	8,540	6,308	51.65	27.81	20.54
1876	29,152	14,912	8,170	6,040	51.26	28.03	20.72
1877	26,203	13,296	7,419	4,888	53.03	28.31	18.66
1878	27,008	14,508	7,100	5,310	54.05	26.29	19.66
1879	28,342	15,565	7,570	5,207	54.92	26.70	18.37
1880	31,937	17,287	8,725	5,925	54.13	27.32	18.55
1881	38,624	20,887	9,691	8,046	54.08	25.09	20.83
1882	37,924	20,404	9,867	7,653	53.80	26.02	20.18
1883	34,011	20,155	8,668	5,188	59.26	25.49	15.25
1884	35,034	19,762	9,636	5,636	56.41	27.50	16.09
1885	35,682	20,415	9,303	5,964	57.21	26.08	16.71
1886	37,351	21,230	9,830	6,291	56.84	26.32	16.84
1887	38,933	22,167	10,083	6,683	56.94	25.90	17.16
1888	40,175	22,817	10,411	6,947	56.79	25.91	17.29
1889	39,679	22,527	10,517	6,625	56.77	26.54	16.70
1890	40,103	23,798	10,288	6,017	59.34	25.66	15.00
1891	43,659	25,435	11,241	6,983	58.26	25.75	15.99

SUMMER CORPS.

Under the provisions of section 4, chapter 504 of the act of 1879, the Board of Estimate and Apportionment is authorized to appropriate each year the sum of $10,000 to be known as "The Tenement-house Fund," to be placed to the credit of the Health Department, to be by it expended.

In the latter part of the month of June in each year a special corps of physicians is appointed, whose duty it is to visit each and every tenement-house, especially among the poorer and more crowded districts of the city, for the purpose of affording medical advice and treatment, distribute rules for the care of infants, and search out and cause to be corrected all unsanitary conditions.

The necessity for this special service during the year was apparent by the rapidly increasing mortality among children during the first week in July, at which time a corps of fifty physicians was appointed, forty-eight of whom were assigned to duty in the forty-eight districts, into which, for this inspection, the city was divided. From the nature of their mission they were enabled practically to correct many household abuses which affected the health of the occupants, which could not be reached by the Medical Corps and Medical Sanitary Inspectors. Two Inspectors were also specially detailed to attend upon the hospital boat of the "St. John's Guild," as well as upon other charitable excursions given for the benefit of mothers and children.

The following tabulated statement shows in detail the record of the work of this corps during the past summer:

Number of tenement-house visitations	39,164
Number of families visited	335,293
Number of sick treated	19,777
Number of minor nuisances abated by personal effort	5,340
Number of complaints of other nuisances forwarded	360
Number of circulars for care of infants distributed	36,551
Number of tickets to the "St. John's Guild" excursions distributed	14,861

The following table from the Bureau of Records illustrates more fully the direct results of the work of the Summer Corps:

1891. WEEK ENDING	DIARRHŒAL DISEASES.	INANITION, MARASMUS, ETC.	TOTAL OF BOTH COLUMNS.	DEATHS UNDER 5 YEARS.	MEAN TEMPERATURE.	MEAN HUMIDITY.	MAXIMUM TEMPERATURE.	MAXIMUM HUMIDITY.
July 11	283	70	353	581	70.1	67	82°	88
" 18	339	59	398	666	77.0	75	90°	90
" 25	265	67	332	550	76.8	76	86°	100
Aug. 1	244	68	312	481	69.9	71	79°	94
" 8	177	51	228	380	74.5	73	91°	89
" 15	234	73	307	492	79.9	75	98°	87
" 22	138	44	182	319	76.4	75	89°	90
" 29	141	66	207	376	76.4	75	88°	90

The practical results as shown by the foregoing table are certainly most gratifying, for it cannot be questioned that without the prompt medication and sanitary care thus afforded by this corps, many more deaths would have been recorded, to say nothing of the sickness and misery relieved.

We cannot fail to commend the assistance, during the progress of this work, of several of the charities, such as the "sea air trips" upon the hospital boat of "St. John's Guild" for sick children and their mothers, in conjunction with the treatment at the Seaside Hospital of the same Guild at New Dorp, Staten Island, the Helping Hands of the King's Daughters in nursing the poor sick, furnishing food supplies, clothing and medicines, the summer sea air excursion of the Hebrew Sanitarium, the Tribune Fresh Air Fund, the Summer Corps of the "Evening World," and other charitable excursions, church societies, etc., which aided largely in the work and afforded to thousands a much-needed change of air, so necessary to the prolongation of infant life.

The appropriation by the City for the Summer Corps of Medical Inspectors is most timely and advantageously spent, securing what must eventually result in saving many lives that may become of particular value in the great body politic.

CONTAGIOUS DISEASES.

During the year there was an increase in the number of reported cases and deaths from contagious diseases over those of the previous year. The number of cases of scarlet fever for the past year was 7,442, as against 3,087 in 1890, with 1,220 deaths, as against 408 in 1890. The number of cases of measles was 11,980, as against 9,544 in 1890, with 663 deaths as against 730 in 1890. During the year the number of cases of diphtheria was 4,874, as against 4,250 in 1890, with 1,361 deaths, as against 1,262 in 1890. The number of cases of typhoid fever was 1,342, as against 1,141 in 1890, with 384 deaths, as against 352 in 1890. The number of cases of small-pox was 21, as against 5 in 1890, with 2 deaths, as against 2 in 1890.

In carrying on the work of the service of this division during the first three months of the year, the city was divided into eleven districts, each of which was under the immediate charge of a Medical Sanitary Inspector. His special duty required him to be familiar with the symptoms, treatment and causes of contagious and infectious diseases. When a report was made to the Board of a case of contagious disease, the Inspector was charged not only with the duty of ascertaining the truth of the same, but he was also, if time permitted, required to make a thorough examination of the premises and ascertain its defects, and to recommend whatever remedy might be necessary, upon which an order was issued by the Board directing that the proper repairs or changes be made. This system continued in vogue until early in the month of April, when important changes were made in the details and methods of medical sanitary inspection. The inspection of plumbing and drainage and other unsanitary conditions was relegated to the Division of Plumbing and Ventilation, two of the Medical Inspectors being transferred to that division. The city was divided into six sanitary divisions, one Inspector being assigned to each, charged with the duty of diagnosing and the disposition of all cases of contagious diseases reported, either by their removal to the hospitals of the Department or isolation in their own premises, as the necessities of each case required.

The following table shows in detail the work of the Medical Sanitary Inspectors for the year:

Cases of Contagious Diseases Reported to this Division and Referred to the Medical Sanitary Inspectors.

Typhus fever	9	Diphtheria	4,874
Typhoid fever	1,342	Small-pox*	21
Scarlet fever	7,442		
Measles	11,980	Total	25,668

Other Diseases Reported and Referred to Inspectors.

Cerebro-spinal meningitis	119	Tabes mesenterica	12
Varicella	296	Perotitis	11
Malarial fever	113	Erysipelas	25
Croup	490	Rotheln	2
Dysentery	49	Leprosy	3
Tubercular meningitis	430		
Phthisis	4,691	Total	6,334

Other Work Performed by the Medical Sanitary Inspectors.

Number of cases of contagious and other diseases visited		26,132
Number of houses inspected on account of contagious and other diseases occurring in them—		
In tenements	20,914	
In private houses	2,313	
In schools and institutions	1,561	
In hotels	40	
Miscellaneous	1,274	
		26,132
Number of complaints and reports made of inspections for orders by the Board of Health		8,683
Number of visits to physicians and undertakers to secure observance of sections of Sanitary Code relating to contagious diseases		364
Number of notices sent to principals of schools to effect exclusion from school of children exposed to contagious diseases		14,507
Number of special diagnoses made		2,352

HOSPITALS.

The hospitals of this Department, three in number, are devoted to the treatment of contagious disease. The Willard Parker Hospital and Reception Hospital are located near the foot of East Sixteenth street; the third, the Riverside Hospital, is situated on North Brother Island, opposite East One Hundred and Thirty-eighth street, and is, therefore, six miles at least from the preceding ones. In the Willard Parker Hospital, which has an ordinary capacity of 60 beds, all cases of diphtheria and the scarlatina of childhood are treated. In this hospital, during the year 1891, 324 cases of scarlatina were treated, with a mortality rate of 24.69 per cent., and 303 cases of diphtheria were treated, attended with a death-rate of 28.05 per cent. An examination of the general death-rate of these diseases in the city at large, during the year, discloses the fact that the death-rate of scarlatina was 15.85 per cent. of the number of cases reported as such, and diphtheria 27.96 per cent. of the reported cases of this disease. The larger death-rate shown by the hospital records is attributable in great part to the malignancy of the disease during the year. The death-rate of the Willard Parker Hospital may be accounted for still further in two additional ways: First, all cases treated as diphtheria at Willard Parker Hospital are unquestionably such, so far as human discernment can determine. These cases have been subjected to the scrutiny, not only of the family physician who first reports them, but of the Special Inspector of this Department who visits the premises to confirm the diagnosis, if the case be one for the hospital, and, finally, the

* 12 from Quarantine.

opinion of these two gentlemen must be corroborated by the House Physician of the hospital before the patient is admitted to the wards for treatment. The fact that not a few cases reported as diphtheria, for removal to the hospital, are found by the Special Inspectors not to be such disease, explains in part, also, the larger comparative mortality rate in the hospital than in the city. It is regretted that circumstances require the mention of another fact, which contributes largely to the death-rate of the hospitals of this Department. It frequently happens that physicians attend patients of the poor, who are afflicted with contagious disease, so long as financial recompense for their services is forthcoming, and, when this fails, the patient is removed to a hospital of this Department. Further comment is not necessary, as language is not sufficiently strong to characterize such a course on the part of a physician.

The following table shows in detail the cases treated, under 5 years of age, between 5 and 16, 16 and 21, and over 21 years of age, with the number of deaths of each class, and rate of mortality of each class to the whole :

Willard Parker Hospital.

	Cases Treated.			Deaths.		
	Male.	Female.	Total Number of Cases.	Male.	Female.	Total Number of Deaths.
Scarlet fever	158	166	324	38	42	80
Diphtheria	128	175	303	42	43	85
Total	286	341	627	80	85	165

	Scarlet Fever.			Diphtheria.		
	Cases Treated.	Deaths.	Rate of Mortality.	Cases Treated.	Deaths.	Rate of Mortality.
Under 5 years	182	61	33.52	127	61	48.03
5 to 16 years	131	18	13.74	69	16	33.19
16 to 21 years	8	1	12.50	45	5	11.11
Over 21 years	3	..	0.00	62	3	4.84
Total	324	80	24.69	303	85	28.05

The Reception Hospital, as its name indicates, is employed for the reception of all patient-affected with contagious disease who are consigned to Riverside Hospital, and also those of doubtful diagnosis, and especially the latter, when public safety demands their removal from the place of its inception.

During the year 1890, 522 patients were received here, 5 of which died before their transfer could be safely attempted. During the following year (1891) 904 patients were received, of which 5 died on the premises before consignment. It is apparent at once that the resources of this hospital were severely taxed during the latter period. In fact, untiring vigilance of the physician in charge was required to prevent disease resulting from intercommunication. This hospital was erected many years ago, and was intended only as the temporary abiding place of small-pox and typhus fever, pending their transfer to the Riverside Hospital, or the establishment of a positive diagnosis. Owing to the increase in the size of the city, and to the attention since given by the Board to other forms of contagious disease, this hospital has become wholly inadequate to meet the requirements of the service. However, $30,000 were appropriated by the Board of Estimate and Apportionment during the latter part of the year 1891, with which to erect a new, more commodious and better equipped structure. Action in this direction, however, is still deferred, owing to inability to secure suitable ground area at the present site, on which to construct a proper and capacious building.

Nor is this proposed Reception Hospital sufficient to meet the demands of the service, when the time of the Department, the comfort and safety of the patients and a wise expenditure of means and money are considered. At the present time patients ill of contagious disease who reside in the vicinity of One Hundred and Thirty-eighth street must be conveyed through the public thoroughfares four, five, six and even eight or more miles to East Sixteenth Street Reception Hospital, then, perhaps, they are taken by boat back again to opposite One Hundred and Thirty-eighth street and placed in the hospital on North Brother Island. In the interests of wise expenditure and a compliance with humanity's demands, a suitable reception hospital for the accommodation of these unfortunate victims of disease should be constructed at once at the water's edge as near as possible to North Brother Island. It appears necessary to again call the attention of the public to the fact that there should be erected in this city one or more hospitals for the reception and treatment of those cases of contagious disease that are able and willing to meet the expense of such attention. It is a sad commentary on the public spirit of this great city that no provision has yet been made to care for such as may become thus afflicted, who come from other parts of the country to patronize the business interests that add to the city's wealth and enterprise, or, perchance, may be invited by its citizens to join in the celebration of national events. Suitably placed hospitals, provided with private rooms and an opportunity to secure the attention and treatment of a well-to-do citizen should be afforded. As before stated, Riverside Hospital is situated on North Brother Island, a distance at least of six miles from East Sixteenth street. This island is beautifully located for the purposes of retention and treatment of all varieties of contagious disease. It has an area of about fourteen acres, is dry, cool, healthful and surrounded by objects of great interest. Its distance from the nearest main shore is about one-half a mile. In the hospital and pavilions here situated are treated all form of contagious disease, except diphtheria, that come under the jurisdiction of the Health Department.

The following table shows the variety of disease and the number of cases of each treated here during the past year, both male and female, adult and minor, the number of deaths, together with the mortality rates of each disease during this period :

Riverside Hospital.

	Cases Treated.			Deaths.		
	Male.	Female.	Total No. of Cases.	Male.	Female.	Total No. of Deaths.
Small-pox	16	5	21	1	....	1
Chicken-pox	11	6	17	3	1	4
Leprosy	2	....	2	....	....	....
Typhus fever	5	3	8	....	....	....
Scarlet fever	128	142	270	32	23	55
Measles	289	274	563	45	34	79
Whooping-cough	8	10	18	1	....	1
Total	459	440	899	82	58	140

	Cases Treated.		Deaths.	
	Adults.	Minors.	Adults.	Minors.
Small-pox	18	3	1	....
Chicken-pox	1	16	1	3
Leprosy	2	....	....	....
Typhus fever	6	2	....	....
Scarlet fever	131	139	8	47
Measles	133	430	4	75
Whooping-cough	1	17	....	1
Total	292	607	14	126

Finally, and very important, many of the public-spirited physicians of the city give to the Department and to the sick the benefit of that judgment and skill which result from mature thought and long experience in the treatment of disease.

VACCINATION.

For the prevention of small-pox, this Department has an organized corps of physicians who are known as Permanent Inspectors of Vaccination, in addition to which other physicians, who are known as Temporary Inspectors of Vaccination, are appointed in the early spring and fall months, all of whom are clothed with the specific duty of offering, by house to house visitation, free vaccination to all persons needing it, thus preventing the laying of the foundation for the occurrence and spread of small-pox. Under the provisions of section 97 of the sanitary regulations of the Board of Education, no pupil is allowed to attend any school, nor can any teacher be employed in the same, unless such pupil or teacher has been properly vaccinated; and as a prerequisite for the admission, employment or attendance of a pupil or teacher, the principal of the school must be furnished with a certificate of a physician in good standing, as evidence of such vaccination, and is required to co-operate with such agents of the Board of Health as may be authorized to visit the schools for the purpose of examining and vaccinating the pupils, and must require re-vaccination of all pupils ascertained by the agents of the Board of Health not to be fully protected by a former vaccination, and no pupil refusing to be so re-vaccinated, either by the agent of the Board of Health or by the physician of the family to which he or she belongs, shall be permitted to attend any public school until such requirement is fully complied with. In accordance with the above regulation, pupils of the various schools are vaccinated by special Inspectors of Vaccination, who visit the schools during teaching hours and vaccinate all pupils, except some good reason for non-vaccination be presented by the teacher, pupil or parent. The vaccine virus used is produced by a branch of the Department known as the "Vaccine Laboratory," and all surplus virus is sold to applicants from this and other cities, at a fixed price, the proceeds thereof being turned into the City Treasury, to be used in paying the salaries of the Temporary Inspectors of Vaccination. In the case of primary vaccinations, strict supervision is made of the work. Each Inspector is required to report his primary vaccinations, and the persons so vaccinated are visited by another Inspector of Vaccination, whose duty it is to report whether or not they were successfully done. During the past year 25,505 primary vaccinations were made, as against 30,329 in 1890, and 84,132 re-vaccinations as against 61,788 in 1890, an increase of 17,520 in primary and re-vaccinations. The net cost per vaccination of the Department for each person vaccinated was twelve cents in 1891 as against seventeen cents in 1890 and twenty-two cents in 1889.

The following table shows by comparison the vaccinations performed by the Vaccinating Corps for the past five years, the salaries of Inspectors, the cost of virus, and also the cost per vaccination to the Department for each person vaccinated :

	1887.	1888.	1889.	1890.	1891.
Cash received for virus	$2,239 36	$2,791 66	$2,459 22	$1,622 51	$2,096 13
Salaries, regular vaccinators	$10,650 00	$12,733 79	$10,599 92	$11,013 25	$9,900 00
Salaries, temporary vaccinators	10,292 46	4,008 80	3,987 21	3,523 46	2,981 82
Total salaries	$20,942 46	$16,742 59	$14,587 13	$14,536 71	$12,881 82
Cost of calves and cattle	$2,637 68	$2,621 00	$2,925 03	$1,337 00	$1,752 00
Cost of feed	374 61	476 95	368 60	264 00	339 50
Other supplies	941 85	1,029 78	1,033 86	805 45	116 60
Rent	.....	....	.....	.....	600 00
Total cost of supplies	$4,154 14	$4,127 73	$4,327 46	$2,926 45	$2,808 16
Number of vaccinations	83,270	83,063	74,542	92,047	109,637
Cost of each vaccination	$0.25½	$0.21¾	$0.22+	$0.17+	$0.12+

The following miscellaneous work was performed by the Chief Inspector of Vaccination :

Number of animals vaccinated for cultivation and propagation of virus	148
Number of quill slips collected	192,200
Number of ivory points collected	17,650
Number of tubes of virus collected	595

DISINFECTION.

A great preventive of the spread of contagious disease is an abundant supply of fresh air; it is also especially necessary to remove and render innocuous all materials which are known to favor the spread of disease. Infected houses, rooms and articles of clothing are, therefore, given special attention by the Board, through the agency of a corps of Disinfectors, which is connected with the Division of Contagious Diseases. For the purposes of this work, the city is divided into eight districts, to each of which a Disinfector is assigned, whose duty it is to visit all houses in which contagious diseases have been reported, when possible, fumigate and disinfect the premises and its contents, and give verbal and printed instructions for further disinfection, when necessary. To one Disinfector is given the duty of removing all portable articles from the infected premises to the Disinfecting Station near the foot of East Sixteenth street, where it is rendered innocuous in an apparatus especially constructed for that purpose, by the agency of hot air and steam. It is then returned to the owner. A crematory is connected with the Disinfecting Station, in which infected materials can be destroyed. This system of disinfection of portable articles has caused a saving of much valuable material to owners, who in many instances were unable to bear the loss.

During the past year the following amount of work was performed by this corps :

Number of visits to infected houses for purposes of disinfection and fumigation	30,147
Number of infected rooms fumigated after occurrence in them of contagious diseases	28,347
Number of infected and contiguous rooms for which disinfectants have been distributed by disinfectors	96,208
Number of pieces of infected goods removed by Department	35,519
Number of pieces of infected goods brought to the Department by owners for disinfection	10,930
Number of pieces of infected goods returned to owners after disinfection	37,979
Number of pieces of infected goods destroyed by cremation	8,420
Number of pieces of goods disinfected and remaining on storage to be returned	50
Number of times ambulances and other vehicles were fumigated	1,508

AMBULANCE CORPS.

Connected with the Division of Contagious Diseases there is an Ambulance Corps composed of four men, whose duty it is, when ordered by the Medical Inspectors, to remove patients to the hospitals, disinfecting the premises immediately thereafter.

The work performed by this corps during the year was as follows :

Number of patients removed on account of contagious diseases to the hospitals of the Department	1,065
Number of bodies (dead from contagious diseases) removed to Reception Hospital, for interment at Hart's Island	19

VETERINARIAN.

There is in connection with the work of the Department a Veterinary Surgeon, whose duty it is to examine all cattle used for the purpose of cultivating vaccine, as to their healthy condition; also to examine all cattle, horses and other animals in the city, suspected of or liable to disease.

The result of his work during the year was as follows :

Number of cases of contagious disease visited	866
Number of cattle examined	34,721
Number of glandrous horses destroyed	68
Number of post-mortems on cattle	146

SANITARY INSPECTION.

The several sections of the Sanitary Code are enforced by the general orders of the Board, or in extreme cases, by peremptory orders of the Sanitary Superintendent, or by arrest through the medium of the Sanitary Police.

For the purpose of special sanitary inspection the city is divided into twenty-five districts, one Inspector being detailed for work in each district, his duty consisting in the investigation and

making of reports and recommendations to the Board upon citizens' complaints referred to him, and of the frequent inspection of and report upon special places which are likely to become dangerous to life or detrimental to health. This is in addition to the duty of inspecting the plumbing and drainage of all new buildings erected.

Each Inspector is required to be thoroughly familiar with his district, and, when time affords, to make a general inspection of his district, also forwarding, as before, complaints of any sanitary defects he may discover. He is also required to reinspect premises upon which orders have been issued to see that the same have been complied with.

In the investigation of complaints, the following instructions were issued early in the year to each of the Inspectors for their guidance in reference to the form of return of their investigation of the result and recommendations thereon.

Complaints and Recommendations.

Complaint—That the soil-pipe of the water-closet (give location, etc.) is obstructed and the bowl (or hopper) is filthy and offensive.

Recommendation—That the water-closet be cleaned and all obstructions in soil-pipe removed.

C. That the water-closet is not (or, is not properly) flushed, and is offensive.

R. That the water-closet be cleaned and properly flushed.

C. That the pan of the water-closet leaks (or is not properly adjusted) and does not preserve a water-seal.

R. That the defective pan of water-closet be replaced by a new one (or be readjusted so as to preserve a water seal).

C. That the hopper of the water-closet is old, corroded, and cannot be kept clean, and is filthy and offensive.

R. That the old, corroded hopper of water-closet be replaced by a new enameled one.

C. That the floor under the seat of the water-closet is not protected from drippings of urine, and is filthy and offensive.

R. That the water-closet be provided with an enameled drip-tray, and the floor under the seat cleaned and disinfected.

C. That the drip-tray is an old, metallic one, filthy with urinary deposits.

R. That the old, corroded, filthy drip-tray be replaced by an enameled one.

C. That the water-closet apartments are not (or are insufficiently) ventilated.

R. That the water-closet apartments be ventilated by a special shaft (eight inches, etc.), extending above the roof, and that the doors be cut away at least three inches at the bottom to promote ventilation.

C. That the woodwork of the water-closet is saturated with filth, so that it cannot be properly cleaned.

R. That the filthy woodwork of water-closet be replaced by new.

C. That the supply-pipe of the water-closet leaks.

R. That the supply-pipe, etc., be repaired so as not to leak.

C. That the water-closets (or water-closet on the —— floor) are flushed directly from the Croton-water supply-pipe of the house, and the water used for drinking and cooking purposes is in danger of contamination.

R. That each water-closet (give location) be flushed from a water supplied cistern, properly adjusted over the same.

C. That the school sink (location) is not properly flushed, and is filthy and offensive.

R. That the school sink be disinfected, emptied and cleaned, and flushed daily.

C. That the school sink discharges its contents into a manhole which is sewer connected, but is always filthy with sewage.

R. That the school sink be connected with house-drain by a continuous pipe, with running trap and hand-hole, and that said manhole be cleaned and filled with fresh earth.

C. That the urinal is not properly flushed and is filthy and offensive.

R. That the urinal be cleaned and properly flushed.

C. That the urinal is an old, corroded metallic one, filthy and difficult to clean.

R. That the old corroded urinal be replaced by a new enameled one (or by a porcelain one).

C. That the floor under the urinal is not protected, and is filthy with drippings of urine.

R. That a safe be constructed under urinal, and the filthy and saturated flooring be replaced by new.

C. That the waste-pipes of the sinks (or urinals, etc.) are not trapped, and the main waste-pipe is not ventilated (or is insufficiently ventilated by a ¾-inch pipe, etc.).

R. That the sinks, etc., be properly trapped, and the main waste-pipe extended in full calibre two feet above the roof.

C. That the lead waste-pipes of the sinks are connected with the iron main waste-pipe by defective cement (or putty) joints.

R. That all connections between lead waste-pipes from sinks and the main waste-pipe be made with brass ferules, lead calked and wiped.

C. That the lead waste-pipe is connected with the iron drain by a lead saddle wired on (or puttied or cemented).

R. That the lead waste-pipe be connected with the iron drain by means of an iron saddle hub, brass ferule, etc.

C. That the lead waste-pipe leaks.

R. That the waste-pipe be repaired so as not to leak.

C. That the safe wastes (give location, under pumps, water-closets, basins, etc.) are connected with the soil-pipe and are not sealed.

R. That the safe wastes (etc., etc.) be soldered up (or made to discharge through a continuous pipe upon the cellar floor, or into a trapped, sewer connected, water supplied, open sink).

C. That the traps under sinks are emptied by siphoning.

R. That the traps (etc.) be so adjusted that they cannot be siphoned.

C. That the overflow pipe of tank is connected with the soil-pipe.

R. That the tank overflow pipe be disconnected from the pipe.

C. That the waste-pipe of ice-box is connected with the house-drain.

R. That the waste-pipe of the ice-box be disconnected from the drain and be made to discharge into a properly trapped, sewer connected, water supplied, open sink.

C. That the soil-pipe is not ventilated (or is insufficiently ventilated by a 1-inch or 2-inch pipe, etc.).

R. That the soil-pipe be ventilated by extending the same in full calibre two feet above the roof.

C. That the soil-pipe serves as a leader, and the traps of the sinks and water-closets connected therewith are siphoned.

R. That the use of the soil-pipe as a rain leader be discontinued, and a separate and independent rain leader be provided; that the soil-pipe be ventilated by extending same in full calibre two feet above the roof.

C. That the soil-pipe is defective (give location).

R. That the defects in soil-pipe on —— floor be closed with iron bands.

C. That the earthenware house-drain is defective, and foul gases and liquids escape therefrom into the cellar.

R. That the defective earthen house-drain be removed, its site cleaned, disinfected and filled with fresh earth, and the premises separately and independently connected with the street sewer by and through extra heavy iron pipe, at least six inches in diameter, with all joints properly lead calked.

C. That there are holes in the iron house-drain in cellar.

R. That the holes in iron drain in cellar be closed with iron bands.

C. That the house-drain is defective (or obstructed) and sewage leaks therefrom into the cellar.

R. That the house-drain be repaired so as not to leak (or that all obstructions be removed from the house-drain, and all defects therein be properly repaired).

C. That the yard (or front or rear area) is not properly graded or drained, and surface water stagnates thereon.

R. That the yard (etc.) be properly graded and drained so that all surface water shall be discharged into a properly trapped, sewer connected drain (or into the hydrant sink, etc.).

C. That the pavement of the yard is broken and sunken, so that surface water stagnates thereon.

R. That the pavement of the yard be properly repaired.

C. That the (front or rear) leader leaks, and the escaping contents fall into the —— (or run into the cellar, or render the subjacent wall wet and unhealthy).

R. When the foundation walls of houses, or walls are made wet by a defective leader, refer to Fire Department.

C. That the rear leader (or leader of rear extension, etc.), is not trapped, and foul odors therefrom enter the windows of (location).

R. That the rear leader (or leader of rear extension) be trapped at its base.

C. That the (front or rear) eaves gutter leaks (or is badly adjusted) so that roof water overflows into ——.

R. Refer to Fire Department.

C. That the roof leaks, rendering the upper rooms damp.

R. That the roof be repaired so as not to leak.

C. That the cellar is used as a place of lodging and sleeping; that the ceiling is on a level with the sidewalk (or below, or only six inches above); that there is no sub-cellar; that the ceiling is not seven feet above the floor; that it is ventilated and lighted only by (give details); that it is damp, dark, and unfit for human habitation.

R. That the cellar be vacated as a place of lodging and sleeping.

C. That the cellar (areas, halls, etc.) is filthy with dirt, garbage and rubbish (or sewage, etc.).

C. That the privy-house is filthy and offensive with night-soil, etc.

R. That the cellar (or yard, privy-house, etc.) be cleaned and disinfected.

C. That the walls and ceilings of the halls (front or rear, or both, or of apartments) are dirty.

R. That the walls and ceilings (halls, rooms, etc.) be cleaned and whitewashed.

C. That the chimney (or soil-pipe, etc., give location), rises to a level with —— story of —— and smoke and coal gas (or offensive odors) therefrom enter the (front, rear or side) windows of ——.

R. That the nuisance caused by the escape of smoke and coal gas from chimney of —— (or offensive odors from soil-pipe) into —— be abated.

C. That the ceiling of —— room (or of hall, etc.) is loose and threatens to fall, a part having already fallen.

R. That the ceiling of (rooms, halls, etc.) be properly repaired.

C. That the inner bed-rooms have no windows opening into the hall, or into the adjoining room, as required by the Tenement-house Act.

R. That the inner bed-rooms be ventilated by means of a window not less than three square feet in area, opening into the hall, and another of equal area opening into the front (or rear) room.

C. That the stable floor and space beneath is not properly drained, and said floor is defective, and the leakage through the same renders the earth beneath very filthy and offensive.

R. That all offensive earth be removed from beneath the stable floor, the ground space cleaned, disinfected, cemented, and so graded and drained that all surface water and liquid matter shall be discharged into the street sewer by and through a properly trapped, extra heavy iron drain; that the floor of horse stalls be provided with a valley drain properly trapped and connected with the sewer-connected drain.

C. That the vacant lot is constantly wet with surface water, which stagnates thereon.

R. That the vacant lot be filled with fresh earth one foot above the level of standing water thereon (where there is no sewer in street). That the vacant lot be properly graded and drained, so that all surface water shall be discharged into the street sewer, through a properly trapped drain (where there is a sewer in street).

The house-drain extends through the front wall of the house; the house sewer from the front wall to street sewer.

During the past year, the number of inspections and reinspections made by the Sanitary Inspectors was 59,515 as against 39,202 in 1890, resulting in 13,222 complaints and orders for the abatement of nuisances, as against 9,536 in 1890.

The subjects of the orders referred to are as follows:

Apartments cleaned, disinfected or ventilated.
Areas connected with sewer, cleaned, disinfected, pavements of, graded and repaired.
Balusters of stairs repaired.
Basements cleaned and disinfected.
Business of lard-rendering, slaughtering, gut-cleaning, fat-rendering, storing bones, manufacturing fertilizers, smoking sausages, or storing rags discontinued.
Buildings cleaned or inclosed.
Ceilings cleaned, whitewashed or repaired.
Cellars cleaned, made water-tight, cemented, connected with sewer, ceilings plastered, doors repaired.
Cellars vacated as places of living or sleeping.
Cesspools disinfected, emptied, cleaned, filled, constructed, repaired or covered.
Chimneys repaired, extended, cleaned, or obstructions removed.
Cisterns disinfected, emptied, cleaned, covered or provided.
Clothes-poles reset.
Coops cleaned, disinfected or removed.
Cows removed.
Dogs removed.
Drains cleaned, constructed, covered, repaired, removed, obstructions in removed, or connected with sewer.
Excavations cleaned, repaired, relaid, graded or connected with sewer.
Fences repaired or constructed.
Fire-escapes cleaned or obstructions removed.
Fixtures trapped and waste-pipes therefrom connected on outlet side of water-closet traps.
Flashings provided over woodwork of sinks.
Floors cleaned, repaired, relaid, graded, cemented or connected with sewer.
Fowls removed.
Gas-mains and pipes repaired and gas provided in dark halls and rooms.
Garbage and ash receptacles provided, removed, cleaned and disinfected.
Gutters (house or street) provided, repaired, cleaned, disinfected, obstructions in removed, connected with street sewer, street gutter or cesspool.
Halls cleaned and filthy or defective floor coverings removed.
House-drains provided with running traps and fresh-air inlets.
Hydrants repaired, construc ed, removed.
Housekeepers provided for tenements.
Ice-boxes connected with properly trapped, water supplied, open sinks.
Joints closed or calked with lead.
Leaders repaired, provided, extended, adjusted, connected with sewer, street gutter or privy vault.
Lodging-houses discontinued.
Lots (vacant) cleaned, disinfected, inclosed, filled, graded, connected with sewer or street gutters.
Manure vaults, boxes or receptacles disinfected, emptied, cleaned, covered, filled, constructed or lined.
Manholes covered and repaired and removed.
Offensive trades and business discontinued or removed.
Pigeons removed.
Pipe (soil, supply, vent, waste, sewer or iron) provided.
Pipe (soil, waste or supply) repaired, trapped, removed, extended, graded, cemented, ventilated or repaired, and openings closed and obstructions removed.
Privy vaults disinfected, emptied, cleaned, ventilated, lined with brick, repaired, cemented, constructed, filled or removed.
Privy-houses cleaned, disinfected, repaired, constructed, removed, adjusted to vaults, or seats of, provided with cover.
Pumps provided or repaired.
Rabbits removed.
Railings provided or repaired.
Roofs repaired or cleaned, and roof bulkheads repaired.
Roof tanks provided, cleaned or covered.
School-sinks provided, cleaned or repaired.
Sewer-pipes provided, repaired, obstructions in removed, trapped or openings inclosed.
Sinks provided, repaired, cleaned, removed, flushed, connected with street sewer or street gutters.
Sidewalks cleaned, repaired, graded, flagged or obstructions in removed.
Skylights repaired and provided.
Slaughter-houses cleaned, repaired or connected with sewer.
Smoke-pipes extended or repaired.
Soil-pipes discontinued as rain leaders.
Spaces cleaned, disinfected, graded, cemented, filled or connected with sewer.
Stables cleaned, removed, repaired or connected with street sewer.
Stagnant water removed.
Stairways cleaned or repaired.
Trees removed.
Urinals cleaned, disinfected, repaired, flushed, connected with sewer, removed or floor covered with zinc.
Walls cleaned, whitewashed or repaired.
Wash-roofs repaired.
Wash-trays trapped, provided.
Water-closets repaired, cleaned, disinfected, flushed, constructed, ventilated or connected with street sewer.
Water-closet pans adjusted to preserve water-seal, bowls burned out and re-tarred, cisterns provided.
Window sashes repaired and glazed.
Yards cleaned, disinfected, filled, graded, paved, grade of pavements repaired, relaid in cement or connected with street sewer.

TENEMENT-HOUSE INSPECTION.

A tenement-house, under the statute, includes every building or portion thereof which is rented, leased, let or hired out, to be occupied as a home or residence of three or more families living independently and doing their cooking upon the premises, or by more than two families upon any floor so living and cooking, but having a common right in the halls, stairways, yards, water-closets, or some of them. Under the provisions of chapters 84 and 288 of the act of 1887, it became the duty of the Board of Health to inspect, semi-annually, all of this class of houses, and, for the purpose of enforcing the provisions of these acts and the several sections of the Sanitary Code in relation thereto, the Board of Police have detailed to the service of the Board of Health one Sergeant, one Roundsman and forty-three Policemen (men of long experience in the Police Force of this city), who are known as the Sanitary Company of Police. For the purpose of this inspection the city is divided into 31 districts, and a Sanitary Policeman assigned to each, who is

directed to make an inspection of each of the tenement-houses within his district, at least twice in each year, the first inspection commencing in the early part of January and the second in August. Each officer is furnished with a memorandum book in which to enter the street and number of each house, date of inspection, and whether or not any cause for complaint was found. He is also instructed to secure, by personal direction, the abatement of all minor nuisances he may discover. Upon the event of failing to do so, he is to make a written complaint of the same, which is forwarded to the Board for an order. If the subject-matter indicates that he does not possess the technical knowledge to comprehend a nuisance existing and the remedy for it, then the report is referred to a Sanitary Inspector who makes an investigation and returns a complaint, upon which an order is issued by the Board.

The improvement of the tenement-houses of this city, and thereby the condition of those residing therein, is regarded by the Board as one of the most important subjects that has engaged its attention for a number of years; and the constant inspection by the officers of this Board, under the provisions of the Tenement-house Law, must result in a decrease in the rate of mortality. In their inspections the Sanitary Police are instructed to ascertain the following facts in connection with each house:

Location.

Number of families.
Number of occupants.
Privy accommodations—number of sittings.
Housekeeper on premises.
Owner on premises.

Cellars if Occupied for Dwelling Purposes.

Whether the floor is water-tight.
Whether the ceiling is plastered.

Yards.

Whether properly graded.
Whether sewer connected.

Front Areas.

Whether graded.
Whether sewer connected.
Sanitary condition.

Waste Pipes.

Whether joints are connected with cement or lead.
Whether trapped.
Whether ventilated two feet above the roof.

Soil Pipes.

Whether the joints are connected with cement or lead.
Whether trapped.

General Inspection.

Cellars.
Stairs and balusters throughout the house.
Walls and ceilings of halls and rooms throughout the house.
Floors of rooms and halls throughout the house.
Slop-sinks, whether trapped and ventilated.
Wash-basins, whether trapped and trap ventilated.
Bath-tubs, whether trapped and trap ventilated.
Croton supply pipes.
Roof.
Wash-roof.
Skylights.
Leaders.
Eaves-gutter.
Chimneys.
Fire-escapes.
Water-closets, whether trapped and trap ventilated.
Privy-vaults.
School-sinks.
Privy houses.
Cesspools.
Urinals, whether properly finished.
Clothes-poles.
Fences.
Hydrants in yard.
Air-shafts.

Ash Receptacles.

Whether sufficient.
In sanitary condition.
Whether kept within stoop-line.

The entire number of inspections of tenement-houses during the year was 175,027. This regular and frequent inspection has resulted in an improvement of the sanitary condition of this class of dwellings.

The semi-annual inspection of tenement-houses, made pursuant to the requirements of the Tenement-house Law during the year, and completed on the 28th day of September, 1891, developed the fact that there were:

Front houses	34,967
Rear houses	2,391
In all	37,358

Occupied by 276,565 families, composed of—

Children under 5 years of age	160,708
Persons over 5 years of age	1,064,703
In all	1,225,411

There were in these houses 7,310 adult and 249 children "home-workers," divided as follows:

Report of Home-workers in Tenement-houses.

CHILDREN.	OCCUPATION.	ADULTS.	CHILDREN.	OCCUPATION.	ADULTS.
..	Apron-makers	3	..	Milliners	21
..	Artist	1	..	Musical instruments	4
..	Artificial flowers	19	..	Mouse-trap makers	4
..	Button-makers	7	..	Machinists	2
..	Basket-maker	1	4	Necktie-makers	108
..	Bookbinders	6	..	Pocketbook-maker	1
4	Barbers	72	..	Piano trimmings	2
..	Buttonhole-makers	31	..	Paper-box makers	6
..	Brush-maker	1	..	Pipe-maker	1
..	Cap-makers	73	..	Quilters	3
..	Cap-tip makers	4	..	Scroll-sawyer	1
..	Cloak-makers	81	..	Slipper-makers	6
..	Cabinet-makers	9	..	Surgical instruments	2
65	Cigar-makers	948	2	Shoe-fitters	14
..	Confectioners	2	..	Suspender-makers	7
..	Doll-maker	1	..	Shirt-makers	228
39	Dressmakers	495	..	Shoemakers	297
..	Embroidery	7	..	Silversmiths	5
..	Feather-curlers	3	135	Tailors	4,558
..	Fur-sewers	21	..	Upholsterers	8
..	Glove-makers	2	..	Worsted knitting	2
..	Gold embroidery	1	..	Watchmakers	8
..	Ladies' underwear	4	..	Wood-carvers	6
..	Laundry	222	..	Wig-maker	1
..	Locksmith	1	249	Total	7,310

In addition to the duty of house-to-house inspection, the Sanitary Police are requred to make night inspections of tenement-houses to prevent overcrowding. Under the rule established by the Board of Health, the question of overcrowding has special reference to and should be understood to be such overcrowding as is dangerous or prejudicial to the health of the occupants.

A rule has been established fixing 400 cubic feet for each adult and 200 cubic feet for each child, as the minimum air space required. Memorandum is made by the Inspector of the number of persons found in each apartment at the time of the inspection, and measurements taken the following day. In determining the amount of cubic feet which each person has in a given room, the Inspector has only to apply the ordinary rules of measurement.

54,643 inspections were made during the year as against 23,885 in 1890, and 1,745 orders issued as against 891 in 1890, resulting in a reduction of occupants to the number of 3,350 as against 1,555 in 1890.

Lodging-houses.

Under the provisions of the Sanitary Code a "lodging-house" shall be taken to mean and include any house, building or portion thereof in which persons are harbored or received or lodged for a single night, or for less than one week at a time. Lodging-houses in this city are maintained under permits issued by the Board of Heath, which are based upon certain sanitary rules as to light, ventilation, plumbing, etc.

During the year 645 night inspections were made for the purpose of examining the beds and bedding as to their cleanliness, also as to water-closet accommodations, and to ascertain generally whether the premises were kept in a good sanitary condition.

These houses in the past were nearly all located south of Fourteenth street and east of Broadway, but it is noticed in the past year that there has been a disposition gradually to move with the march of improvement to the upper portion of the city.

At the close of the year there were outstanding permits for 116 of these houses, as against 146 at the end of 1890, accommodating 14,232 lodgers as against 14,736 in 1890. These houses are distributed as follows:

WEST OF BROADWAY.			EAST OF BROADWAY.		
Location.	Lodgers.	Houses.	Location.	Lodgers.	Houses.
South of Fourteenth street	1,230	14	South of Fourteenth street	10,398	83
Fourteenth street to Fifty-ninth street	288	3	Fourteenth street to Fifty-ninth street	1,236	7
Fifty-ninth street to One Hundredth street	....	..	Fifty-ninth street to One Hundredth street	311	3
North of One Hundredth street	....	..	North of One Hundredth street	769	6
Totals west of Broadway	1,518	17	Totals east of Broadway	12,714	99

Total number of houses	116
Total number of lodgers	14,232
Classified as follows:	
Houses 50 lodgers and under	31
Houses over 50 and under 100 lodgers	18
Houses over 100 and under 200 lodgers	47
Houses over 200 and under 300 lodgers	12
Houses 300 and over	8
Total	116

SLAUGHTER-HOUSES.

Daily inspections were made during the year of each of the slaughter-houses in the city, to ascertain their general condition, drainage, etc., and whether or not the buildings occupied for this purpose were thoroughly cleansed and purified, and if all offal, blood and other offensive and refuse matter had been removed. In the case of any sanitary defect existing, orders were at once issued to remedy the same.

The total number of permits outstanding at the close of the year was:

For slaughtering cattle and sheep	69
For slaughtering hogs	9
In all	78

In addition to which there were three permits for houses for the slaughtering of chickens.

The buildings used for slaughtering purposes (thirty-eight in all) are situated between Forty-third and Forty-sixth streets, from First avenue to the East river, and west of Eleventh avenue to the North river, between Thirty-ninth and Forty first streets, and at Fifty-eighth street and North river.

Among the many improvements in this line of business during the year, was the erection of an abbatoir on First avenue, between Forty-fourth and Forty-fifth streets, and the demolition of the old-fashioned houses between Forty-third and Forty-fourth streets, and First avenue and the East river, on the site of which a model abbatoir is now in process of erection.

It is evident from these and other changes that have taken place in the past few years, that the business is gradually being centered in the larger establishments, and as at present conducted, under the careful supervision of the inspectors of this Department, is as free from offense from a sanitary point of view, as its nature will permit.

STABLES AND STABLE MANURE.

Section 100 of the Sanitary Code, as amended, provides that:

"Whenever there shall be a cart-load of unbaled manure on any premises, it shall be immediately removed as herein directed, the carts or wagons being loaded within the premises and not upon the street or sidewalk. It shall not be lawful to remove manure from any stable or premises, or to cart the same within the city limits without a permit from the Board of Health, unless the manure be pressed and baled in a manner satisfactory to the Board of Health, or be in tightly covered carts or wagons of a construction approved by the Board of Health, and be removed in a manner not in any way offensive or to cause any nuisance. Every such manure cart or wagon must have a permit in writing from the Board of Health, and be used in accordance with the conditions of such permit, and not otherwise. All manure when transported through the streets must be covered and secured so as to prevent offensive odors escaping, and drippings upon the streets, or be baled or enclosed in tightly covered barrels or receptacles, approved by the Board of Health. The bales, barrels or other receptacles above mentioned shall not be opened, or the carts and wagons unloaded, within the city limits, except upon the conditions of a permit in writing from the Board of Health, and at such docks or places remote from dwellings as shall be approved by the Board of Health, and to which a permit in writing for such use shall have been previously granted by the Board of Health. When baled, manure shall be removed every ten days, or sooner, if required by the Board of Health. No manure shall be allowed to be thrown upon, or to fall or remain in any street, sidewalk or ground near such stable. No manure-vault under the sidewalk shall be built or used. No manure-vault or receptacle outside of a stable shall be built or used on any premises, except pursuant to the terms of a permit granted therefor by the Health Department.'

During the year the Board has continued to follow the same line of policy as that inaugurated in 1890, and have succeeded in causing to be discontinued the use of manure-vaults outside of stables, and those in the yards of stables whenever reported as a nuisance, as well as the practice of loading loose manure in front of stables, and the removal of manure from vaults through openings in the sidewalks and from areas. It has continued to enforce the regulations requiring all manure carts to be tight and tightly covered. Careful inspections have been made from time to time of stables, and orders issued when necessary for the improvement of the same; in addition to which, a complete census was taken of the number of stables, and of the number of horses therein contained.

Total number of stables	4,297
Total number of horses	62,208
Number of stables where manure is kept in barrels	854
Number of horses where manure is kept in barrels	4,360
Number of stables where manure is baled	19
Number of horses where manure is baled	643
Number of stables where manure is burned	17
Number of horses where manure is burned	296
Number of stables where manure is kept inside	2,276
Number of stables where manure is kept outside	1,131

PLUMBING AND VENTILATION.

This Division is charged with the inspection of the plumbing and drainage of all new and reconstructed buildings, and of the light and ventilation of tenement-houses. For the purpose of inspection, the city is divided into twenty-five districts (as mentioned under the head of Sanitary Inspection), one Inspector being assigned to each district. Under the provisions of chapter 908 of the Laws of 1867, as amended in 1873, no tenement-house can be erected in this city until the plans for light and ventilation have been approved of by this Board, nor can the plumbing and drainage (see chapter 450, act of 1881) of any building in the city be executed until the plans have had the approval of this Department. The duty of the Inspectors of this Division is to carefully inspect from time to time during its progress, each building in his district, and see that the work is being executed according to the plans and specifications approved of by the Department, and also to attend to the special sanitary work of the district. This constant and careful supervision by the Inspectors of this Division in respect to light and ventilation of tenement-houses and the plumbing and drainage of all new buildings, has insured improved conditions conducive to the health and comfort of the people. During the past year the work performed by these Inspectors was as follows:

Inspections under plumbing law	43,711
Inspections under tenement-house law (light and ventilation)	12,109
Inspection of lodging-houses (for permits)	7
Number of violations of plumbing laws reported	1,018
Number of violations of tenement-house law	417

DIVISION OF OFFENSIVE TRADES AND FOOD INSPECTION.

This division is in charge of a Chief Chemist and an Assistant Chemist, and is charged with the inspection of milk, fish, fruit and food supplies, the analytical work of the Department, and the inspection of all kinds of offensive trades.

Milk Inspection.

Among the many articles of human food, none plays so important a part as milk, especially for infants; consequently, much time and labor is devoted to the detection and prevention of its adulteration.

For the purpose of milk inspection the city is divided into seven districte, to each of which is assigned an Inspector and a Sanitary Officer, whose duty it is to inspect at least once a week the milk sold in each of the stores in his district, and from time to time to make early morning inspections at the several ferries and depots where milk is received in the city. These inspections are principally directed to two forms of adulteration:

First—The skimming of milk.

Second—The adulteration with water.

The tests applied are usually that of color, taste, smell and the lactometer. When the milk is found to be either skimmed of the cream or adulterated with water, samples are taken for analysis and the milk emptied into the street.

Inspections are made during the year of all cows kept within the limits of the city, to ascertain as to their healthy condition and the sanitary condition of the premises in which they are kept.

During the year the attention of the Board was called to the fact that milk was being sent to the city from a herd of cows supposed to be infected with tuberculosis, and the services of the Veterinarian and one of the Meat Inspectors was called in, and a careful inspection of all of the milch cows in the herd made, resulting in the quarantining of the entire herd.

Meat, Fish, Food and Fruit Inspection.

For the purpose of the above inspection there are employed in the Department four Meat, one Fish and two Fruit and Food Inspectors, upon whom a great responsibility rests, for this is a subject of grave importance to the public health.

During the year all stores where meat was sold were inspected to ascertain the quality of the meat sold, the cleanliness of the premises and whether or not the refrigerators discharged into properly trapped, sewer connected, water supplied open sinks, so as to prevent the escape of sewer gas. Tri-weekly inspections were made of all the public markets where meat was sold, and daily inspections of the public fish markets, to ascertain not only as to their sanitary condition, but as to the quality of the meat and fish offered for sale.

Daily inspections were made of the commission houses and stores where all kinds of fruit, vegetables and other food supplies were offered for sale, to ascertain the condition thereof.

The result of the work of the Inspectors charged with this duty, as compared with the previous year, was as follows:

	1890.	1891.
Number of inspections of meat and fish	66,309	67,929
Number of inspections of fruit and food	35,888	42,018
Number of pounds of meat and fish condemned and seized and sent to the offal dock	1,200,345	1,613,707
Number of pounds of fruit and food condemned and seized and sent to the offal dock	1,056,076	1,343,919

Offensive Trades.

During the year the Inspectors of Offensive Trades were engaged in the daily inspection of slaughter-houses and gas-works, the semi-weekly inspection of rendering and fertilizing establishments, and generally all manufacturing industries which were located in the more thickly settled part of the city, and which were not only offensive to smell, but because of their nature were deemed to be detrimental to health. Frequent inspections were made of establishments likely to become nuisances, and when necessary changes were caused to be made in the manner of conducting the business.

During the year 29,837 inspections were made as against 22,200 in 1890, resulting in 978 complaints as against 1,382 in 1890.

The report of the Chemist shows in detail the different classes of offensive trades inspected during the year.

CROTON WATER.

During the year the Chemist continued to make weekly analyses of Croton water, to ascertain whether or not impurities were therein contained which would be likely to affect the public health. Water for this purpose was taken from the hydrant at the corner of Mott and Bleecker streets.

The following analyses for the weeks ending June 5 and July 31, are a fair average of the condition of the Croton water to the latter date.

Analysis of Croton Water for Friday, June 5, 1891. Sample taken from Hydrant corner of Mott and Bleecker Streets.

	Results Expressed in Grains per U. S. Gallon of 231 Cubic Inches.	Results Expressed in Parts by Weight in One Hundred Thousand.
Appearance	Slightly turbid	Slightly turbid.
Color	Light yellow brown	Light yellow brown.
Odor (heated to 100° Fahr.)	Marshy	Marshy.
Chlorine in Chlorides	0.110	0.189.
Equivalent to Sodium Chloride	0.181	0.311.
Phosphates	None	None.
Nitrites	"	"
Nitrogen in Nitrates and Nitrites	0.0096	0.0165.
Free Ammonia	Trace	Trace.
Albuminoid Ammonia	0.0058	0.0100.
Hardness equivalent to Carbonate of Lime (Before boiling)	3.190	5.47.
Hardness equivalent to Carbonate of Lime (After boiling)	3.190	5.47.
Organic and Volatile (loss on ignition)	1.108	1.90.
Mineral matter (non-volatile)	4.432	7.60.
Total solids (by evaporation)	5.540	9.50.

Analysis of Croton Water for Friday, July 31, 1891. Sample taken from Hydrant corner of Mott and Bleecker Streets.

	Results Expressed in Grains per U. S. Gallon of 231 Cubic Inches.	Results Expressed in Parts by Weight in One Hundred Thousand.
Appearance	Slightly turbid	Slightly turbid.
Color	Yellowish brown	Yellowish brown.
Odor (heated to 100° Fahr.)	Marshy	Marshy.
Chlorine in Chlorides	0.110	0.189.
Equivalent to Sodium Chloride	0.181	0.311.
Phosphates	None	None.
Nitrites	"	"
Nitrogen in Nitrates and Nitrites	0.0072	0.0123.
Free Ammonia	Trace	Trace.
Albuminoid Ammonia	0.0087	0.0150.
Hardness equivalent to Carbonate of Lime (Before boiling)	2.484	4.26.
Hardness equivalent to Carbonate of Lime (After boiling)	2.484	4.26.
Organic and Volatile (loss on ignition)	0.933	1.60.
Mineral matter (non-volatile)	2.624	4.50.
Total solids (by evaporation)	3.557	6.10.

Remarks—Temperature at hydrant, 71 degrees Fahr.

The following analyses, made for the weeks ending August 7, 14, 21 and 28, disclosed the presence of nitrites, indicative of a marked deterioration in the sanitary quality of the water, and determined the Board to cause to be made a careful inspection of the Croton water-shed, which would lead to the discovery of the causes of the changed condition of the water:

Analysis of Croton Water for Friday, August 7, 1891. Sample taken from Hydrant corner of Mott and Bleecker Streets.

	Results Expressed in Grains per U. S. Gallon of 231 Cubic Inches.	Results Expressed in Parts by Weight in One Hundred Thousand.
Appearance	Turbid	Turbid.
Color	Yellowish brown	Yellowish brown.
Odor (heated to 100° Fahr.)	Marshy	Marshy.
Chlorine in Chlorides	0.110	0.189.
Equivalent to Sodium Chloride	0.181	0.311.
Phosphates	None	None.
Nitrites	Very faint trace	Very faint trace.
Nitrogen in Nitrates and Nitrites	0.0192	0.0329.
Free Ammonia	Trace	Trace.
Albuminoid Ammonia	0.0064	0.0111.
Hardness equivalent to Carbonate of Lime (Before boiling)	2.508	4.30.
Hardness equivalent to Carbonate of Lime (After boiling)	2.508	4.30.
Organic and Volatile (loss on ignition)	1.166	2.00.
Mineral matter (non-volatile)	2.508	4.30.
Total solids (by evaporation)	3.674	6.30.

Remarks—Temperature at hydrant, 71 degrees Fahr.

Analysis of Croton Water for Friday, August 14, 1891. Sample taken from Hydrant corner of Mott and Bleecker Streets.

	Results Expressed in Grains per U. S. Gallon of 231 Cubic Inches.	Results Expressed in Parts by Weight in One Hundred Thousand.
Appearance	Turbid	Turbid.
Color	Yellowish brown	Yellowish brown.
Odor (heated to 100° Fahr.)	Marshy	Marshy.
Chlorine in Chlorides	0.110	0.189.
Equivalent to Sodium Chloride	0.181	0.311.
Phosphates	None	None.
Nitrites	"	"
Nitrogen in Nitrates and Nitrites	0.0144	0.0247.
Free Ammonia	Trace	Trace.
Albuminoid Ammonia	0.0023	0.0040.
Hardness equivalent to Carbonate of Lime (Before boiling)	2.508	4.30.
Hardness equivalent to Carbonate of Lime (After boiling)	2.508	4.30.
Organic and Volatile (loss on ignition)	1.166	2.00.
Mineral matter (non-volatile)	2.683	4.60.
Total solids (by evaporation)	3.849	6.60.

Remarks—Temperature at hydrant, 72 degrees Fahr.

Analysis of Croton Water for Friday, August 21, 1891. Sample taken from Hydrant corner of Mott and Bleecker Streets.

	Results Expressed in Grains per U. S. Gallon of 231 Cubic Inches.	Results Expressed in Parts by Weight in One Hundred Thousand.
Appearance	Slightly turbid	Slightly turbid.
Color	Very light yellowish brown.	Very light yellowish brown.
Odor (heated to 100° Fahr.)	Faint marshy	Faint marshy.
Chlorine in Chlorides	0.120	0.206.
Equivalent to Sodium Chloride	0.198	0.339.
Phosphates	None	None.
Nitrites	Very faint trace	Very faint trace.
Nitrogen in Nitrates and Nitrites	0.0064	0.0111.
Free Ammonia	0.0009	0.0015.
Albuminoid Ammonia	0.0090	0.0145.
Hardness equivalent to Carbonate of Lime (Before boiling)	2.601	4.46.
Hardness equivalent to Carbonate of Lime (After boiling)	2.601	4.46.
Organic and Volatile (loss on ignition)	0.933	1.60.
Mineral matter (non-volatile)	3.324	5.70.
Total solids (by evaporation)	4.257	7.30.

Remarks—Temperature at hydrant, 76 degrees Fahr.

Analysis of Croton Water for Friday, August 28, 1891. Sample taken from Hydrant corner of Mott and Bleecker Streets.

	Results Expressed in Grains per U. S. Gallon of 231 Cubic Inches.	Results Expressed in Parts by Weight in One Hundred Thousand.
Appearance	Turbid	Turbid.
Color	Light yellowish brown	Light yellowish brown.
Odor (heated to 100° Fahr.)	Marshy	Marshy.
Chlorine in Chlorides	0.110	0.189.
Equivalent to Sodium Chloride	0.181	0.311.
Phosphates	None	None.
Nitrites	Very faint trace	Very faint trace.
Nitrogen in Nitrates and Nitrites	0.0186	0.0239.
Free Ammonia	0.0006	0.0010.
Albuminoid Ammonia	0.0069	0.0120.
Hardness equivalent to Carbonate of Lime: Before boiling	2.630	4.51.
Hardness equivalent to Carbonate of Lime: After boiling	2.630	4.51.
Organic and Volatile (loss on ignition)	1.458	2.50.
Mineral matter (non-volatile)	2.916	5.00.
Total solids (by evaporation)	4.374	7.50.

Remarks—Temperature at hydrant, 74 degrees Fahr.

This inspection was commenced early in August, and continued through until the latter part of September, and covered Sodom and Bog Brook Reservoirs, Middle Branch Reservoir, Boyd's Corners Reservoir, the east, middle and west branches of the Croton river below the reservoir, Lakes Gleneida and Gilead, and their tributaries, also Lake Mahopac, the Muscoot, Titicus and Cross rivers, and the Croton river from the junction of its branches to Croton Lake to the Croton Dam. Samples were taken for analysis at different points in the territory inspected.

Accompanying this will be found the Chemist's detailed report of the inspection, with a detailed memorandum of nuisances found to exist on the water-shed, and the result of more than eighty analyses that were made.

METEOROLOGY.

The mean temperature of the year as furnished by Daniel Draper, Ph. D. (in charge of the Meteorological Observatory at Central Park), was 58.80°, the mean reading of the barometer was 29.961, and the prevailing direction of the wind was west-northwest.

The quantity of rain that fell during the year amounted to 39.55 inches, the quantity of snow 17.37. Rain fell on 109 and snow on 9 different days, the total duration of rain being 30 days 9 hours and 25 minutes, and of snow 4 days 15 hours and 30 minutes.

DEAD ANIMALS AND OFFAL.

Dead animals are removed by the contractor, Thomas F. White, from the streets of the city to the offal dock at Thirty-seventh street, North river, and, with all offal which may be delivered at the same point, are conveyed thence to Barren Island for final disposition. The means of removal from the streets are by tightly covered wagons of improved construction, rendering the contents unobjectionable both to sight and smell. All night-soil collected by licensed scavengers is delivered at Rivington street, One Hundred and Fifty-seventh street and West Thirty-seventh street, on board of boats especially constructed for that purpose, and it is then conveyed by the same contractor to Barren Island for final disposition. The manner in which the night-soil is handled is unobjectionable, but in the near future this handling is likely to be dispensed with almost entirely, as, under orders issued by the Board, privy-vaults in this city south of the Harlem river will soon be abolished. It is proper here to note the fact that below the above point, by orders of the Board, they have been reduced from about ten thousand in 1885 to less than eight hundred at the close of the present year.

The number of dead animals removed from the streets, and the quantity of offal, etc., removed from the markets and slaughter-houses, by the contractor, during the year 1891, was:

Cats and dogs from streets	20,945	Boxes of offal	27,450
Horses	8,424	Boxes of fish	4,969
Dogs from public pound	7,301	Barrels of blood	3,208
Calves	3,029	Pounds of sausages	350
Quarters of veal	3,020	Hams	262
Barrels of poultry	1,004	Crates of grapes	235
Sheep	576	Boxes of tenderloin	71
Quarters of mutton	290	Sides of bacon	20
Goats	155	Barrels of sausages	19
Cows	122	Boxes of game	9
Colts	21	Steers	7
Mules	10	Barrels of game	6
Quarters of beef	74	Bulls	5
Hogs and pigs	55	Cases of game	3

VITAL STATISTICS.

The necessity of the law creating a Bureau of Records, in which is to be carefully collected and arranged a complete system of registration of births and marriages and deaths, must be apparent to all, not only from their use in furnishing valuable information for the investigation of the causes of diseases, but from their importance in matters pertaining to the civil and social condition and relations of the people. The chief vital statistics bearing upon the public health are the determination of the birth-rate and of the general death-rate, of deaths according to sex, age and disease, as to the whole of the city, and as to particular and special localities thereof.

Births.

During the past year there were filed for record 46,904 births, showing an increase over the year 1890 of 7,634, this number being not only very largely in excess of those returned in any former year, but also for the first time since the organization of the Department exceeded the number of deaths, notwithstanding the high mortality of the year. In the month of June a careful examination of the record of the deaths of children under six months of age was made, with a view of ascertaining whether certificates of their birth had been filed, resulting in developing the fact that quite a number of physicians and midwives had failed to make the returns required by law. Prosecutions were commenced and general notice given through the medium of circulars and the public press, resulting in an increase of registration commencing with the first week in July, which has continued through the balance of the year. While the above is extremely gratifying, and acknowledgments are due to the physicians and midwives who have so well responded to the requirements of the law, it must be confessed that the record is far from complete, and it is the intention of the Commissioners to use every means within their power to enforce upon physicians and midwives the necessity of complying strictly with the letter of the law in registering the same at the proper time.

The following table shows by comparison the number of births reported and recorded during the past six years:

1886	31,319	1888	36,136	1890	39,250
1887	34,023	1889	37,527	1891	46,904

Marriages.

During the year there were filed for record 15,764 marriages, showing an increase over the year 1890 of 772. This gives a marriage rate of 18.75 per cent., which is much higher than that of any country in Europe, and is believed to be nearly correct. The record of marriages takes notice only of such as are accompanied by some ceremony performed by one authorized by law to solemnize the same.

The following table shows by comparison the number of marriages reported and recorded during the past six years:

1886	12,216	1888	14,533	1890	14,992
1887	13,740	1889	14,400	1891	15,764

Deaths.

In comparison with the imperfect record of births, it is believed, owing to our rigid system of interments, that the record of deaths is as perfect as that of any city in the world.

WEEKLY REPORT.

With the beginning of the year an important change was made in the form of the weekly report, which up to that time had consisted merely of the statistics of births, marriages and deaths. Its scope was enlarged, so as to include a resumé of the work done during the week by all branches of the Department, and its form changed from a single sheet to a neat pamphlet, containing statistics which enable the reader to follow the rise or fall of the death-rate for three months previous, the increase or decrease in any locality of epidemics, the results of the hospital service, the inspection of old and new buildings, of foods and offensive trades, and of contagious diseases in men and animals, with an analysis of the Croton water, the meteorology of the week, and a brief account of the executive action of the Board.

These improvements in the weekly report have elicited hearty commendation from many sources, and have led to a similar modification of the reports of several other cities of the United States, which have indicated in this silent but expressive way an appreciation of their value and importance.

SUITS FOR ENFORCEMENT OF ORDERS.

In enforcing the orders issued by the Sanitary Superintendent and in interpreting sanitary laws with discreet judgment, the office of the Attorney continues to render valuable aid and assistance to the Board. In the majority of cases orders issued by the Board through the Sanitary Superintendent are complied with, but when there is a disposition to evade them the orders are referred to the Attorney, and a notice from him is usually sufficient to secure a prompt compliance under these circumstances.

Of 11,676 orders referred during the year by the Sanitary Superintendent to the Attorney for prosecution, 8,805 orders were complied with upon receipt of notice from him of his intention to commence suit.

The following statement shows in detail the work performed through the medium of this office during the year:

Number of orders received for prosecution	11,247	
Number of orders pending December 31, 1890	429	
		11,676
Attorney's notices issued on orders received in 1891	11,247	
Other Attorney's notices	3,851	
		15,098
Nuisances abated before suit	8,805	
Orders extended or in course of prosecution	436	
Number of civil actions commenced	2,435	
		11,676
The actions are classified as follows:		
For violation of sanitary ordinances	199	
For violation of tenement-house law	2,236	
		2,435
Civil actions pending December 31, 1890	208	
Actions commenced in 1891	2,435	
		2,643
Civil actions discontinued for cause (compliance with orders, etc.) by the Board of Health	1,914	
Judgments rendered in favor of Department	293	
Non-suits	....	
Action dismissed, non-service of summons	1	
Actions pending December 31, 1891	435	
		2,643

Disposition of Judgments.

Total number of judgments		293
Judgments opened by the several courts on payment of costs	60	
Judgments opened by the several courts without costs	80	
Judgments upon which execution has been issued	153	
		293
Executions issued		200
Judgments, criminal courts, violations sanitary ordinances		228
Moneys collected and paid to City Chamberlain		$540 00
Fines imposed in criminal courts		$5,122 00
Total fines, 1891		$5,122 00
As follows:		
Meat and fish	$80 00	
Milk fines	4,436 00	
Manure, swill, ashes nuisance, and plumbing	314 00	
Section 197, Sanitary Code, live fowls	197 00	
Lodging-house, cellar and overcrowding	45 00	
Decayed fruit	50 00	
Total		5,122 00

RECEIPTS AND EXPENDITURES.

During the year the receipts from various sources, all of which have been duly accounted for to the Comptroller and deposited with the Chamberlain, were as follows:

For searches and transcripts of the records	$5,524 25
Sale of vaccine virus	2,096 13
Amount collected in settlement of judgments in civil actions for the enforcement of the several sections of the Sanitary Code	542 00
Received from the United States Government for the care of emigrants (in the hospitals of this Department) who were suffering from contagious diseases at the time of their removal	5,136 00
Received from State of New York, for care of Corporal H. L. Beck, Seventy-fourth Regiment, N. G. S. N.Y.	79 00
In all the sum of	$13,377 38

The amount of money appropriated by the Board of Estimate and Apportionment, to be applied by the Health Department for the payment of salaries, disinfection, maintenance of Willard Parker, Reception and Riverside Hospitals, and for the general expenses of the Department, was $419,400. In addition to which the sum of $4,544.50, received from the United States Government (for the care of emigrants suffering from contagious diseases) from the State of New York, was placed to the credit of the Hospital Fund, and the sum of $5, for burial of deceased soldiers, was placed to the credit of the Fund for the Burial of Honorably Discharged Soldiers, etc.

Making in all	$424,620 00
There was expended the sum of	402,615 88
Leaving a balance of	$22,004 12

Herewith we append statement showing the amount of money appropriated and amounts expended during the year for specific purposes:

FUND FOR	AMOUNT APPROPRIATED.	ADDITIONAL APPROPRIATION.	TOTAL APPROPRIATION.	AMOUNT EXPENDED.	BALANCE.
Salaries	$223,400 00	.....	$223,400 00	$222,984 22	$415 78
Contingent Expenses	9,000 00	.....	9,000 00	8,889 94	110 06
Disinfection	13,000 00	†800 00	13,800 00	13,737 29	62 71
Law Expenses	2,000 00	.....	2,000 00	1,999 92	08
Sanitary Police	55,000 00	.....	55,000 00	55,000 00	.....
Removal of Night-soil, etc.	36,000 00	.....	36,000 00	36,000 00	.....
Night Medical Service	1,200 00	.....	1,200 00	1,200 00	.....
Rents	3,800 00	.....	3,800 00	3,800 00	.....
Hospitals	47,000 00	†5 215 00	51,415 00	50,044 51	1,370 49
Burials—Honorably Discharged Soldiers, Sailors or Marines	9,000 00	*5 00	9,005 00	8,960 00	45 00
Enumeration of Inhabitants of the City of New York	20,000 00	.....	20,000 00	.....	20,000 00
	$419,400 00	$5,220 00	$424,620 00	$402,615 88	$22,004 12

* Balance left over from 1890, available in 1891.

† Amount received for care and maintenance of sick immigrants at Riverside Hospital, North Brother Island, was $5,136.00, and $79 for care and maintenance of Corporal H. L. Beck, Seventy-fourth Regiment, N. G. S. N.Y., at the same place, making the sum of $5,215.00, less $800 transferred to Fund for Disinfection, making net increase of $4,415.00.

In conclusion, the Commissioners desire to acknowledge many official courtesies from other departments of the City Government, and to specially notice their prompt attention and efficient action upon reports from this Department of sanitary defects in the public property and municipal arrangements in their charge, and upon matters in connection with their public duties, directly or indirectly affecting the public health. Many reports of Sanitary Inspectors are forwarded weekly to the several city departments upon the condition of the streets, sewers, docks, public buildings, etc., suggesting the necessary changes and improvements, which receive due consideration and favorable action.

The Commissioners also desire to notice favorably the activity, fidelity and ability of the officers and employees of this Department in the performance of their important and often dangerous duties. To their faithful and devoted work is greatly due the successful administration of the Department and the important results accomplished.

Respectfully submitted,

CHARLES G. WILSON, President and Commissioner of Health.
JOSEPH D. BRYANT, M. D., Commissioner of Health.

HEALTH DEPARTMENT—SANITARY BUREAU,
NEW YORK, January 1, 1892.

General EMMONS CLARK, *Secretary:*

SIR—I have the honor to forward herewith the annual report of the work performed in the Sanitary Bureau for the year ending December 31, 1891.

During this year the Medical Sanitary Inspeciors were relieved of the duty of making inspections of the plumbing and drainage of houses where contagious diseases were reported and found, and this duty has since that time been very satisfactorily performed by the Lay Sanitary Inspectors and Sanitary Engineers. This change of duty has resulted in making the work of the Medical Sanitary Inspectors more directly professional, allowing them time to trace the source and course of the many communicable diseases reported. Thus has been accomplished that which former administrations have thought most desirable, and it is confidently expected that results will be obtained that will be of great value to the profession and public at large. The relief of the Medical Sanitary Inspectors from the work of inspection of plumbing and drainage has thrown increased labor upon the Lay Sanitary Inspectors and Engineers, oftentimes taking them into apartments where contagious disease exists. In no instance has there been the slightest inclination manifested on their part to shirk their duty, from fear of contracting the disease. The same fearlessness has characterized the work of the members of the Sanitary Company of Police. In the division having the oversight of the plumbing and drainage, light and ventilation of new buildings, 2,134 plans were presented during the year. The constant supervision of the houses embraced under these plans during their construction has kept the Inspectors fully occupied. During the year this division lost the services of Chief Inspector John C. Collins, who resigned after many years of faithful service in the Department.

FOOD INSPECTION.

As close and constant supervision is maintained over the food supply of the city as the limited number of Inspectors permits. During the year 96,377 inspections of milk were made, resulting in 193 arrests, and the collection of $4,416, which was turned into the City Treasury. Of fish, 498,480 pounds were seized; of meat and poultry, 1,115,277 pounds were seized, as unfit for consumption as food, 257,742 pounds of which was of the delicacy known as "bob veal."

The Meat Inspectors inspect the meat as it is slaughtered and hung in the various slaughter-houses, and condemn all that is unfit for human food. During the year a number of carcasses of tuberculous cows have been seized, and wherever the dairy from whence they came could be ascertained, an inspection of this dairy has been had by our Veterinarian, and in one instance an embargo was placed upon an entire herd of cows, which embargo was only raised after the slaughtering of the diseased cattle and a period of observation of the remainder. A daily inspection of slaughter-houses and many other prolific sources of nuisance has been made with the result of allowing the business to be conducted with the slightest possible offense. It has been the policy to seek to so control offensive trades that they may be conducted without offense in the city, rather than to drive them with their capital and employees to other localities, which would deprive the city of much of its material prosperity.

The chemical department is frequently called upon by citizens to make analyses of cases of suspected poisoning. Our chemical laboratory is not equipped for this purpose. The City should provide a public analyst, whose duty it should be to make analyses at the request of the District Attorney or Police Justices.

Analyses of Croton water have been made each week, and an exhaustive report of the Croton water-shed has been made, which report appears in this volume.

GAS-WORKS.

The illuminating-gas works of the city have been the subject of frequent and oftentimes just complaints. During the past summer one of these gas-works, after a prolonged hearing before the Board, was declared a public nuisance and the operation of its works ordered closed, but a sufficient time was allowed that company to make necessary changes in their plant. After which was done, the work ceased to be a nuisance, and the complaints relative thereto were withdrawn.

STEAM RAILROADS.

Many complaints have been made relative to the smoke and noise of operating the steam roads, both on the east and west sides of the city. Officers of the roads and citizen complainants have appeared before the Board, and much correspondence has taken place, with the final result of greatly lessening the cause of complaint as to the noise and smoke. The unnecessarily prolonged ringing of bells and sound of whistles have been stopped by orders of the railway officials, while the smoke nuisance has been much mitigated by the use of anthracite coal or coke on the yard engines, instead of bituminous coal, as was formerly exclusively used.

MANURE DUMPS.

The manure dumps have ceased to be a prolific source of complaint, as under no circumstances has any accumulation of manure been permitted within the built-up portion of the city. The manure carts, loaded and covered within the stable premises, are emptied directly upon the scows or floats and transported out of the city.

STABLES.

In no other direction has more progress been made than in the care of the 4,297 stables of this city. The use of sidewalk manure vaults has been entirely abandoned, and in only comparatively few instances are manure vaults permitted in rear yards, and this only when they are so situated as not to give offense, the principle being that no person has a right to maintain a nuisance which is objectionable in any degree to his neighbor. The keeping of manure within the stable in tightly covered receptacles, or the baling of the same, is recommended so that it may be removed without offense in properly covered carts. When it is remembered that there are 62,208 horses in the city, whose droppings, amounting to nearly five hundred tons daily, are to be cared for inoffensively, it may be readily seen that the question is one of magnitude. The substitution of cable traction for horses on surface car routes, is looked forward to as a valuable sanitary improvement, as it will not only banish the nuisance of car-horse stables, but will rid principal thoroughfares of an immense amount of filth and dust, which is oftentimes a cause of serious disease. There are a few cow stables within the city limits, chiefly in the annexed district. These are kept under frequent observation as to their cleanliness, and the animals are examined as to the existence of tuberculosis or other disease.

PRIVY-VAULTS.

The old time nuisance of the privy-vault has been nearly abolished. While in 1875, it was estimated that there were fifteen thousand vaults in the city, it is now thought that there are less than one thousand, and these are almost entirely in the annexed district, and where sewers are not yet constructed so as to permit of their abolishment. Those of us who were on duty then and now cannot fail to appreciate the improved conditions.

TENEMENT-HOUSES.

The inspection of the tenement-houses in this city has, as usual, largely occupied the attention of the Sanitary Bureau. There has been made the required semi-annual inspection by the Sanitary Police, resulting in the issuance of 16,108 orders directed chiefly in the line of cleanliness and purification of halls and apartments, yards and cellars, and the providing of proper and adequate receptacles for ashes and garbage.

The Sanitary Inspectors have inspected the tenement-houses of their district with especial reference to compliance with the State laws respecting the ventilation of halls and bedrooms, or ceilings of cellars, and the providing of a supply of water on each floor, as well as to the existence of stables upon the same lot with a tenement-house.

Special attention has been given to the condition of the plumbing and drainage of old tenement-houses, which has resulted in many orders for the providing of new iron house-drains in lieu of old defective earthenware drains, which were formerly allowed. Waste and soil pipes have been so universally provided with traps, and ventilated by extension through the roof in full calibre, that it would be a difficult task for one to find an untrapped and unventilated soil or waste pipe in the city. The application of the "peppermint test" is a most valuable adjunct to the Inspector, enabling him to detect defects in plumbing which would otherwise escape his notice.

Strenuous efforts have been made to prevent the overcrowding of tenement-houses. Night inspections have been constantly made, and where the number of occupants of apartments has been found to be too great to give each adult four hundred cubic feet and each child two hundred cubic feet of air space, an order has been issued to reduce the number of occupants. This order has been enforced whenever it has been found that the family were taking boarders or lodgers, but discretion has been used when it was found that only the family proper occupied the apartments, and then if it was ascertained that the income of the family warranted their seeking more commodious quarters, they were urged to do so.

During the year orders were issued to reduce the number of occupants in 1,704 cases, covering 3,307 persons. Reinspections are, of course, made to see that the orders are obeyed.

The occupation of cellars as human habitations, which was formerly so common in this city, has been practically abolished. The attention of this Bureau was called to the fact that many of the hotels of the city lodged their employees in cellars beneath the hotel. All such places were visited and orders issued that such use of the cellar should be abandoned. In every instance the orders of the Board were obeyed.

HOUSES UNFIT FOR HUMAN HABITATION.

It sometimes happens that a house is in litigation, or that the owner cannot be found, or if found, is so averse to making improvements as to render it necessary for the Sanitary Superintendent to make a personal inspection and to certify to the Board that the premises are in a condition detrimental to health and dangerous to life by reason of defective plumbing and drainage or want of repair. Upon the filing of such certificate the Board may declare the house unfit for human habitation and order it vacated within ten days. Such order of vacation is served upon the owner and occupants, as well as pasted on the front door of the house. If within the ten days the necessary repairs are not made or in progress the order is enforced. It rarely happens that before the expiration of the ten days the repairs are not commenced.

LODGING-HOUSES.

There are in this city 116 lodging-houses, with accommodations for 14,172 lodgers. They vary in price as they do in tone, from seven cents to twenty-five cents per night. For the former price is provided a hammock or a platform on which the unfortunate may seek to forget his misfortune, and in lieu of a blanket a hot fire is maintained. For twenty-five cents a room, made private by dwarf partitions, is secured, with a comfortable bed and sufficient clothing. All of these lodging-houses are granted a permit for a certain number of lodgers, the number to be determined by the air space, four hundred cubic feet being the minimum requirement for each adult person. (A few years ago there were in this city many lodging-houses in cellars and underground rooms, but these abominations have ceased to exist under the vigorous action of this Board.) A constant supervision of these houses has been maintained, with a view of keeping them in as good sanitary condition as possible and to prevent the keeping of more lodgers than is permitted in each room. The penalty for violation of the rules is a forfeiture of the permit.

PUBLIC SCHOOLS.

While the Health Department is not directly charged with the care of public schools or of public school buildings, it has investigated every complaint that has been made with reference thereto, and whenever any sanitary defect has been discovered, a report of the same has been forwarded to the Commissioners of Education, calling their attention to the defects found and the proper remedy. Upon the recommendation of the Medical Society of the County of New York, an inspection of the surroundings of every school building has been made, and an order has been issued in every case where a nuisance was discovered.

REMOVAL OF DEAD ANIMALS.

The removal of dead animals, offal and night-soil is still done under contract, at a cost to the City of thirty-six thousand dollars ($36,000) per annum. During the past year there have been very few complaints made that the work has not been properly done, and these few complaints have, upon investigation, been found excusable, having been caused by some error in the notification of the contractor. The dead animals, offal and night-soil are removed to Barren Island, where they are utilized, being chiefly converted into fertilizers by processes which are said by residents on the Long Island shore to be not always inoffensive.

RELATION TO OTHER DEPARTMENTS OF THE CITY GOVERNMENT.

The Sanitary Bureau has been frequently called upon to investigate nuisances which it has been powerless to abate except with the co-operation of some co-ordinate branch of the City Government. It has advised the building and repair of public sewers and culverts; the drainage of low lands; the repair of public buildings; the repair of defective street pavements; the improvement of public parks; the dredging of slips; the repair of docks; the cleaning of streets, and removal of ashes and garbage. In turn, other departments have, from time to time, requested this Bureau to detail from its experts those who should inspect and advise upon contemplated building operations. There has existed a mutual comity between the departments, that has been productive of much good.

During the past summer the Sanitary Superintendent was selected to represent the Health Department at the International Congress of Hygiene and Dermography, which was held in London, August 10 to 17. An exhibit of plans for new buildings, photographs of our hospitals, disinfecting station, ambulances, etc., together with sets of blanks and reports, was made, all of which attracted much attention and elicited the warm commendation of the Congress.

I have the honor to forward herewith detailed reports of the work performed in each division into which the Sanitary Bureau is divided.

All of which is respectfully submitted,

W. A. EWING, M. D., Sanitary Superintendent.

WORK PERFORMED BY THE SANITARY BUREAU FOR THE YEAR.

The following is a summary of the operations of the Sanitary Bureau, which is charged with the duty of inspecting and reporting, in proper form, all nuisances or causes of danger to the public health, with the execution of the orders of the Board, and with the care of contagious diseases.

The number of inspections and reinspections made by the Sanitary Inspectors, and the Sanitary Police, was 675,642, classified as follows:

By the Sanitary Inspectors	59,515
By the Sanitary Police Inspectors	298,090
By the Division of Contagious Diseases	26,456
By the Plumbing and Ventilation Inspectors	55,845
By the Milk Inspectors	96,377
By the Fruit and Food Inspectors	42,018
By the Meat and Fish Inspectors	67,929
By the Offensive Trades Inspectors	29,837
By the Assistant Chemists	21
Total	676,088

The number of complaints returned was		30,673
Classified as follows:		
By the Sanitary Inspectors	13,222	
By the Sanitary Police Inspectors	16,108	
By the Division of Contagious Diseases	1,065	
By the Division of Plumbing and Ventilation	5	
By the Milk Inspectors	13	
By the Fruit and Food Inspectors	2	
By the Meat and Fish Inspectors	4	
By the Offensive Trades Inspectors	254	
Total		30,673

The number of complaints received from citizens was 17,834, all of which were referred to the Sanitary Inspectors and the Sanitary Police, for investigation and report.

The Sanitary Superintendent during the same period, under instruction and authority of the Board, granted 2,863 permits to discharge cargoes, under proper vouchers from the Health Officer of the Port; 957 permits to scavengers to empty privies; 105 permits to land rags (in bulk) under bonds; and 205 miscellaneous permits under the Sanitary Code.

The following is a summary of the work performed by the Sanitary Inspectors:

Number of inspections and reinspections made	59,515
Number of complaints made	13,222

The following premises and locations have been inspected and reported upon by the Sanitary Inspectors, a summary of which is as follows:

Summary of Inspections.

Tenement-houses	16,448
Lodging-houses	146
Private dwellings	2,728
Other dwellings	1,418
Public buildings	115
Other buildings	781
Offensive trades buildings	32
Manufactories and workshops	490
Stores and warehouses	326
Stables	1,307
Sunken and vacant lots	523
Public highways	110
Receiving-basins and public sewers	180
Dumps and dumping grounds	13
Docks and piers	3
Slaughter-houses	534
Railroad cars	163
Gas-mains	11
Public vehicles	5
Water-courses	18
Ponds	1
Total	25,352
Total reinspections	34,163
Total inspections and reinspections made	59,515

Number of privy vaults ordered abolished	149
Number of cellars ordered to be made water-tight	239

The following is a summary of reports made by Sanitary Inspectors, with the result of inspections:

Nature of Complaint.	Cause for Complaint.	No Cause for Complaint.	Total.
Dangerous buildings	29	7	36
Offensive trades buildings	24	5	29
Public highways	25	2	27
Sunken and vacant lots	317	43	360
Public sewers and receiving-basins	148	19	167
Croton-water mains	5	1	6
Steam-heating mains	5	....	5
Gas-mains	14	8	22
Stables	717	138	855
Plumbing	7,407	2,513	9,920
Drainage	2,705	1,422	4,127
Ventilation	3,504	185	3,689
Light	71	55	126
Noise	1	9	10
Dangerous structures	408	22	430
Repairs needed	3,088	194	3,282
Cellars and basements	2,717	373	3,090
Privies and water-closets	6,404	516	6,920
Cesspools	404	18	422
Manure vaults	187	9	196
Croton water supply	586	180	766
Chimneys, dangerous and smoky	298	60	358
Streets, gutters and sidewalks	48	20	68
Filth	3,991	1,624	5,615
Cows and other animals	27		33
Fowls	49	6	55
No housekeepers	6	2	
Ash and garbage receptacles	38	1	39
Wells	35	1	36
Dumping grounds	3	...	3
Overcrowding	....	15	15
Ponds	....	1	1
Piers and docks	2	....	2
Aqueducts	1	....	1
Water-courses	11	2	13
Swamp lands	1	1	2
Marsh lands	....	1	1
Slaughter-houses	....	1	1
Totals	33,280	7,460	40,740

The whole number of citizens' complaints received from the Sanitary Bureau for investigation and report by the Sanitary Inspectors was	8,889
The whole number of complaints received from the Sanitary Officers for investigation and report by the Sanitary Inspectors was	1,529
The whole number of reports upon complaints, original and referred, which have been forwarded to the Sanitary Bureau for Board's orders was	12,560
The whole number of reports upon complaints, original and referred, which have been forwarded to the Sanitary Superintendent for action was	662
The whole number of original complaints made by the Inspectors and forwarded to the Sanitary Bureau for the Board's orders was	4,794
The whole number of citizens' complaints returned with a negative report was	2,560

The whole number of orders reinspected and forwarded to the Sanitary Bureau for the Board's action was 15,953, as follows: Attorney's orders, 8,083; orders complied with, 5,787; orders not complied with, 2,083.

The following is a summary of the work performed by the Sanitary Police:

Number of inspections and reinspections made	298,090
Number of complaints made	16,108
Number of complaints made and forwarded to the Sanitary Superintendent	10,956
Number of complaints made and forwarded to the Sanitary Inspectors	1,467
Number of complaints made on complaints of citizens and forwarded to the Sanitary Superintendent	3,342
Number of complaints made on overcrowding in tenements	1,810

The number of orders received, inspected and reported upon was 52,771, of which number, with 900 orders held for reinspection at date of last report, there have been returned to the Sanitary Superintendent:

Orders complied with	22,203
Orders not complied with	30,275
Orders held for reinspection, work progressing	1,193
Orders received from the Division of Contagious Diseases to stop work, close stores, and keep premises under observation	202
Relieved from observation	200
Under observation	5
Number of night inspections of tenement apartments to report overcrowding	54,643
Number of complaints of overcrowding made and forwarded for orders	1,745
Number of orders issued by the Board to reduce the occupants in overcrowded apartments	1,704
Number of orders complied with	1,417
Number of orders not complied with	225
Number of persons removed from overcrowded tenements	3,350
Number of notices of violations served	1,420
Number of letters delivered	9,835
Number of water-closets ordered in lieu of privy vaults	88
Number of ash receptacles removed from sidewalks	16,511
Number of scavenger permits collected and forwarded to the Sanitary Superintendent	819
Number of manure dump inspections	1,065
Number of lodging-house inspections	645
Number of tenement-houses inspected (general inspections)	104,372
Number of tenement-house inspections (under the law), house-to-house inspection	70,655
Number of slaughter-houses inspected	5,295
Number of stable inspections	12,385
Number of miscellaneous inspections and reinspections of other than tenement-houses	30,826
Number of notices served in relation to the burial of persons who died from contagious diseases	2,271
Number of postal cards transmitted to the Department of Street Cleaning	1,203

Nature of Complaints and Violations Reported by the Sanitary Police.

Nature of Complaints and Violations.	Complaints Made.	Nuisances Abated by Personal Effort.	Total.
Air shafts filthy, not covered or connected with house sewer	429	422	851
Areas filthy and dangerous	677	536	1,213
Ash-boxes in violation of Sanitary Code	497	16,704	17,201
Balusters and stairs dangerous	280	....	280
Cellars filthy	2,691	2,336	5,027
Cellars occupied as a place of dwelling or lodging	213	....	213
Cellar doors dangerous	53	....	53
Cellars not water-tight	122	....	122
Cellar ceilings not plastered	5,857	....	5,857
Cesspools	77	....	77
Chimneys dangerous or obstructed	209	....	209
Clothes poles dangerous	9	....	9
Cows, no permits	24	....	24
Docks filthy	1	44	45
Dogs, in violation of Sanitary Code	163	....	163
Drains obstructed or defective	242	....	242
Drains not provided with a running trap or fresh air inlet	13	....	13
Eaves gutters defective or dangerous	79	....	79
Fences dangerous	93	....	93
Fire-escapes filthy or obstructed	48	93	141
Flooring broken, dangerous or filthy	828	166	994
Fowls, no permit	252	2	254
Fresh air inlets obstructed	3	962	965
Goats, no permit	54	....	54
Hogs, no permit	2	....	2
Halls not properly ventilated	389	....	389
Hydrants out of repair	105	....	105
Ice-boxes defective	132	....	132
Ice-boxes not connected with a properly trapped Croton-supplied sink	754	....	754
Inside rooms not properly ventilated	979	....	979
Lodging-houses, no permit	14	....	14
Lodging-houses in tenements	1	....	1
Leaders defective, obstructed or dangerous	319	....	319
Manure-vaults in violation of Sanitary Code or no permit	391	....	391
No appliances to receive and distribute water on every floor of tenement	712	....	712
Pigeons kept	194	....	194
Pumps out of repair	58	....	58
Privy accommodations not sufficient	75	....	75
Privy-vaults full, offensive, or out of repair	126	....	126
Privy-houses filthy or out of repair	862	772	1,634
Premises not connected with street sewer	91	....	91
Rags stored in tenement-houses	223	....	223

NATURE OF COMPLAINTS AND VIOLATIONS.	COMPLAINTS MADE.	NUISANCES ABATED BY PERSONAL EFFORT.	TOTAL.
Rabbits kept	50	....	50
Receiving-basins full or offensive	358	....	358
Roofs leaking or filthy	835	105	940
Schools kept in tenement-houses	164	....	164
School sinks out of order	319	554	873
Stable yards filthy, not paved, graded or sewer connected	312	166	478
Stables in tenement-houses	1,117	7	1,124
Skylights broken	104	....	104
Stoops dangerous	66	2	68
Soil-pipes obstructed, defective or not ventilated	381	4	385
Sinks filthy, defective or not trapped	333	23	356
Sidewalks filthy, dangerous or not flagged	190	31	221
Street pavements dangerous	211	3	214
Streets or gutters filthy or obstructed	578	176	754
Street culverts obstructed	4	....	4
Smoke-houses in tenement-houses, no permit	2	....	2
Supply-pipes obstructed or defective	549	....	549
Trees dangerous or noxious	2	....	2
Tenement-houses overcrowded	69	....	69
Urinals not trapped, flushed or sewer connected	121	38	159
Vacant lots filthy, dangerous, not fenced or sewer connected	426	5	431
Vault covers or gratings dangerous	28	....	28
Water-closets out of repair or filthy	849	4	853
Water-closets not trapped or ventilated	12	....	12
Water-tanks filthy	134	43	177
Walls and ceilings filthy or out of repair	5,307	....	5,307
Waste-pipes obstructed, defective or not ventilated	304	....	304
Yards filthy, not properly graded or sewer connected	1,393	2,299	3,692
Yard pavements out of repair	238	....	238
Total	32,757	25,497	58,294

HEALTH DEPARTMENT—DIVISION OF CONTAGIOUS DISEASES,
NEW YORK, December 31, 1891.

To the Board of Health of the Health Department:

GENTLEMEN—I have the honor to present the following report of the organization and work of this division for the year 1891.

For the first quarter, the organization of the division remained as during the previous year, comprising:

Inspectors of Contagious Diseases (Diagnosticians).
Inspector of Institutions and Schools.
A Corps of Medical Sanitary Inspectors.
A Corps of Vaccinators.
A Disinfecting and Ambulance Corps, and
A Veterinary Surgeon.

Drs. Dillingham and Benedict were charged with the duty of diagnosis of all cases reported to the division as contagious.

Dr. M. Morris was assigned to the duty of making inspections of schools and institutions for children, reporting unsanitary conditions, supervising and enforcing isolation of children sick with contagious diseases, and compliance with chapter 633, Laws of 1886, in all chartered institutions.

During the summer he is detailed in charge of the Summer Corps of Physicians, and at times to perform other important sanitary duty outside of this division.

THE MEDICAL SANITARY INSPECTORS.

Eleven Medical Sanitary Inspectors were assigned to the same number of districts into which the city was divided. Their duties were to visit the houses in their respective districts where cases of contagious diseases had existed, carefully inspect the plumbing, ventilation and other surroundings having a recognized bearing upon the cases, or the general health of the occupants. Unsanitary conditions, when discovered, were reported upon blank forms prepared for the purpose, and forwarded through the Chief Inspector, for official action by the Board of Health. Isolation of contagious cases was supervised by them whenever such remained upon their own premises. Whenever a case of contagious disease, so diagnosed by the diagnosticians, could not be properly isolated upon its own premises, it was ordered to be removed to one of the Department hospitals, after which the District Medical Inspector was notified and made his official inspection of the premises.

The assignments and districts covering the city were as follows:

Dr. Blauvelt, from Battery to West Fourteenth street, all west of Broadway.
Dr. Aspel, from West Fourteenth street to West Fiftieth street, all west of Fifth avenue.
Dr. McManus, from West Fiftieth street to West One Hundred and Twenty-fifth street, all west of Fifth avenue.
Dr. Parsons, from West One Hundred and Twenty-fifth street to Harlem river, all west of Fifth avenue, and from Harlem river north to Kingsbridge, all west of Jerome avenue.
Dr. Doty, from Market street to Bowery, south to East river, also north from East Houston to East Fourteenth street, between Bowery and Third avenue, Broadway to East river.
Dr. McCallum, from east of Market street and Bowery to East Houston street, all east to East river.
Dr. Spencer, from East Houston to East Twenty-third street, all east of Fifth avenue.
Dr. Roberts, from East Twenty-third street to East Fifty-ninth street, all east of Fifth avenue.
Dr. Ambrose, from East Fifty-ninth street to East One Hundred and Tenth street, all east of Fifth avenue (resigned).
Dr. Mersereau, from East One Hundred and Tenth street to Harlem river, all east of Fifth avenue.
Dr. O'Byrne, all of Twenty-third and Twenty-fourth Wards, east of Jerome avenue.

DETAIL OF DUTIES.

Diagnosticians.

Immediately upon the receipt of a report at this office of any suspicious case of contagious disease, one of the diagnosticians was dispatched to examine, make his diagnosis, and notify the office at once, if in his judgment it was necessary, or the family and physician desired its removal to one of the Department hospitals.

Upon the receipt of this report, the Medical Sanitary Inspector of the district was notified of the case and location, upon which he proceeded to perform his special duties with reference thereto, as before described.

In the detail of their work, the Inspectors were also required to investigate, as far as possible, the sources of contagious diseases referred to them, and further, to investigate and report upon other diseases—not specifically classed as contagious—but such surrounding zymotic conditions, with a view to their modification or abatement, as might be found to have been the exciting causes. These were cerebro-spinal meningitis, malarial fever, croup, dysentery, tubercular meningitis, phthisis, tabes mesenterica, parotiditis, erysipelas, etc. Incidentally, they were required to forward notifications to the principals of all schools, of children who had been exposed to contagious diseases, upon postal cards prepared for the purpose. By a rule of the Board of Education, no such child could be readmitted to the school without presenting to the principal a certificate from this division that it was safe to readmit the child. This certificate was never issued until a specified time had elapsed after the recovery or death, and the premises had been fumigated and disinfected by a member of our Disinfecting Corps. A list of all children and their residences was daily also furnished to the Board of Education, where any case of contagious disease had existed, that it might also notify the various principals of the names and location of such cases. The various fresh air charities sending children to the country in the summer were also notified from this office of children with their addresses who had been exposed to contagious diseases, that the spread of infectious diseases might thus be prevented.

All of the corps of Medical Sanitary Inspectors connected with this division were required to make semi-weekly reports of their work, and to report personally at the office twice weekly.

Vaccination Service.

The permanent corps of Vaccinators, authorized by an act of the Legislature in 1874, of eight physicians, was continued with additions from time to time of temporary vaccinators. Seven were thus added, and the city divided into fifteen districts, one being assigned to each. This work varied somewhat during the year, in accordance with the seasons. From January to end of June the work continued incessantly. From July to the end of the first week in September it was suspended, successful vaccination being found incompatible during the heated term. It was again resumed from the second week in September to the end of the year. During the interregnum the members of this corps were transferred to the duties of the Summer Corps work.

In the detail of vaccination duty, several of the regular corps were especially assigned to school and institution vaccination, while the remainder did house-to-house vaccination in their respective districts. This work not only involved the performance of the operation of vaccination, but also required a revisit and examination of the arms, at the expiration of a week, to see whether the results were successful. If not, those proving abortive at the first trial were revaccinated, especially in all primary instances. A careful record of all this work, by date, name and residence, was required of each member of the corps, to be reported upon proper blanks to this office semi-weekly.

The method of performing the operation of vaccination is of special interest, and has been adopted in this division as the best that has yet been devised for this purpose. By this system, the great objection to vaccination heretofore presented has been entirely overcome. First, only pure carefully selected bovine vaccine virus is ever used. Second, the use only of new needles is allowed, a new (No. 5) needle being used for each operation, with a freshly charged quill for each. In this way all sources of contamination are absolutely avoided.

Each person being vaccinated with a new needle and a fresh quill point, both of which are at once thereafter destroyed, obviates any possibility of infection from using soiled instruments or blood contamination.

Each Vaccinator is provided with packages of new needles, and sufficient freshly charged quills from the office for daily use.

Summer Corps.

The work of the Summer Corps of Physicians was continued as in former years, during the months of July, August, and first week of September, under the supervision and charge of Inspector Dr. Moreau Morris, detailed for that duty.

Ambulance and Disinfecting Corps.

For the ambulance and disinfecting service the corps consisted of six men. Two of these were detailed successively for daily ambulance duty, while the others were detailed for disinfecting duties, each being assigned to specified districts.

The detail of these duties was as follows: Immediately upon receiving a report from one of the diagnosticians of any contagious case to be removed to hospital, a man was dispatched with an ambulance or coupé to take the case to the hospital, and also to disinfect the room immediately upon the removal of the patient therefrom. The disinfector in whose district the case occurred was thereafter required to proceed to the premises to fumigate and redisinfect the room, including the bedding, clothing or other articles that had probably become infected during the progress of the disease. In other cases where the patients were isolated, the disinfector called and left disinfectants with a printed code of instructions for the use of the family or nurse in charge of the case, with instructions to report when the case had finally recovered, that further fumigation and disinfection might be performed.

By this method prompt removal of the case to hospital was secured, and disinfection of premises and infected articles that had been exposed was performed.

The organization, with the exception of the Vaccination and Summer Corps services, was practically as above during the first quarter of the year.

REORGANIZATION.

On the first of April important changes were instituted in this division, especially in the details of the work of Medical Sanitary inspection, and the methods of ambulance and disinfection duties. The methods and duties of the other subdivisions remained unchanged.

The duty of inspecting plumbing and other unsanitary surroundings having recognized bearings upon the contagious cases reported, was now relegated to the Division of Plumbing and Ventilation. Several of the Medical Sanitary Inspectors were now transferred to that division.

This reorganization somewhat materially changed the methods of the work of the subdivisions in this service.

This division was now reapportioned and a special corps assigned to each subdivision. It was comprised as follows:

Medical Sanitary Inspectors' Corps.

An Inspector of Schools and Institutions with Children.
Vaccinating Corps.
Ambulance Corps.
Disinfecting Corps.
Summer Corps, and a
Veterinarian.

This reorganization provided the division with nine Medical Sanitary Inspectors. The two former diagnosticians were now merged and classed with the former. The city was redistricted into six sanitary districts, and one Inspector assigned to each.

Their duties were now, the work of diagnosis, and disposition of all contagious cases reported, determining the nature of the disease, their removal to hospital or isolation in their own premises, as the necessities of each case required. For this purpose there was a regular apportionment of days, each of five Inspectors being on duty for twenty-four hours in rotation below Ninety-second street. The other Inspector, Dr. O'Byrne, was charged with the duty of investigating all cases reported above Ninety-second street, including all district work of the district to which he was assigned. The regular district work was thus carried on daily, one Inspector being specially detailed to attend to the district work during the absence of the Inspector on diagnostic duty, from his regular district.

By this arrangement, reported cases of contagious disease were promptly attended to, while the regular district work went on uninterruptedly.

The district duty being now relieved of the inspection of plumbing and other correlative unsanitary conditions pertaining to the premises where contagious cases were located, was now confined to supervision of isolated cases, enforcing disinfection and investigating the sources or causes of the contagious diseases, and also the investigation of other zymotic diseases not specially classed among the active infective or contagious class. These included cerebro-spinal meningitis, malarial fever, croup, dysentery, tubercular meningitis, phthisis, tabes mesenterica and erysipelas, etc.

Dr. Moreau Morris, who had been assigned to the duty of general supervision of all institutions having the care of children and schools, was continued in that duty.

There was also one Inspector, Dr. Pardee, charged with the duty of cultivating bovine vaccine virus, and providing all the needed vaccine virus for the use of the subdivision of vaccination and for public sale.

A Veterinary Surgeon was also continued in the service of the division, whose duty it was to examine all cattle to be used for cultivating bovine vaccine, assuring their healthy condition, also to examine all cattle or other animals suspected of being diseased in the city.

The new apportionment of work for the Medical Sanitary Inspectors, the assignments and boundaries of districts were as follows:

Dr. Blauvelt's district, from Battery to West Fourteenth street, all west of Broadway.
Dr. Benedict's district, from West Fourteenth street to West Eighty-second street, all west of Fifth avenue.
Dr. Parsons' district, from West Eighty-second street, all west of Fifth avenue to Harlem river, thence north to Kingsbridge, all west of Jerome avenue.
Dr. Doty's district, from Canal to East Houston street, all east of Broadway, also East Houston to East Fourteenth street, between Bowery and Broadway.
Dr. Roberts' district, from East Houston to East Forty-second street, all east of Bowery to Fourteenth street, and from thence north, all east of Fifth avenue to East river.
Dr. Dillingham's district, from East Forty-second street to East Ninety-second street, all east of Fifth avenue to East river.
Dr. O'Byrne's district, from East Ninety-second street to Harlem river, all east of Fifth avenue, also all of the Twenty-third and Twenty-fourth Wards, all lying east of Jerome avenue.

The results of the work of the medical sanitary inspection for the year 1891 were as follows:

Contagious Diseases Reported and Referred to Inspectors.

Typhus fever	9	
Typhoid fever	1,342	
Scarlet fever	7,442	
Measles	11,980	
Diphtheria	4,874	
Small-pox	*21	
		25,668

* 12 were from Quarantine.

Other Diseases Reported and Referred to Inspectors.

Cerebro-spinal meningitis	119	
Varicella	296	
Malarial fever	113	
Croup	490	
Dysentery	49	
Tubercular meningitis	430	
Phthisis	93	
Tabes mesenterica	12	
Parotitis	11	
Erysipelas	25	
Rötheln	2	
Leprosy	3	
		6,334
Total		32,002
Total number of inspections made		26,585
Total number of general and special reports made		8,683

Detail of Work Performed by the Medical Sanitary Inspectors.

Number of cases visited	26,182
Number of houses inspected:	
Number of inspections of tenements	20,914
Number of inspections of private houses	2,313
Number of inspections of schools and institutions	1,561
Number of inspections of hotels	70
Number of inspections of miscellaneous	1,727
	26,585
Number of visits to physicians and undertakers to secure observance of sections of the Code relating to contagious diseases	364
Number of special diagnoses made	2,352
Number of school notices sent	14,507
Number of visits to Central office	1,592

VACCINATION.

One Inspector, Dr. Pardee, was specially charged with the care of the Vaccine Laboratory, provided by the Department for the cultivation and propagation of pure bovine vaccine.

For this purpose carefully selected young cattle, after being thoroughly examined by the Veterinarian as to their soundness and perfect freedom from any disease, were vaccinated by the Inspector, and after the expiration of the proper time of vesicle development, quills, ivory points, and glass tubes, specially prepared, were charged with the bovine virus, and provided for the use of the corps of Vaccinators, also for free distribution for gratuitous vaccination, by physicians not connected with the Department, and for public sale.

The subdivision of vaccination under the reorganization remained unchanged, there being regularly attached to it fifteen permanent members. This membership was increased from time to time, temporarily, as emergencies required.

The work proceeded regularly from January 1 to July 1, was then suspended until September 9, when it was again resumed.

The permanent members of this corps were transferred to the work of the Summer Corps during its operations from July 1 to September 9.

The summary of the work of this subdivision for the year was as follows:

Number of primary vaccinations performed	25,505
Number of re-vaccinations performed	84,132
Total	109,637
Visits to sick children	920
Reports forwarded to Chief Inspector	1,053

It will be observed that in comparison with the previous year the number of vaccinations was very largely increased, 92,047 being the total for the year 1890, while 109,637 was the total for the year 1891, an increase of 17,590 in primary and re-vaccinations, and an increase of 35,095 over the total vaccinations of 1889.

The number of animals vaccinated was	148
Quill slips prepared	192,200
Ivory points prepared	17,650
Capillary glass tubes filled	595

THE AMBULANCE CORPS.

The apportionment of the work of the Ambulance Corps was also materially modified, as follows:

Four men, Cooney, Dorian, Reynolds and Ward, were specially detailed for ambulance duty exclusively.

Two men were required to be on duty for twenty-four hours consecutively. This arrangement practically kept two on duty and two off duty for each twenty-four hours.

Their duties, in detail, were to remove patients so ordered by the Inspectors to hospitals, also to disinfect the premises immediately upon the removal of the patient. Immediately upon the receipt of the report from the Medical Sanitary Inspector on diagnosis, ordering the case to hospital, an ambulance man with vehicle (coupé or ambulance) proceeded and removed the case to hospital, disinfecting the premises immediately after the patient was removed therefrom. Subsequently the premises were redisinfected by a member of the regular Disinfecting Corps. Immediately upon discharging the patient into hospital, the ambulance or coupé was thoroughly disinfected before leaving the hospital, at the Disinfecting Depot, after which he returned to the office for further orders.

The following is the summary of the work performed by the Ambulance Corps:

Number of patients removed to hospital on account of contagious diseases	1,065
Number of dead bodies removed to Morgue	19

DISINFECTING CORPS.

The Disinfecting Corps consisted of ten men. One was especially detailed to the work of removing infected bodies, clothing or goods, from infected premises to the Disinfecting Depot and Crematory at Willard Parker Hospital. His duty was to perform the work of removal and to disinfect or cremate all infected articles brought to the depot as the occasion required.

An apparatus for these purposes had been constructed and arranged thereat, by the Department. The system or method prescribed for these purposes may in general terms be thus described: A large room was provided with a receiver, from the centre of which a solid partition divides the room into two sections, one for receiving all infected material, and the other for receiving all material to be preserved after its thorough disinfection. Into one end of the receiver the infected material is placed, and the method of disinfection proceeds as follows: Driving into it by means of a fan or blower, hot air, moist or dry, the infected articles are thoroughly permeated by a temperature of about 230° of Fahrenheit, destructive to all germ poisons. After the lapse of a suitable time, the opposite end of the receiver is opened and the articles, now thoroughly disinfected, are removed therefrom into the non-infected room, where they are assorted and subsequently returned to their owners. Such articles as are not to be disinfected by this process, are put into the crematory and destroyed.

This system secured the saving of much valuable material to their owners, in many instances unable to bear the loss, as well as the entire destruction of the infectious or contagious elements that otherwise would undoubtedly have been the means of spreading contagious disease.

The number of pieces of infected articles thus disinfected and returned to owners	37,979
The number destroyed by cremation	8,420
The number remaining on storage to be returned	50
Total	46,449

For the further purposes of disinfection and fumigation the city was divided into eight districts, one man being assigned to each.

His detail of duty was to redisinfect all premises in his district, from which any case of contagious disease had been removed to hospital, also to disinfect and fumigate after the recovery or death of any such patient, the premises, bedding, clothing, or articles, probably infected, where patients had been isolated.

One man, Mr. White, of this corps, was detailed at the office to supervise the work of these disinfectors, keep the records of the same, and for other clerical work as needed.

In accordance with rules adopted by the Board of Education, no children are readmitted to the public schools after they have been excluded therefrom on account of contagious disease, until they present a certificate from this Division that it is safe to readmit them. This certificate is not issued until a specified time has elapsed after the recovery or death of the infected cases, and all the measures of fumigation and disinfection have been performed by the members of the Disinfecting Corps.

This method practically assures the general safety of school children from direct infection through contact with other school children from infected premises.

The summary of the work of the Disinfecting Corps is as follows:

Work performed by Disinfectors.

Number of houses visited	30,147
Number of infected rooms fumigated	28,347
Number of infected rooms disinfected	96,208
Number of pieces of infected goods removed by Department for disinfection	35,519
Number of pieces of infected goods removed by owners for disinfection	10,930
Total	46,449
Number of pieces of infected goods disinfected at depot and returned to owners	37,979
Number of pieces destroyed	8,420
Number of pieces on hand	50
Total	46,449

Other work of disinfection at fires, where offensive conditions required such measures, in the disinfection of dead bodies of persons or animals, was performed upon such emergencies as the occasions required.

SUMMER CORPS.

This subdivision is put in operation only during the midsummer, in the months of July, August, and first week of September, and was under the charge of Dr. Moreau Morris as its chief.

For this work the tenement-house portions of the city were divided into fifty districts. Fifty medical men, a part of whom were transferred from the permanent corps of Vaccinators, and the balance temporarily appointed for this service, were assigned, one to each district.

The duties prescribed for the members of this corps, were to visit every domicile in each tenement-house in his district, selecting such, as far as practicable, housing the poorest classes. Sick children were sought out, and if without medical attendance, prescribed for, and medical and sanitary advice given.

Their further duties were also to observe all unsanitary domiciliary conditions, immediately surrounding and having a bearing upon the general health, to cause the removal or abatement of such minor, but equally important, nuisances from the premises, by personal appeals and efforts, or if not successful in these persuasive efforts, and the nuisances being of an aggravated character, to report the facts to the chief officer for further official action.

The results of this work are exhibited as follows:

Number of visits to houses	39,164
Number of visits to families therein	335,293
Number of revisits to patients under treatment	3,553
Total of visits and revisits	338,346
Number of sick treated for the following diseases:	
Diarrhœal	11,099
Dysenteric	293
Respiratory	2,474
Contagious	454
Miscellaneous	5,457
Making a total of cases treated of	19,777
Circulars for care of infants distributed	36,551
St. John's Guild tickets for floating hospital distributed	14,861
Nuisances abated by personal efforts	5,340
Complaints of other nuisances forwarded	360
Patients of other physicians found under treatment	6,949
Days of service rendered	2,358

VETERINARIAN.

The work performed by the Veterinarian is shown by the following statement:

Number of cases of contagious disease in animals visited	566
Number of inspections made	1,564
Number of head of cattle examined	34,721
Number of glandered horses destroyed	68
Number of post-mortems on cattle	146
Other miscellaneous work performed at the office:	
Certificates of vaccination issued	21,979
Prescriptions written	1,089
Prescriptions filled	1,089
Reports forwarded	1,818

Respectfully submitted,
CYRUS EDSON, M. D., Chief Inspector.

DIVISION OF PLUMBING AND VENTILATION,
December 31, 1891.

To the Board of Health of the Health Department of the City of New York:

GENTLEMEN—I have the honor to submit the following report of the work performed by the Inspectors of the Division of Plumbing and Ventilation, for the year ending December 31, 1891:

Number of inspections and reinspections made	55,845
Number of complaints made	5

Plumbing and Drainage of New Buildings.

Plans and specifications filed and reported upon	1,512
Buildings included in such plans and specifications	2,780
Tabled and disapproved plans re-examined and reported on	590
Total number of plans reported upon	2,112
Amendments to such plans examined and reported upon	1,144
Buildings included in such plans and amendments	6,947
Buildings reported begun	2,781
Buildings reported finished	2,674
Buildings reported in course of construction at date	2,478
Buildings reported projected at date in addition	624
Buildings reported containing plumbing at date	1,821
Number of violations of plumbing law issued	1,018
Buildings included in such notices	2,204
Violations reported removed	946
Buildings included in removed violations	1,941
Violation cases referred to Attorney	395
Inspections made under the plumbing law	43,711

Light and Ventilation of New Tenements.

Plans and specifications filed and reported upon	622
Tenements included in such plans and specifications	1,101
Tabled and disapproved plans re-examined and reported upon	219
Total number of plans reported upon	841
Amendments to such plans examined and reported upon	254
Tenements included in such plans and amendments	1,922
Tenements reported begun	1,211
Tenements reported finished	1,252
Tenements reported in course of construction at date	1,029
Tenements reported projected at date, in addition	153
Notices of violation of tenement-house law issued	417
Tenements included in such notices	732

Violations reported removed	347
Tenements included in removed violations	597
Violation cases referred to the Attorney	389
Inspections under the tenement-house law	12,109

Plumbing and Ventilation of Old Houses.

Citizens' complaints returned to the Sanitary Superintendent	5
Inspections and reinspections on citizens' complaints	18
Inspections in lodging-houses (permit cases)	7
Total inspections and reinspections of old houses	25

Recapitulation.

Total number of plans filed	2,134
Total number of original plans and amendments disapproved and tabled, and plans re-examined and reported on	4,341
Total number of violations of law removed, covering 2,538 houses	1,293
Total number of violations of tenement-house and plumbing law, covering 2,941 houses	1,440
Total number of all inspections and reinspections	55,845

Detailed Statement of Plans for Plumbing and Drainage and Light and Ventilation Filed and Reported on each Month.

	Light and Ventilation.			Plumbing and Drainage.			Totals.
	Plans.	Second Plans.	Amendments.	Plans.	Second Plans.	Amendments.	
January	52	4	20	92	1	79	248
February	56	4	16	92	2	59	229
March	60	2	35	132	3	117	349
April	96	2	9	156	2	54	319
May	75	2	22	155	5	100	359
June	50	6	28	161	4	102	351
July	39	12	27	173	3	96	350
August	27	4	10	119	3	75	238
September	30	1	12	91	3	100	237
October	46	..	12	112	1	98	269
November	41	6	26	108	5	134	320
December	50	2	37	121	..	130	340
Totals	622	45	254	1,512	32	1,144	3,609

Detailed Statement of the Number of Buildings for which Plans were Filed and Reported on for Plumbing and Drainage during the Year 1891, *arranged according to Wards.*

Description.	Wards.																								
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	Totals.
Tenements	..	..	..	2	1	6	42	8	34	11	24	401	22	..	3	32	45	11	38	47	12	122	75	5	941
Dwellings	..	..	..	1	1	..	1	..	..	2	..	455	1	..	..	..	..	3	14	3	5	277	256	226	1,245
Factories	..	..	..	1	1	..	4	3	1	1	3	4	6	1	1	3	2	3	7	4	1	2	4	..	52
Stables	..	..	..	..	2	..	3	..	..	..	1	31	..	3	1	5	2	5	11	..	5	11	8	6	94
Churches	..	..	..	..	..	1	1	..	..	..	1	11	..	..	..	..	3	..	1	1	..	4	2	..	25
Schools	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	2	1	3	..	..	5	1	1	16
Hotels	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	1	2	1	1	4	..	1	14
Warehouses	2	2	7	..	17	1	..	8	7	1	1	22	1	5	19	4	4	6	8	5	2	11	5	1	139
Club-houses	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	2	..	..	3
Institutions	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	2	..	1	..	..	..	4
Lodging-houses	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2
Hospitals	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	2
Office buildings	5	2	2	..	..	..	..	..	..	..	..	1	..	..	..	..	..	4	1	1	1	1	..	..	18
Banks	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	3
Theatres	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
Engine-houses	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	1	..	3
Markets	..	..	..	..	..	..	..	..	5	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	7
Court-houses	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1
Breweries	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2
Bath-houses	..	..	..	..	..	..	..	..	..	1	..	..	1	1	..	..	..	..	..	1	..	..	..	..	4
Railroad stations	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1	3
Electric-light stations	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Convents	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	2
Boiler-houses	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	1	..	..	..	..	..	..	3
Laboratories	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1
Laundries	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1
Depots	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1
Alterations	..	..	1	1	1	1	3	1	1	1	..	6	1	..	..	6	2	..	4	2	4	9	2	..	46
Green-houses	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1
Halls	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	2
Drainage	1	1	1	..	..	..	..	1	2	..	..	59	..	..	1	..	..	3	14	1	2	45	10	2	143
Totals	9	5	11	5	23	10	55	21	50	18	30	1,034	33	11	27	52	62	39	108	68	35	494	366	244	2,780

Detailed Statement as to Wards of the Number of Tenements for which Plans were Filed and Reported on, for Light and Ventilation, during the Year 1891, *Showing the Number of Tenement-houses in each Ward, Arranged According to the Number of Families per Floor.*

Ward.	Families per Floor.								Lodging-Houses.	Totals.	Alterations.	Grand Total.
	First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.				
First	..	1	..	..	..	..	..	..	..	1	..	1
Second	..	..	..	..	..	..	..	..	..	..	..	..
Third	..	..	..	..	..	..	..	..	..	..	..	..
Fourth	..	..	..	2	..	..	..	..	1	3	1	4
Fifth	..	..	1	..	..	..	..	..	..	1	1	2
Sixth	1	2	1	3	..	..	..	..	..	7	1	8
Seventh	6	8	2	31	1	2	..	..	..	50	9	59
Eighth	2	3	1	3	1	..	..	..	..	10	1	11
Ninth	1	16	8	9	3	..	..	..	..	37	..	37
Tenth	..	3	..	4	..	..	1	..	1	9	2	11
Eleventh	..	2	..	14	..	..	..	2	..	18	1	19
Twelfth	53	322	55	37	..	..	1	..	..	468	14	482

Ward.	Families per Floor.								Lodging-Houses.	Totals.	Alterations.	Grand Total.
	First.	Second.	Third.	Fourth.	Fifth.	Sixth.	Seventh.	Eighth.				
Thirteenth	..	1	1	18	1	2	1	..	..	24	2	26
Fourteenth	..	..	..	..	..	..	..	..	1	1	..	1
Fifteenth	1	3	1	1	..	..	..	..	..	6	1	7
Sixteenth	2	8	18	7	..	..	..	..	..	35	6	41
Seventeenth	1	2	6	24	1	1	..	..	..	35	2	37
Eighteenth	..	2	2	2	..	..	..	..	..	6	..	6
Nineteenth	5	14	5	9	..	..	1	..	..	34	7	41
Twentieth	1	8	20	12	..	..	..	..	..	41	4	45
Twenty-first	2	4	3	8	..	..	..	..	..	17	4	21
Twenty-second	24	59	8	37	1	..	..	..	..	129	7	136
Twenty-third	8	71	5	9	..	..	..	..	..	93	5	98
Twenty-fourth	8	..	..	..	..	..	..	..	..	8	..	8
Total	115	529	137	230	8	5	4	2	3	1,033	68	1,101

Respectfully submitted,
W. H. TITUS, Acting Chief Inspector.

HEALTH DEPARTMENT OF THE CITY OF NEW YORK,
SANITARY BUREAU,
NEW YORK, January 1, 1892.

W. A. EWING, M. D., *Sanitary Superintendent:*

SIR—I have the honor to submit the following report of the work performed by the Division of Foods, Chemical analyses, and Offensive Trades, for the year 1891:

Inspectors on duty	19
Sanitary Police on duty	8

SUMMARY.

Total number inspections	236,182
Total number analyses	1,631
Total number citizens' complaints received	1,007
Total number complaints made and returned to Sanitary Superintendent	263
Total number citizens' complaints held over since last report	28
Total number original complaints by Inspectors	104
Total number citizens' complaints returned for orders	159
Total number citizens' complaints returned as negative	773
Total number citizens' complaints under observation	75
Total number days at Court or Department	2,835
Total number arrests	193
Total number held on bail	177
Total number trials at Special and General Sessions	165
Total amount of fines	$4,416
Total number pounds of milk, fruit and foods, meat and fish, condemned and seized	2,961,164

MILK INSPECTORS.

Inspectors on duty	6
Number inspections	96,377
Number specimens examined	146,822
Number analyses of milk	2
Number citizens' complaints investigated	44
Number original complaints by Inspectors	0
Number days at Court or Department	626
Number special day inspections	152
Number early morning inspections	45
Number nights special work	74
Number quarts adulterated milk destroyed, 3,488 pounds	1,744
Number days in country or at Laboratory	426
Number arrests	186
Number held on bail	170
Number trials at Special or General Sessions	158
Amount of fines	$4,286

FRUIT AND FOOD INSPECTORS.

Inspectors on duty	2
Number of inspections	42,018
Number of pounds of fruit and food condemned	1,343,919
Number of pounds of fruit condemned	1,142,738
Number of pounds of vegetables	182,115
Number of pounds of canned goods	1,866
Number of pounds of confectionery	0
Number of pounds of groceries	17,200
Total	1,343,919

Number of citizens' complaints investigated	81
Number of original complaints by Inspectors	0
Number of days at Court or Department	333
Number of nights of special work	8
Number of arrests	2
Number held on bail	2
Number of trials at Special or General Sessions	2
Amount of fines	$50
Number of inspections of commission houses	869
Number of inspections of auction houses	951
Number of inspections of stores	12,562
Number of inspections of licensed venders	11,913
Number of inspections of vessels	877
Number of inspections of railroad depots	935
Number of inspections of stands	12,690
Number of inspections of markets	1,216
Number of inspections of ice-houses	5

CONDEMNED AND SEIZED.	POUNDS.	CONDEMNED AND SEIZED.	POUNDS.
Apples	51,280	Melons	489,955
Apricots	600	Macaroni	3,000
Assorted fruits	39,350	Nuts	2,825
Bananas	83,905	Oranges	205,487
Berries	160	Onions	150
Baking powder	1,280	Peaches	96,345
Beets	1,200	Potatoes	10,400
Beans	1,075	Pineapples	117,510
Cauliflowers	150	Pears	8,400
Canned goods	1,780	Persimmons	300
Cabbages	4,600	Plums	4,485
Cocoanuts	3,260	Preserves	100
Cherries	6,378	Strawberries	2,389
Corn starch	75	Stringed beans	150
Chestnuts	150	Sardines	86
Figs	220	Sprouts	17,480
Groceries	5,160	Tea	2,875
Grapes	25,299	Tomatoes	1,800
Lemons	12,625	Vegetables	141,635

MEAT AND FISH INSPECTORS.

Inspectors on duty	5
Number of inspections	67,929
Number of pounds of meat and fish condemned	1,613,757
Number of citizens' complaints investigated	151
Number of original complaints by Inspectors	2

Number of carcasses of beef condemned	63¾
Number of carcasses of veal condemned	4,314½
Number of carcasses of sheep condemned	805¼
Number of carcasses of hogs condemned	3,482
Total	8,665½

Number of pounds of beef condemned	45,135
Number of pounds of veal condemned	257,742
Number of pounds of sheep condemned	73,415
Number of pounds of hogs condemned	522,230
Total condemned	898,522

Number of pounds of fish condemned	498,480
Number of pounds of assorted meats condemned	17,173
Number of pounds of poultry condemned	198,247
Number of pounds of game condemned	1,335

Number of days at Court or Department	334
Number of nights of special work	29
Number of arrests	5
Number held on bail	5
Number of trials at Special or General Sessions	5
Amount of fines	$80

Number of inspections of fish stores	8,143
Number of inspections of stands	9,136
Number of inspections of licensed venders	8,503
Number of inspections of commission houses	10,565
Number of inspections of butcher shops	10,456
Number of inspections of slaughter-houses	11,686
Number of inspections of packing-houses	1,024
Number of inspections of ice-houses	2,713
Number of inspections of vessels	1,458
Number of inspections of railroad depots	1,641
Number of inspections of stockyards	564
Number of inspections of markets	2,037
Number of inspections of farms	2
Number of inspections of cow stables	1

ASSISTANT CHEMISTS.

Assistant Chemists on duty	3
Number of analyses	1,220
Number of experimental analyses	409
Number of lactometers tested	76
Number of thermometers tested	58
Number of citizens' complaints investigated	7
Number of days at Court or Department	458
Number of nights of special work	32
Number of inspections	21

The analyses made by the Assistant Chemists may be classified as follows:

	No. OF SAMPLES.		No. OF SAMPLES.
Alkanet	1	Iron sulphate	1
Annato	1	Licorice	1
Butter	8	Meat	27
Beer	3	Mace	1
Buttermilk	9	Medicines	5
Candies	26	Milk	359
Cloth	1	Milk, condensed	111
Canned goods	2	Milk, preserved	29
Cigars and cigarettes	3	Opium	1
Cleaning mixtures	1	Pepper	25
Cold cream	7	Quinine	3
Cod-liver oil preparations	1	Sewage	4
Chicory	1	Sardines	1
Coke and coal	6	Sugar	1
Coffee	1	Soups	1
Dyes	2	Sambar	1
Experimental	409	Spices	3
Foods	8	Tobacco	1
Food preservatives	1	Tea	2
Grapes	9	Vanilla	1
Ham	1	Water	544
Human muscle	1	Wall-paper	3
Ice cream	2	Wines	1
Incrustation	1		

The above were examined as follows:

Substance Examined.	Analyzed for—
Alkanet root	Poisonous metals.
Annato seed	"
Buttermilk	Tartaric acid.
Butter	Adulteration.
Coffee	Poisonous metals.
Cigars	"
Cigarettes	"
Cosmetics	"
Cod-liver oil preparations	Percentage of cod-liver oil.
Cloth, stained	Character of stain.
Coke	Percentage of sulphur.
Coal	Composition.
Canned goods	Poisonous metals, etc.
Candies	Terra alba.
"	Poisonous ingredients.
Clothing fabrics	"
Cleaning mixtures	Injurious ingredients.
Food preservatives	Composition.
Foods	Poisonous metals.
Ginger	"
Gum chicole	"
Gum senegal	"
Grapes	"
Ham	Trichina spiralis.
Ice cream	Poisonous metals.
Licorice	"
Milk	Adulteration.
Milk, condensed	"
Milk, preserved	"
Milk, from diseased animals	Composition.
Medicines, patent	"
Medicinal preparations	"
Malt liquors	"
"	Deleterious ingredients.
Mace	Poisonous metals.
Muscle, human	Trichina spiralis.
Opium	Character.
Pork	Trichina spiralis.
Pimento	Poisonous metals.
Pepper	"
Quinine	Poisonous metals.
Soap	"
Sulphate of iron	"
Sambar	"
Sewage	Composition.
Sugar	Adulteration.
Sausage	Trichina spiralis.
Tea	Composition.
"	Poisonous metals.
Tonka bean	"
Tamarinds	"
Tobacco	"
Vanilla essence	Injurious ingredients
Wall paper	Arsenic.
Water	Sanitary purity.
"	Character.
"	Metallic contamination.
"	Number of bacteria.
Water, distilled	Impurity.
Wines	Poisonous ingredients.

INSPECTORS OF OFFENSIVE TRADES.

Inspectors on duty	3
Number of inspections	29,837
Number of citizens' complaints investigated	724
Number of original complaints by Inspectors	102
Number of days at Court or Department	984
Number of nights of special work	226
Number of arrests	0
Number held on bail	0
Number of trials at Special or General Sessions	0
Amount of fines	0

The inspections made by the Inspectors of Offensive Trades may be classified as follows:

	Number of Inspections.		Number of Inspections.
Apartment-houses	3	Lamp-shade factories	3
Auction houses	7	Liquor stores	2
Asphalt factories	3	Markets	14
Ale vault	1	Manufacturing buildings	11
Aqueducts	4	Machine shops	16
Asylum	1	Macaroni factory	1
Bed factory	1	Moulding mills	2
Bakeries	52	Metal plating	3
Blacksmith shops	70	Mineral water factory	1
Bone yards	84	Mattress factories	4
Boiler factories	39	Milk depots	8
Box factories	389	Medicine factories	2
Breweries	84	Malt house	1
Butcher shops	25	Meat curing establishments	1
Brass band	1	Notion house	1
Bird cage factories	3	Offices	336
Brass works	1	Oil pipes	10
Bulkhead	1	Odors	6
Blacking factory	1	Odors (Hunter's Point)	1
Butter store	1	Offal docks	204
Bologna factory	1	Oxygen factories	2
Bottling works	2	Offal wagons	12
Cigar-box factory	1	Oil works	32
Cigar stores	3	Packing houses	409
Cigar factories	36	Piano playing	2
Candy factories	18	Pickle factories	20
Candle factories	12	Private houses	861
Calf head cleaning establishments	27	Printing houses	43
Carpenter shop	1	Provision houses	102
Cattle yards	1,009	Plumbing shops	4
Clothes cleaning establishments	242	Pumping engines	2
Coal yards	11	Public baths	4
Copper works	5	Piers	1,032
Cellars	7	Photograph gallery	1
Concrete works	2	Plaster mills	6
Cord factory	1	Paper mill	1
Cold storage warehouses	9	Pop-corn factory	1
Chemical works	8	Police stations	3
Chair factory	1	Pavement	1
Cocoanut factory	1	Ponds (Central Park)	8
Candy stand	1	Piano factories	2
Carpet cleaning establishments	14	Railroads	197
Chocolate factories	2	Railroad depots	2
Coffee mills	2	Restaurants	227
Cheese factories	11	Rubber works	6
Cabinet factories	27	Railroad, elevated	1
Clothing factories	2	Rag shops	46
Dumps (manure)	14	Roundhouses	63
Dumps (garbage)	27	Sausage factories	12
Dumps (earth)	9	Sawmills	339
Distilleries	6	Shooting gallery	1
Dogs barking	3	Sewers	129
Drug mill	1	Silk factories	13
Dynamos	13	Smelting works	73
Drug stores	18	Smoke-houses	1,194
Dye works	99	Slaughter-houses	14,060
Dry goods house	1	Slaughter-houses (for chickens)	4
Excavations	104	Snuff factory	1
Elevator apparatus	5	Soap factories	205
Elevator factories	2	Stables	125
Fat rendering establishments	1,100	Stone yards	13
Fertilizer machinery	103	Stores	255
Foundries	227	Steam exhaust-pipes	9
Fur stores	9	Steam-pipes	31
Fur dressing establishments	1	Schools	6
Factory smoke-pipes	4	Spice mills	28
Factory noises	20	Sash and blind factories	3
Furniture stores	68	Soda water	8
Flour mills	3	Storage warehouses	31
Flax mill	1	Subway pipes	59
Fish curing establishments	1	Skin dressing establishments	1
Ferry slips	2	Stone machines	9
Fruit stores	17	Steam engines	13
Fish stores	19	Streets	10
Fire	1	Silver plating establishments	1
Gas engines	43	Stove stores	5
Gas-houses	1,647	Sidewalks	5
Gas leaks in mains	175	Steam elevator	1
Gas leaks in pipes	69	Steamboat landing	1
Gas drip wells	2	Special inspections	16
Gas in houses	9	Sewing machine	1
Gas holders	22	Skating rink	1
Gas tanks	15	Tailor shops	2
Grocery stores	236	Tanneries	28
Gut-cleaning establishments	140	Tenement-houses	662
Glue drying establishments	6	Tripe factories	74
Grain drying establishments	2	Tinware factories	1
Glass works	1	Tobacco factories	5
Hog yards	202	Theatrical goods	1
Hospitals	14	Vinegar factories	6
Hydrants	3	Vender's wagons	93
Hide cellars	133	Vineyards	8
Hat stores	6	Vacant lots	6
Hair picking establishments	6	Varnish factories	4
Hotels	35	Water	18
Hammock factory	1	Water (wells)	11
Hydraulic press	1	Water (hydrants)	1
Ice machines	146	Water (Croton)	1,166
Junk shops	10	Water (tanks)	12
Kindling wood factories	10	Wire factories	12
Laboratories	3	Wool pulling establishments	8
Laundries	8	Warehouses	8
Leather factories	4	Wheelwright shops	16
Lime-kilns	97	Wood factories	8
Locomotives	48	Wood yards	11
Lodging-houses	2	Yards	3

ASSISTANT CHEMISTS.

The more important work performed by the Assistant Chemists during the year is as follows:

1st. *Examination of Water.*—As in the report for 1890, this work may be classified as follows:

(a) Determination of character.—Made on samples from damp or flooded cellars, to determine whether the sample submitted is Croton surface water, etc.

(b) Determination of metallic impurity.—Made on samples from tanks used for storage of Croton water on tenement and apartment houses, etc.

(c) Determination of sanitary purity.—This includes the regular weekly analyses of the Croton, analyses of a large number of extra samples of Croton taken at various points throughout the city during the summer and early fall, of samples taken on the Croton water-shed during August and September, in the course of the sanitary survey of that region, and of samples from wells on New York Island.

Bacteriological examinations of Croton water were also made during the latter part of the year.

Croton Water.—The results of the regular weekly analyses are given in Table No. 1, and are averaged for each month of the year. "Phosphates," "odor," "color," and "hardness after boiling" are omitted, for the reasons given in report for 1890.

Tables Nos. 2, 3, 4, 5 and 6 give results of analyses of samples taken weekly from various points throughout the city, during and subsequent to the sanitary survey of the Croton water-shed made during the summer. These analyses are given in detail.

A comparison of the yearly average of the regular weekly analyses with those of former years (see report for 1890) shows a continuance of the steady increase in "total solids," "mineral matter," and "hardness before boiling," previously noted. "Nitrogen in nitrates" has markedly decreased as compared with the average for 1890, while "chlorine in chlorides," "free ammonia," and "albuminoid ammonia" have increased (the latter to a considerable extent) and "nitrogen in nitrates" has made its appearance for the first time.

ANALYSES OF CROTON WATER FOR 1891.

TABLE NO. 1.—*Samples taken from Hydrant, corner of Bleecker and Mott or Mulberry Streets.*

Parts by weight in 100,000.

Month.	Temperature.	Appearance.	Chlorine in Chlorides.	Equivalent to Sodium Chloride.	Nitrogen in Nitrites.	Nitrogen in Nitrates.	Free Ammonia.	Albuminoid Ammonia.	Total Nitrogen.	Hardness before boiling, Equivalent to Carbonate of Lime.	Organic and Volatile (Loss on Ignition).	Mineral Matter (Non-volatile).	Total Solids (by evaporation).
January	35½°	Very slightly turbid	0.187	0.308	None.	0.0291	0.0007	0.0118	0.0394	3.88	1.64	5.40	7.04
February	35¾°	Slightly turbid	0.170	0.280	"	0.0294	0.0019	0.0079	0.0375	3.53	2.30	4.98	7.28
March	38½°	Somewhat turbid.	0.174	0.287	"	0.0322	0.0009	0.0093	0.0406	3.40	1.48	5.48	6.96
April	47¾°	Turbid	0.187	0.308	"	0.0268	Trace.	0.0106	0.0355	3.43	1.48	6.23	7.71
May	59¾°	Somewhat turbid.	0.192	0.317	"	0.0148	"	0.0130	0.0255	4.36	2.08	6.64	8.72
June	67½°	Slightly turbid	0.189	0.311	"	0.0134	"	0.0108	0.0223	4.96	2.08	7.50	9.58
July	70¼°	Somewhat turbid.	0.196	0.322	0.00002	0.0098	"	0.0125	0.0201	4.66	1.88	6.82	8.70
August	73¼°	Turbid	0.193	0.318	0.0001	0.0314	0.0006	0.0104	0.0406	4.39	2.03	4.90	6.93
September	70°	Slightly turbid	0.198	0.327	0.00006	0.0354	0.0013	0.0154	0.0492	4.51	2.30	5.18	7.48
October	61°	Very slightly turbid	0.208	0.343	0.00001	0.0301	0.0014	0.0105	0.0399	4.93	2.10	5.76	7.86
November	42°	Slightly turbid	0.237	0.390	None.	0.0333	0.0021	0.0086	0.0421	5.00	1.88	6.93	8.81
December	39°	Turbid	0.329	0.543	"	0.0323	0.0030	0.0131	0.0456	4.58	2.06	6.80	8.86
Average	53¼°		0.205	0.338	0.000015	0.0265	0.0010	0.0112	0.0366	4.30	1.94	6.05	7.99

Abbreviations used in the following tables:

t.—Turbid.
s. t.—Slightly turbid.
v. s. t.—Very slightly turbid.
v. t.—Very turbid.
y. b.—Yellowish brown.
l. y. b.—Light yellowish brown.
v. l. y. b.—Very light yellowish brown.
m.—Marshy.
f. m.—Faint marshy.
s. m.—Strong marshy.
v. f. m.—Very faint marshy.

TABLE NO. 2.—*Samples taken from Hydrant, corner of Bridge and State Streets.*

Parts by weight in 100,000.

	Date. Aug. 27.	Sept. 4.	Sept. 10.	Sept. 18.	Oct. 2.	Oct. 9.	Oct. 23.	Oct. 29.	Nov. 6.
Appearance	.....	v. s. t.	t.	v. s. t.	s. t.	s. t.	s. t.	s. t.	s. t.
Color	.....	l. y. b.	l. y. b.	l. y. b.	l. y. b.	v. l. y. b.	l. y. b.	l. y. b.	l. y. b.
Odor (heated to 100° Fahr.)	m.	f. m.	m.	f. m.	f. m.	f. m.	f. m.	f. m.	f. m.
Chlorine in Chlorides	0.180	0.206	0.228	0.210	0.210	0.210	0.228	0.228	0.245
Equivalent to Sodium Chloride	0.297	0.339	0.375	0.346	0.346	0.346	0.375	0.375	0.404
Phosphates	None.	None.	None.	None.	None.	None.	None.	None.	None.
Nitrogen in Nitrites	"	0.0001	Trace.	"	"	0.0001	"	"	.....
Nitrogen in Nitrates	0.0988	0.0659	0.0564	0.0317	0.0325	0.0165	0.0325	0.0329	.....
Free Ammonia	0.0005	Trace.	0.0015	0.0015	0.0005	Trace.	0.0005	Trace.	Trace.
Albuminoid Ammonia	0.0110	0.0140	0.0115	0.0105	0.0145	0.0180	0.0065	0.0105	0.0030
Hardness equivalent to Carbonate of Lime: Before boiling	4.51	4.40	4.30	4.51	5.66	5.13	5.87	5.66	5.87
Hardness equivalent to Carbonate of Lime: After boiling	4.51	4.30	4.30	4.51	5.66	5.13	5.87	5.66	5.87
Organic and Volatile (loss on ignition)	2.00	1.30	0.40	1.00	1.80	1.30	2.00	1.60	2.00
Mineral matter (non-volatile)	6.10	5.50	4.70	7.50	7.20	6.30	9.50	8.40	5.40
Total solids (by evaporation)	8.10	6.80	5.10	8.50	9.00	7.60	11.50	10.00	7.40

TABLE NO. 3.—*Samples taken from Hydrant, corner of Fifty-first Street and Fifth Avenue.*

Parts by weight in 100,000.

	Date. Sept. 4.	Sept. 11.	Sept. 19.	Oct. 2.	Oct. 8.	Oct. 23.	Oct. 29.	Nov. 6.
Appearance	s. t.	s. t.	v. s. t.	t.	s. t.	s. t.	s. t.	t.
Color	l. y. b.	l. y. b.	l. y. b.	y. b.	v. l. y. b.	v. l. y. b.	v. l. y. b.	l. y. b.
Odor (heated to 100° Fahr)	f. m.	f. m.	f. m.	f. m.	f. m.	f. m.	f. m.	f. m.
Chlorine in Chlorides	0.228	0.263	0.228	0.245	0.210	0.228	0.228	0.245
Equivalent to Sodium Chloride	0.375	0.433	0.375	0.404	0.346	0.375	0.375	0.404
Phosphates	None.	None.	None.	None.	None.	None.	None.	None.
Nitrogen in Nitrites	0.0003	0.0003	0.0001	0.0002	"	0.0002	"	.....
Nitrogen in Nitrates	0.0404	0.0589	0.0144	0.0461	0.0387	0.0329	0.0325	.....
Free Ammonia	0.0110	0.0085	0.0025	0.0040	0.0030	Trace.	0.0005	Trace.
Albuminoid Ammonia	0.0190	0.0150	0.0225	0.0230	0.0140	0.0120	0.0005	0.0070
Hardness equivalent to Carbonate of Lime: Before boiling	4.94	4.83	4.51	4.57	5.09	5.87	5.22	5.74
Hardness equivalent to Carbonate of Lime: After boiling	4.83	4.83	4.51	4.35	5.09	5.87	5.22	5.74
Organic and Volatile (loss or ignition)	3.00	2.30	2.20	3.00	1.80	1.50	1.00	2.00
Mineral matter (non-volatile)	6.00	5.30	5.50	6.70	6.40	10.00	5.50	5.50
Total solids (by evaporation)	9.00	7.60	7.70	9.70	8.20	11.50	6.50	7.50

TABLE NO. 4.—*Samples taken from Central Park Reservoir.*

Parts by weight in 100,000.

	DATE.						
	AUG. 27.	SEPT. 4.	SEPT. 11.	SEPT. 19.	OCT. 2.	OCT. 10.	OCT. 23.
Appearance	.....	t.	v. t.	s. t.	s. t.	s. t.	s. t.
Color	.....	l. y. b.	y. b.	v. l. y. b.	l. y. b.	l. y. b.	l. y. b.
Odor (heated to 100° Fahr.)	s. m.	f. m.	f. m.	s. m.	m.	m.	f. m.
Chlorine in Chlorides	0.189	0.473	0.263	0.245	0.263	0.210	0.245
Equivalent to Sodium Chloride	0.311	0.779	0.433	0.404	0.433	0.346	0.404
Phosphates	None.	None.	None.	None.	None.	None.	None.
Nitrogen in Nitrites	0.0003	0.0001	0.0001	0.0001	0.0002	0.0003	0.0003
Nitrogen in Nitrates	0.0152	0.0255	0.0815	0.0128	0.0313	0.0708	0.0325
Free Ammonia	0.0015	0.0190	0.0210	0.0045	0.0020	0.0040	0.0005
Albuminoid Ammonia	0.0210	0.0290	0.0315	0.0255	0.0180	0.0170	0.0185
Hardness equivalent to Carbonate of Lime: Before boiling	4.46	4.35	4.30	4.83	4.57	5.05	5.87
Hardness equivalent to Carbonate of Lime: After boiling	4.46	4.30	4.30	4.62	4.57	4.92	5.87
Organic and Volatile (loss on ignition)	2.20	1.90	2.00	2.70	1.80	2.30	1.70
Mineral matter (non-volatile)	4.70	6.10	6.50	5.10	6.20	5.50	8.30
Total solids (by evaporation)	6.90	8.00	8.50	7.80	8.00	7.80	10.00

TABLE NO. 5.—*Samples taken from Gate-house, One Hundred and Thirty fifth Street.*

Parts by weight in 100,000.

	DATE.						
	*AUG. 27.	SEPT. 4.	SEPT. 11.	SEPT. 19.	OCT. 3.	OCT. 10.	OCT. 23.
Appearance	.....	t.	s. t.	v. s. t.	t.	s. t.	s. t.
Color	.....	y. b.	y. b.	l. y. b.	y. b.	v. l. y. b.	v. l. y. b.
Odor (heated to 100° Fahr.)	v. f. m.	f. m.	f. m.	m.	m.	f. m.	f. m.
Chlorine in Chlorides	0.189	0.228	0.228	0.245	0.263	0.210	0.280
Equivalent to Sodium Chloride	0.311	0.375	0.375	0.404	0.433	0.346	0.462
Phosphates	None.	None.	None.	None.	None.	None.	None.
Nitrogen in Nitrites	0.0001	Trace.	Trace.	Trace.	0.0002	0.0003	0.0003
Nitrogen in Nitrates	0.0313	0.0366	0.0371	0.0399	0.0156	0.0556	0.0329
Free Ammonia	0.0020	0.0055	0.0050	0.0015	0.0010	0.0025	Trace.
Albuminoid Ammonia	0.0110	0.0360	0.0300	0.0215	0.0220	0.0165	0.0155
Hardness equivalent to Carbonate of Lime: Before boiling	4.40	5.37	5.10	4.62	4.65	5.00	5.66
Hardness equivalent to Carbonate of Lime: After boiling	4.29	5.37	4.99	4.62	4.57	5.00	5.66
Organic and Volatile (loss on ignition)	2.30	2.20	2.00	2.20	2.30	1.90	1.60
Mineral matter (non-volatile)	5.40	7.00	5.30	7.50	5.00	5.70	9.90
Total solids (by evaporation)	7.70	9.20	7.30	9 70	7.30	7.60	11.50

* One Hundred and Twenty-fifth street and Third avenue.

TABLE NO. 6.—*Samples taken from Forty-second Street Reservoir.*

Parts by weight in 100,000.

	DATE.						
	AUG. 27.	SEPT. 4.	SEPT. 11.	SEPT. 19.	OCT. 2.	OCT. 8.	OCT. 23.
Appearance	.....	v. t.	v. t.	s. t.	s. t.	s. t.	s. t.
Color	.....	l. y. b.	y. b.	l. y. b.	l. y. b.	v. l. y. b.	v. l. y. b.
Odor (heated to 100° Fahr.)	s. m.	f. m.	f. m.	m.	m.	f. m.	f. m.
Chlorine in Chlorides	0.189	0.219	0.228	0.245	0.245	0.210	0.228
Equivalent to Sodium Chloride	0.311	0.361	0.375	0.404	0.404	0.346	0.375
Phosphates	None.	None.	None.	None.	None.	None.	None.
Nitrogen in Nitrites	0.0003	0.0002	0.0001	0.0001	"	"	0.0003
Nitrogen in Nitrates	0.0244	0.0362	0.0342	0.0239	0.0124	0.0033	0.0325
Free Ammonia	0.0005	0.0160	0.0085	0.0010	0.0050	0.0060	0.0005
Albuminoid Ammonia	0.0210	0.0250	0.0245	0.0215	0.0260	0.0120	0.0095
Hardness equivalent to Carbonate of Lime: Before boiling	4.56	4.35	4.30	4.62	4.57	5.13	5.48
Hardness equivalent to Carbonate of Lime: After boiling	4.56	4.30	4.30	4.51	4.35	5.09	5.48
Organic and Volatile (loss on ignition)	1.50	1.10	1.00	2.00	3.20	1.80	1.60
Mineral matter (non-volatile)	5.80	5.11	6.00	4.90	6.30	6.50	7.90
Total solids (by evaporation)	7.30	6.20	7.00	6.90	9.50	8.30	9.50

Bacteriological Examinations.—Since December 1, 1891, in addition to the samples for chemical analysis, samples of Croton water have been taken weekly for bacteriological investigation. The number of living bacteria per cubic centimeter has been determined by counting the colonies in gelatin plate cultures made from these samples, with results as given below. Work on the separation and identification of the various forms of bacteria occurring in Croton water has been carried on at the same time, and is now in progress. This work, supplementing the chemical analyses, will prove of value as a help in determining the present sanitary quality of Croton water, and its deterioration or improvement from a sanitary standpoint as time goes on. To provide a proper basis for judgment as to the sanitary significance of the different species of bacteria found in Croton, it will be necessary to obtain and investigate samples taken on the water-shed itself, from lakes, springs, streams, etc. These samples should be of two classes, viz.: (a) from sources known to be contaminated with sewage, and (b) from sources known to be free from such contamination.

The investigations outlined above have been carried on at the "Carnegie Laboratory," the biological laboratory of the Bellevue Hospital Medical College, through the courtesy and with the kind assistance of Dr. Edward K. Dunham, Professor of Histology and Bacteriology in the college.

TABLE NO. 7.—*Number of Bacteria in Croton Water.*

Samples taken from hydrant corner of Bleecker and Mott streets.

DATE.	NUMBER OF LIVING BACTERIA PER CUBIC CENTIMETER.
December 4	1,826
" 11	1,859
" 18	4,597
" 24	2,130
" 31	11,203

Sanitary Survey of the Croton Water-shed.—During the months of August and September, 1891, accompanied by Assistant Chemist Beebe, a sanitary survey was made of the Croton water-shed, of which the following is a detailed report:

HEALTH DEPARTMENT OF THE CITY OF NEW YORK,
NEW YORK, November 15, 1891.

W. A. EWING, M. D., *Sanitary Superintendent:*

SIR—We have the honor to submit the following report of an inspection of the Croton water-shed during the months of August and September, 1891, together with the maps and charts relating thereto.

The analyses accompanying this report were made by Assistant Chemists Berry and Lederle, the more important determinations being duplicated. The maps and charts were prepared by Assistant Chemists Beebe and Berry.

INTRODUCTORY.

The Croton water-shed lies mainly in the State of New York, in Westchester and Putnam Counties, extending into the southern portion of Dutchess County, and, on the east, into the State of Connecticut, to a small extent. Above Croton Dam, at which point the old and new aqueducts supplying New York City with water originate, the area of the shed is, in round numbers, three hundred and thirty-nine square miles, with a length of about thirty-three miles, and an average width of about eleven miles. The West, Middle and East Branches of the Croton river rise in the southern portion of Dutchess County, about sixy-eight miles from the lower end of New York City, and unite to form the main river near the southern edge of Putnam County. From this point the river flows in a general southwesterly direction through Westchester County to Croton Dam, about forty miles north of the lower end of New York City, and thence into the Hudson river at Croton Point.

The main tributaries of the Croton river are as follows: On the east, the Titicus and Cross rivers and Kisco brook, the latter flowing into Croton Lake; on the west, the Muscoot river. Reservoirs "I," "G" and "E" are located in Putnam County, on the East, Middle and West Branches, respectively, and are now used for storage purposes, a portion of Reservoir "I" being still, however, in course of construction. Reservoirs "D," "A" and "M" are in course of construction on the West Branch, Muscoot river and Titicus river, respectively.

The rock of the water-shed is metamorphic in character, consisting principally of gneiss. Limestone, dolomite, micaceous and talcose slates, granite and serpentine exist in small amount, and there are several deposits of magnetic iron ore, notably at the Mahopac mines, near Lake Mahopac, Tilly Foster mine, on Middle Branch Reservoir ("G"), and the Croton magnetic iron mine, near the Middle Branch, below the reservoir. The surface soil is very porous in character, consisting largely of sand and gravel. Deposits of clay or "hard pan" are found to some extent, but usually at a considerable depth. The river-beds consist mainly of solid rock, or of gravelly deposits on a rock bottom. There are, however, a number of peat-like deposits on the water-shed, aggregating in all about two square miles, of which the largest, about five hundred acres in extent, is located on the East Branch of the Croton river, above Reservoir "I." A large number of swamps are also found, usually, however, small in extent; and it is to these and to the peat deposits that the "yellowish brown" color of Croton water is due.

The only *natural* contamination of the water on the water shed is that due to the swamps and peat deposits noted above, and to the growth and decay of vegetation in and near the various streams, etc. With these exceptions, water from sources uncontaminated by animal refuse is of excellent quality, being low in mineral matter and chlorides and very "soft" in character.

The following table, compiled from data furnished by the Department of Public Works, gives the annual flow of the Croton river in gallons, the flow in inches over the entire water-shed, the annual rain-fall, and the flow of river in per cent. of rain-fall.

The figures for the rain-fall are those obtained by observations at Boyd's Corners Reservoir ("E"), the rain-fall at this point being considered a fair average of that over the entire shed.

For the present year, the only figures obtainable are those giving the rain-fall in inches to November 1.

YEAR.	FLOW OF RIVER, IN GALLONS.	FLOW OF RIVER, IN INCHES, OVER ENTIRE WATER-SHED.	RAIN-FALL, IN INCHES.	FLOW OF RIVER, IN PER CENT. OF RAIN-FALL.
1880	91,117,423,000	15.32	38.52	40
1881	119,926,645,000	20.16	46.33	44
1882	150,833,641,000	25.35	55.20	46
1883	94,876,593,000	15.95	43.15	37
1884	151,180,907,000	25.41	53.71	47
1885	115,903,402,000	19.48	45.99	42
1886	132 294 573,000	22.24	47.59	47
1887	167,826,600,000	28.38	61.63	46
1888	224,943,000,000	37.81	63.51	59
1889	203,647,000,000	34.22	54.50	63
1890	164,756,000,000	27.46	54.44	50
1891	.....	.....	*38.70	..

* To November 1.

SCOPE OF THE INSPECTION.

The territory covered by inspection was as follows: Sodom and Bog Brook Reservoirs (Double Reservoir "I"), Middle Branch Reservoir ("G"), Boyd's Corners Reservoir ("E"), the East, Middle and West Branches of the Croton river below the reservoirs, Lakes Gleneida and Gilead, and the tributaries to all of the above. Up to this point, the inspection was practically complete, including all tributaries, even the smallest. The inspection continued with Lake Mahopac, the Muscoot, Titicus and Cross rivers, the Croton river from the junction of its branches to its entrance into Croton Lake, and the lake itself, to Croton Dam. In this latter portion of the work, tributaries were inspected only at points, where the road following the river bank or lake shore crossed a tributary. In the case of Kisco brook, a tributary to Croton Lake, whose branches drain the towns of Mount Kisco and Newcastle, these branches were inspected. That portion of the water-shed lying north of the reservoirs was not inspected.

An important feature of the work was the collection of samples of water for analysis throughout the territory inspected. Samples were taken from the inlet and outlet of each of the reservoirs and lakes, and from their main tributaries, and in the case of Croton Lake, from all of its tributaries, large or small, which drained inhabited territory, except in several instances where the brooks had run dry. Samples were also taken from the rivers at frequent intervals, from points above and below towns or villages through which the river flowed, and from the main tributaries, near their outlets. In the cases of Kisco brook, whose branches drain the towns of Newcastle and Mount Kisco, as stated above, and a small tributary to the Croton river, which drains the town of Golden's Bridge, samples were taken above and below the towns.

During the time occupied by our inspection, the amount of rain-fall on the water-shed was exceedingly small, and an especially favorable opportunity was therefore afforded to secure samples comparable one with another. The only natural cause by which the relative composition of samples could be affected, even when taken at the extreme limits of the time occupied by inspection, was the concentration of impurities, through the gradual diminution in bulk of the various streams, etc.

SOURCES OF PROBABLE CONTAMINATION—DETAILED ENUMERATION.

The following is a detailed enumeration of the sources of probable contamination discovered on that portion of the water-shed covered by our inspection. The numbers in the second column refer to the maps accompanying this report. In the case of tributaries to rivers, lakes, reservoirs,

etc., the inspections are numbered from the farthest point up the stream covered by inspection, down to its junction with the main river, etc. In the fifth column an asterisk (*) indicates that the special source of contamination noted is on the water's edge, or on the edge of a precipitous bank above the water. In the latter case, the approximate height of the bank is given under the head of "Remarks." When the height of the bank is noted, a measurement given in the fifth column indicates the horizontal distance of the source of contamination noted from the water's edge, and not from the edge of the bank, unless special mention is made under "Remarks." In the case of reservoirs, measurements are given from high-water mark.

Dwellings or privies, provided with drain-pipes discharging directly into any water-course, are tabulated as on the water's edge. Stables are included under the term "barn" in the enumeration. This item is used as a designation for a building in which horses or cattle are housed, and not for one in which hay, grain, etc., is stored.

Before each group of inspections there is given a general description of the water-courses, reservoirs, etc., inspected, mention being made of those localities where the sources of probable contamination are most abundant. Appended to each group is a classification of the sources of contamination, according to character and distance from the water's edge. In order to avoid complexity in these classifications, blacksmith and wheelwright shops are classed as "factories," and house-drains and wash-houses as "dwellings."

Nuisances which, in our judgment, are so situated as not to be probable sources of contamination, are not included in the report.

The maps accompanying the report were prepared from the map of the Croton water-shed, made in 1889 for the Commissioners of the New Aqueduct, by W. E. Worthen. Probable sources of contamination are inserted at points determined by our inspections. The scale to which the maps are drawn is not sufficiently large to permit of the exact location of nuisances thereon, so far as distance from the water's edge is concerned, but in other respects they are accurate.

Double Reservoir "I," including Sodom and Bog Brook Reservoirs and the East Branch of the Croton River below the Reservoir, with their Tributaries.

Reservoir "I."—This reservoir is located in Putnam County, near the eastern limit of the water-shed, and about two miles east of the town of Brewster. It consists of two basins—Sodom Reservoir and Bog Brook Reservoir—connected by a tunnel. The combined drainage area is 77 square miles, of which that portion drained by Sodom Reservoir is much the larger. Bog Brook Reservoir will, when completed, serve practically as an overflow from Sodom Reservoir, thus largely increasing the storage capacity, which latter is estimated at nine billion gallons. At the time of our inspection, Sodom Reservoir only was in use. The small village of Milltown is located at its northeastern extemity. The main feeder of the reservoir is the East Branch of the Croton river, which enters it at Milltown. A large brook, Peach Lake outlet, enters the reservoir from the south.

Since July 15, 1891, fifty million gallons of water have been drawn from this reservoir daily, or one-third of the entire supply carried by the Old and New Aqueducts to New York City.

The water from the reservoir is aerated by passing through a fountain at the base of the dam. At this point a strong odor of sulphureted hydrogen was noted, indicating that the water of the reservoir contained vegetable organic matter in a state of decay. Most of the odor of sulphureted hydrogen is removed from the water by its aeration at the fountain. A considerable growth of weeds was noted at a number of places on the banks of the reservoir, between high-water mark and the present water-level. We were informed by a number of the prominent citizens of Brewster that the bottom and banks of the reservoir were not thoroughly cleared of vegetable growth before flooding; also that the sites of a number of privies, several barns and stables, and the quarters occupied by the laborers engaged in building the reservoir, were not cleaned out before the latter was flooded.

East Branch of the Croton River.—From the fountain at Sodom Reservoir this stream flows first northerly for a short distance, and then in a general southwesterly direction to its junction with the Middle and West Branches at Croton Falls, about six miles below the reservoir. It passes through the towns of Sodom (Southeast Centre), Brewster and Croton Falls. Its only tributary of importance below the reservoir is Tonetta brook, which flows through and drains the western portion of Brewster, and joins the river at the southwest extremity of the town. This brook is practically the public sewer of that portion of the town through which it flows, as will be seen from the record of inspections below. The configuration of the land is such that the general drainage of Sodom and Brewster is towards the river, and the same may be said of Croton Falls.

A cemetery is located near the south bank of the river, opposite Brewster, but at such a distance as not to be a probable source of contamination.

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Aug. 19	1	Sodom Reservoir, north side, at Division Engineer's Office	Privy	*	Loose stone vault, full, overflowed at high water. City property.
" 19	2	Sodom Reservoir, north side, at cement-testing house	"	*	Loose stone vault. City property.
" 19	3	Sodom Reservoir, north side	Barn	500	Open drain runs alongside barn to reservoir.
" 19	4	Sodom Reservoir, north side, at Assistant Engineer's Office	Privy	200	Uncemented earth vault. City property.
" 19	4	Sodom Reservoir, north side, at Assistant Engineer's Office	Barn	200	City property.
" 19	5	Sodom Reservoir, north side. Barnum Estate	Privy	50	Uncemented earth vault. City property.
" 19	6	Small tributary from east, entering Sodom Reservoir at Milltown Bridge, northeast end of reservoir	Two privies	*	Uncemented earth vault; schoolhouse privies.
" 19	6	Small tributary from east, entering Sodom Reservoir at Milltown Bridge, northeast end of reservoir	Barn	*	
" 19	6	Small tributary from east, entering Sodom Reservoir at Milltown Bridge, northeast end of reservoir	Poultry-house	*	
" 19	6	Small tributary from East, entering Sodom Reservoir at Milltown Bridge, northeast end of reservoir	Privy	*	Wooden box vault, in good condition.
" 19	7	Sodom Reservoir, north shore, near northwest end	Dwelling	500	On open drain running to reservoir down steep slope.
" 19	7	Sodom Reservoir, north shore, near northwest end	Pig-pen	500	On open drain running to reservoir down steep slope.
" 19	8	Bog Brook Reservoir, north end	Privy	60	Uncemented earth vault.
" 19	8	" "	Barn	60	Both barn and privy on edge of gully, through which small brook runs into reservoir.
" 19	9	Sodom Reservoir, south side	Privy	50	Uncemented earth vault. City property.
" 19	9	" "	Barnyard	50	City property.
" 19	9	" "	Barn	*	Now unused; manure scattered about. City property.
" 20	10	East Branch Croton river, north bank, between Sodom Dam and spillway	Dwelling	50	Quarters of workmen employed on reservoir. Bank fifty feet high; garbage refuse thrown out on bank. City property.
" 20	11	East Branch, south bank, just below spillway	Privy	85	Uncemented earth vault.
" 20	11	East Branch, south bank, just below spillway	Dwelling	60	Slops thrown out.
" 20	12	East Branch, north bank, at Sodom Village	Privy	75	Cemented stone vault.
" 20	12	East Branch, north bank, at Sodom Village	Pig-pen	75	Unoccupied, but dirty.
" 20	13	East Branch, north bank, at Sodom Village	Manure heap	28	Very large.
" 20	13	East Branch, north bank, at Sodom Village	Barn	25	Eighteen horses stabled in barn.
" 20	14	East Branch, north bank, at Sodom Village	Privy	37	Uncemented earth vault.
" 20	14	East Branch, north bank, at Sodom Village	Dwelling	50	Kitchen drain-pipe discharges on steep bank thirty feet from water.
" 20	15	East Branch, south bank, at Sodom Village	"	40	Slops thrown out on bank. Hotel and saloon.
" 20	15	East Branch, south bank, at Sodom Village	Privy	70	Loose stone vault.
" 20	15	East Branch, south bank, at Sodom Village	Barn	60	
" 20	16	East Branch, north bank, at Sodom Village	Garbage heap	*	Clothing washed on bank at this point.
" 20	17	East Branch, north bank, at Sodom Village	Two privies	85	Uncemented earth vault, full.
" 20	18	East Branch, north bank, at Sodom Village	Manure and garbage heap	*	
" 20	19	Small tributary from south, near New York and New England Railroad	Poultry-house	35	Unoccupied but dirty; brook dried up.
" 20	20	East Branch, south bank, near condensed milk factory	Manure heap	100	Large heap.
" 20	21	East Branch, south bank, above second bridge from dam	Factory	*	New York Condensed Milk Co. Washings from factory run into river; privies located directly over river; now used as urinals only.
" 20	22	East Branch, north bank, below second bridge from dam	Dwelling	*	Kitchen drain-pipe discharges into river.
" 20	23	Tributary from north, flows to the east of Brewster	Barnyard	*	Brook runs directly through yard; water of same filthy.
" 20	23	Tributary from north, flows to the east of Brewster	Poultry yard	*	Brook runs directly through yard; water of same filthy.
" 20	24	East Branch, north bank, southeast of Brewster	Pig-pen	35	
" 20	24	East Branch, north bank, southeast of Brewster	Privy	40	Uncemented earth vault.
" 20	24	East Branch, north bank, southeast of Brewster	Garbage heap	*	
" 20	25	East Branch, north bank, southeast of Brewster	"	*	
" 20	26	East Branch, south bank, southeast of Brewster	Poultry yard	*	
" 20	26	East Branch, south bank, southeast of Brewster	Privy	40	Loose stone vault.
" 20	27	Small tributary from south, enters river southeast of Brewster	Barn	*	Brook flows through barnyard.
" 20	28	Small tributary from north, enters river southeast of Brewster	Privy	*	Uncemented earth vault. Brook dry, except near river.
" 20	29	East Branch, north bank, south of Brewster	"	60	Uncemented earth vault.
" 20	29	East Branch, north bank, south of Brewster	Poultry-house	60	
" 20	30	East Branch, north bank, south of Brewster	Two poultry yards	250	On open drain running to river.
" 20	30	East Branch, north bank, south of Brewster	Pig-pen	250	" "
" 20	31	East Branch, north bank, south of Brewster	Privy	50	Cemented stone vault. On steep slope.
" 20	31	East Branch, north bank, south of Brewster	Poultry-house	50	On steep slope.
" 20	32	East Branch, north bank, south of Brewster	Two dwellings	*	Precipitous bank, fifty feet high; garbage and refuse thrown down bank.
" 20	32	East Branch, north bank, south of Brewster	Privy	*	Precipitous bank, fifty feet high. Cemented stone vault.
" 20	33	East Branch, north bank, south of Brewster	Garbage heap	*	Precipitous bank, fifty feet high.
" 20	33	East Branch, north bank, south of Brewster	Privy	10	Precipitous bank, fifty feet high measurement from edge of bank; loose stone vault.
" 21	34	Tonetta brook, tributary from north, flows through west of Brewster	Horse shed	50	East bank.
" 21	34	Tonetta brook, tributary from north, flows through west of Brewster	Two privies	80	Loose stone vault. East bank.
" 21	35	Tonetta brook, tributary from north, flows through west of Brewster	Privy	80	" "
" 21	35	Tonetta brook, tributary from north, flows through west of Brewster	Barnyard	80	East bank.
" 21	36	Tonetta brook, tributary from north, flows through west of Brewster	Blacksmith shop	*	Built directly over brook.
" 21	37	Tonetta brook, tributary from north, flows through west of Brewster	Barn	10	East bank.
" 21	38	Tonetta brook, tributary from north, flows through west of Brewster	Privy	*	Uncemented earth vault. West bank
" 21	38	Tonetta brook, tributary from north, flows through west of Brewster	Dwelling	*	Built directly over brook.
" 21	39	Tonetta brook, tributary from north, flows through west of Brewster	Privy	*	Uncemented earth vault. West bank.
" 21	39	Tonetta brook, tributary from north, flows through west of Brewster	Dwelling	*	Slops thrown out. East bank.
" 21	40	Tonetta brook, tributary from north, flows through west of Brewster	Two privies	*	Cemented stone vaults; in Harlem Railroad Depot, directly over brook.
" 21	41	Tonetta brook, tributary from north, flows through west of Brewster	Business block	*	Ten houses, including Brewster House, east of Harlem Railroad depot; sewer-pipes from same discharge into brook.
" 21	42	Tonetta brook, tributary from north, flows through west of Brewster	Bank	*	Sewer-pipe from same discharges into brook; water-closets said to be unused.
" 21	43	Tonetta brook, tributary from north, flows through west of Brewster	Business block	*	Six houses, southeast of Harlem Railroad depot; sewer-pipes from same discharge into brook.
" 21	44	Tonetta brook, tributary from north, flows through west of Brewster	Garbage heap	*	Below culvert, southeast of Harlem Railroad depot; apparently the town dump.
" 21	45	Tonetta brook, tributary from north, flows through west of Brewster	Barn	75	Manure scattered about. East bank.
" 21	46	Tonetta brook, tributary from north, flows through west of Brewster	Poultry-house	20	East bank.
" 21	46	Tonetta brook, tributary from north, flows through west of Brewster	Privy	20	Uncemented earth vault. East bank.
" 21	47	Tonetta brook, tributary from north, flows through west of Brewster	Poultry-house	10	East bank.
" 21	47	Tonetta brook, tributary from north, flows through west of Brewster	Privy	10	Uncemented earth vault. East bank.
" 21	48	Tonetta brook, tributary from north, flows through west of Brewster	"	45	Loose stone vault. East bank.
" 21	49	Tonetta brook, tributary from north, flows through west of Brewster	Dwelling	30	Slops thrown out. East bank.
" 21	49	Tonetta brook, tributary from north, flows through west of Brewster	Privy	*	Uncemented earth vault. West bank.
" 21	50	East Branch, south bank, southwest end of Brewster	Barn	200	Open drain runs through barnyard to river.
" 21	51	East Branch, south bank, at Thomasville	Dwelling	80	Bank forty feet high; slops and garbage thrown down bank.
" 21	52	East Branch, south bank, at Thomasville	Privy	60	Bank thirty feet high. Uncemented earth vault, filthy.
" 21	53	East Branch, south bank, at Thomasville	"	50	Bank twenty-five feet high. Uncemented earth vault.
" 21	54	East Branch, south bank, at Thomasville	"	*	Bank ten feet high. No vault; excrement oozing down bank; garbage scattered about.
" 21	55	East Branch, south bank, at Thomasville	"	60	Bank ten feet high. Uncemented earth vault.
" 21	56	East Branch, south bank, at Thomasville	Barn	*	Bank ten feet high; manure scattered about; old tin cans, etc., thrown into river.
" 21	56	East Branch, south bank, at Thomasville	Privy	100	Uncemented earth vault.
" 21	56	East Branch, south bank, at Thomasville	Pig-pen	35	
" 21	56	East Branch, south bank, at Thomasville	Poultry-house	25	
" 21	57	East Branch, north bank, at Thomasville	Privy	60	Uncemented earth vault. Garbage scattered on water's edge.
" 21	58	East Branch, south bank	"	*	Uncemented earth vault.
" 21	58	" "	Three garbage heaps	*	

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Aug. 21	59	East Branch, south bank	Privy	45	Uncemented earth vault.
" 21	60	" "	"	*	Uncemented earth vault; partly overhangs the water.
" 21	61	" "	"	20	Uncemented earth vault.
" 21	61	" "	Barn	*	
" 21	62	East Branch, south bank, about one-half mile below Brewster	Privy	100	Locked, could not examine.
" 21	62	East Branch, south bank, about one-half mile below Brewster	Poultry-house	100	"
" 21	63	East Branch, south bank, about three-fourths mile below Brewster	Privy	*	Uncemented earth vault.
" 21	63	East Branch, south bank, about three-fourths mile below Brewster	Two garbage heaps.	*	
" 21	64	East Branch, south bank, about three-fourths mile below Brewster	Poultry yards	20	
" 21	64	East Branch, south bank, about three-fourths mile below Brewster	Pig-pen	20	
" 21	64	East Branch, south bank, about three-fourths mile below Brewster	Barn	20	
" 21	64	East Branch, south bank, about three-fourths mile below Brewster	Pig-pen	30	
" 21	65	East Branch, south bank, about three-fourths mile below Brewster	Slaughter-house	10	Yard extends to water's edge; very filthy; ground soaked with blood and offal.
" 27	66	East Branch, south bank, about one-fourth mile above first dam	Dwelling	70	Slops thrown out; steep slope.
" 27	66	East Branch, south bank, about one-fourth mile above first dam	Barn	70	Steep slope.
" 27	66	East Branch, south bank, about one-fourth mile above first dam	Privy	50	Uncemented earth vault. Steep slope.
" 27	67	East Branch, north bank, at second dam	Machine shop	*	Employs twenty-five hands. Washings run into the river; privies seventy feet from water, cemented stone vaults in hole blasted out of solid rock; no drain from same to river.
" 27	68	East Branch, south bank, at third dam	Brass foundry	*	Employs fifteen hands. Washings run into river; privies forty feet from water, tight iron box vaults, frequently cleansed.
" 27	68	East Branch, south bank, at third dam	Urinal	15	At brass foundry; bed of sand two and one-half feet thick, frequently renewed.
" 27	68	East Branch, south bank, at third dam	Barn	*	At brass foundry; very clean, floor of hard earth, stalls paved with wood.
" 27	68	East Branch, south bank, at third dam	Manure heap	40	At brass foundry; frequently removed.
" 27	69	East Branch, south bank, north of Harlem Railroad bridge	Barn	600	On open drain running to river.
" 27	70	East Branch, south bank, near fourth dam	Privy	65	Uncemented earth vault. Refuse scattered about.
" 27	71	East Branch, south bank, near fourth dam	"	50	Cemented stone vault.
" 27	72	East Branch, south bank, near fourth dam	Dwelling	70	Slops thrown into open drain running to river.
" 27	73	East Branch, south bank, at Village of Croton Falls	"	10	Slops thrown out.
" 27	73	East Branch, south bank, at Village of Croton Falls	Privy	80	Uncemented earth vault.
" 27	73	East Branch, south bank, at Village of Croton Falls	Poultry yard	10	
" 27	74	East Branch, south bank, at Village of Croton Falls	Dwelling	*	Slops thrown out. Located between race and river.
" 27	74	East Branch, south bank, at Village of Croton Falls	Privy	10	Cemented stone vault. Located between race and river.
" 27	75	East Branch, south bank, at Village of Croton Falls	"	15	Cemented stone vault.
" 27	76	East Branch, north bank, at Village of Croton Falls	Poultry-house	35	Large number of fowls kept. Premises generally clean; hen manure gathered up.
" 27	76	East Branch, north bank, at Village of Croton Falls	Privy	20	Wooden box vault.
" 27	77	East Branch, north bank, at Village of Croton Falls	Horse shed	30	Much manure in shed.
" 27	77	East Branch, north bank, at Village of Croton Falls	Barn	30	
" 27	77	East Branch, north bank, at Village of Croton Falls	Manure heap	30	
" 27	78	East Branch, north bank, at Village of Croton Falls	Privy	60	Uncemented earth vault
" 27	78	East Branch, north bank, at Village of Croton Falls	Poultry yard	20	Number of fowls kept.
" 28	79	East Branch, south bank, at Village of Croton Falls	Barn	85	
" 28	79	East Branch, south bank, at Village of Croton Falls	Manure heap	85	
" 28	79	East Branch, south bank, at Village of Croton Falls	Privy	95	Cemented stone vault; slops and garbage thrown alongside.
" 28	80	East Branch, north bank, at Village of Croton Falls	"	*	Cemented stone vault, open at back; ashes thrown in occasionally.
" 28	81	East Branch, north bank, at Village of Croton Falls	Poultry-house	*	
" 28	81	East Branch, north bank, at Village of Croton Falls	Garbage heap	*	
" 28	81	East Branch, north bank, at Village of Croton Falls	Privy	*	Cemented stone vault.
" 28	82	East Branch, south bank, at Village of Croton Falls	Blacksmith shop	10	From edge of precipitous bank, forty feet high; refuse thrown down bank.
" 28	82	East Branch, south bank, at Village of Croton Falls	Privy	*	No vault; precipitous bank, forty feet high.
" 28	83	East Branch, south bank, at Village of Croton Falls	House-drain	*	Empties over edge of precipitous bank, forty feet high.
" 28	83	East Branch, south bank, at Village of Croton Falls	Garbage heap	*	Scattered down precipitous bank, forty feet high. Very large; apparently a town dump.
" 28	84	East Branch, south bank, at Village of Croton Falls	Barn	*	Precipitous bank, forty feet high; manure scattered around.
" 28	85	East Branch, south bank, at Village of Croton Falls	Two privies	40	From edge of precipitous bank, forty feet high. Uncemented earth vaults.
" 28	86	East Branch, south bank, at Village of Croton Falls	Poultry yard	*	On edge of precipitous bank, forty feet high.
" 28	87	East Branch, south bank, at Village of Croton Falls	Old shed	*	On edge of precipitous bank, forty feet high; washing done in same and slops thrown down bank
" 28	88	East Branch, south bank, at Village of Croton Falls	Two privies	*	No vaults. Precipitous bank, forty feet high; premises generally filthy.
" 28	88	East Branch, south bank, at Village of Croton Falls	House-drain	*	Empties over edge of precipitous bank, forty feet high.
" 28	89	East Branch, south bank, at Village of Croton Falls	Barn	*	On edge of precipitous bank, forty feet high.
" 28	89	East Branch, south bank, at Village of Croton Falls	Manure heap	*	On edge of precipitous bank, forty feet high; scattered halfway down bank.
" 28	90	East Branch, south bank, at Village of Croton Falls	Horse shed	25	From edge of precipitous bank, forty feet high; considerable manure in same.
" 28	91	East Branch, south bank, at Village of Croton Falls	Garbage heap	*	On edge of precipitous bank, forty feet high. Very large; apparently a town dump.
" 28	92	East Branch, south bank, at Village of Croton Falls	Barn	*	On edge of precipitous bank, forty feet high. Manure scattered down bank.
" 28	93	East Branch, south bank, at Village of Croton Falls	Manure pit	*	On side of precipitous bank, forty feet high; very filthy.

NOTE.—Nos. 82 to 93, inclusive, occupy a space of about 200 yards along the river bank. The bank for this distance is littered with filth of every description, in several places at least three feet thick.

Summary.	On Water's Edge.	Within 25 Feet.	25 to 50 Feet.	50 to 100 Feet.	100 to 150 Feet.	150 to 250 Feet.	Over 250 Feet.	Total.
Cemeteries	..	..	..	..	..	..	..	..
Privies: No vaults	4	1	..	..	..	..	..	5
Privies: Uncemented earth vaults	10	3	9	12	..	1	..	35
Privies: Loose stone vaults	2	1	2	4	..	..	..	9
Privies: Cemented stone vaults	4	2	2	3	..	..	..	11
Privies: Wooden box vaults	1	1	..	..	..	..	..	2
Privies: total								62
Cesspools: Loose stone vaults	..	..	..	..	..	..	..	..
Cesspools: Cemented stone vaults	..	..	..	..	..	..	..	..
Cesspools: total								..
Slaughter-houses	..	1	..	..	..	..	..	1
Pig-pens	..	1	3	1	..	1	1	7
Poultry houses and yards	5	6	3	2	..	2	..	18
Manure heaps	3	..	3	2	..	..	..	8
Garbage heaps	14	..	..	..	..	..	..	14
Barns and barnyards	10	3	2	6	..	2	2	25
Horse and cattle sheds	..	1	2	..	..	..	..	3
Dwellings	26	1	4	4	..	..	1	36
Factories	4	1	..	..	..	..	..	5
Total	83	22	30	34	..	6	4	179

Reservoir "G," or Middle Branch Reservoir, and the Middle Branch of the Croton River Below the Reservoir, with their Tributaries.

Reservoir "G"—This reservoir is located about midway between the eastern and western limits of the water-shed, one mile west of Brewster, and has a drainage area of about twenty-one square miles, and a capacity of nearly five billion gallons. It has been in use twelve years. A small portion of the northern end of the reservoir is separated from the main body by the dump of the Tilly Foster iron mine, the ledge in which the latter is located, and the embankment over which the track of the New York City and Northern Railroad passes. The two bodies of water join under a bridge in the railroad embankment. The main feeder of the reservoir is the Middle Branch of the Croton river, which enters it at its northern end. A brook of some size enters it at its northwest corner, and another small brook joins it on the east of the Tilly Foster dump. It has no other tributaries of importance. The supply of water from the reservoir had been shut off on August 22, 1891. Up to that date the reservoir had been furnishing thirty million gallons daily to the City's water supply. No water was being drawn from the reservoir at time of inspection (August 28, 1891). The small amount of water remaining in the northern basin was of a bright green color, and appeared to be full of vegetable debris. It was covered in places with a green scum, and the same was true of the northern portion of the main reservoir. Between high-water mark and the present water-level, a considerable growth of weeds had sprung up around the shores of the northern basin. The rip-rap at the dam was, however, clean and free from vegetable growth.

A fountain is located just below the dam, by which the water is aerated, in its passage into the Middle Branch. We were informed by the gate-house keeper, and by other residents in the vicinity, that a smell of sulphureted hydrogen was perceptible at the fountain, when water was flowing through the same.

On the ledge in which the Tilly Foster mine is located, there are ten buildings; and to the north, facing the small northern basin, are seventeen houses occupied by the mine laborers. While all of these are at a considerable distance from the water, the configuration of the ground is such that their drainage must flow towards the main reservoir or the small northern basin. North of the dump are two ore-washing beds, from each of which small streams flow into the main reservoir and small basin respectively.

Middle Branch of the Croton River—From the fountain at the dam, this stream flows in a general southwesterly direction to its junction with the West Branch, about two miles below the dam. From this point the combined streams flow in a general southerly direction, a distance of about one and one-half miles, to the point where they join the East Branch, just below Croton Falls. The only important tributary to the Middle Branch, below the reservoir, is "Brimstone Hollow" brook, which rises above the Town of Carmel, drains a portion of the same, and flows southerly between the reservoir and Lakes Gleneida and Gilead, joining the Middle Branch about three-quarters of a mile below the dam.

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Aug. 28	94	Reservoir "G," east shore, one mile from north end	Barn	300	Blind drain runs from barn and poultry-house alongside privy (ten feet from same) to reservoir. Water of drain near reservoir shows sewage contamination on tests.
" 28	94	Reservoir "G," east shore, one mile from north end	Poultry-house	00	
" 28	94	Reservoir "G," east shore, one mile from north end	Privy	200	Wooden box vault.
" 28	95	Reservoir "G," east shore, near Tilly Foster dump	Dwelling	60	Slops thrown out.
" 28	95	Reservoir "G," east shore, near Tilly Foster dump	Privy	80	Loose stone vault.
" 28	95	Reservoir "G," east shore, near Tilly Foster dump	Poultry-house	80	
" 28	96	Small tributary, drains swampy ground into small northern basin of reservoir	Dwelling	30	Slops thrown out. Measurement made from edge of swampy ground.
" 28	96	Small tributary, drains swampy ground into small northern basin of reservoir	Privy	10	Loose stone vault. Measurement made from edge of swampy ground.
" 28	97	Reservoir "G," south side, small northern basin	Dwelling	25	Slops thrown out; has no privy.
" 28	98	Tributary from west, enters reservoir three-fourths mile from north end	"	*	House-drain discharges into brook.
" 28	98	Tributary from west, enters reservoir three-fourths mile from north end	Privy	10	Uncemented earth vault.
" 28	98	Tributary from west, enters reservoir three-fourths mile from north end	Barn	20	
" 28	98	Tributary from west, enters reservoir three-fourths mile from north end	Manure heap	20	
" 28	99	Reservoir "G," east side, one-half mile above dam	Barn	50	Fifteen cows. Small brook runs alongside barn into reservoir.
" 28	100	Small tributary from east, enters reservoir three-fourths mile above dam	Privy	35	Loose stone vault.
" 28	100	Small tributary from east, enters reservoir three-fourths mile above dam	Pig-pen	30	Filthy.
" 28	100	Small tributary from east, enters reservoir three-fourths mile above dam	Barnyard	100	Manure in same.
" 28	101	Middle Branch, small tributary from west, enters river just below dam	Cow yard	*	Brook fed by spring in cow yard.
" 28	102	Middle Branch, east bank, gate-house keeper's residence	Poultry-house	40	On stone embankment, twenty feet high. Large number of fowls; manure gathered up.
" 28	102	Middle Branch, east bank, gate-house keeper's residence	Dwelling	40	On stone embankment, twenty feet high. Slops thrown out; premises generally clean.
" 28	103	Middle Branch, east bank, near dam	Privy	120	No vault; contents drop at foot of stone embankment.
" 28	103	" "	House-drain	120	Empties over stone embankment.
" 28	104	Middle Branch, east bank, about three-fourths mile below dam	Barn	*	Ten horses.
" 28	104	Middle Branch, east bank, about three-fourths mile below dam	Manure heap	20	Very large, wet and filthy.
" 28	104	Middle Branch, east bank, about three-fourths mile below dam	Pig-pen	40	Filthy.
" 28	104	Middle Branch, east bank, about three-fourths mile below dam	Barn	40	Ten cows.

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Aug. 28	104	Middle Branch, east bank, about three-fourths mile below dam.....	Poultry yard.	40	*
" 28	105	Middle Branch, east bank, about three-fourths mile below dam.....	Cesspool.....	*	Receives drainage (including water-closets) of large residence.
Sept. 2	106	"Brimstone Hollow" brook, tributary from west, enters river three-fourths mile below dam, about two-thirds mile north of Carmel..	Cemetery....	220	One hundred and twenty feet from west bank. "Raymond Hill Cemetery."
" 2	107	The same, about one-half mile north of Carmel.....	Barn	30	West bank.
" 2	107	The same, about one-half mile north of Carmel.....	Manure heap.	30	"
" 2	107	The same, about one-half mile north of Carmel.....	Privy.....	30	West bank, loose stone vault.
" 2	108	"Brimstone Hollow" brook, at Carmel..	Poultry yard.	60	West bank. In cleanly condition; new.
" 2	108	" " ..	Barn	70	" "
" 2	109	" " ..	Privy.....	15	No vault. West bank.
" 2	109	" " ..	Barnyard....	*	Brook runs under yard.
" 2	109	" " ..	Poultry yard.	*	"
" 2	109	" " ..	Dwelling....	10	Slops and garbage thrown into brook, which is half full of same.
" 2	110	" " ..	Privy.....	60	Loose stone vault. West bank.
" 2	111	" " ..	"	10	" "
" 2	111	" " ..	Dwelling	40	Slops thrown out. West bank.
" 2	112	" " ..	"	10	" "
" 2	112	" " ..	Poultry-house	*	West bank.
" 2	112	" " ..	Privy.....	5	Loose stone vault. West bank.
" 2	113	" " ..	Poultry yard	20	East bank.
" 2	113	" " ..	Privy.....	25	Vault open at back. East bank.
" 2	114	"Brimstone Hollow" brook, on Fair Grounds, at Carmel.....	Barn.....	*	Manure in same; not in use. West bank.
" 2	114	"Brimstone Hollow" brook, on Fair Grounds, at Carmel.....	"	90	Manure in same; not in use. West bank.
" 2	114	"Brimstone Hollow" brook, on Fair Grounds, at Carmel.....	"	75	Manure in same; not in use. West bank.
" 9	115	"Brimstone Hollow" brook, opposite northwest end of Reservoir "G"..	"	150	Manure scattered about. West bank.
" 9	116	"Brimstone Hollow" brook, opposite middle of Reservoir "G".....	Privy.....	120	Uncemented earth vault. East bank.
" 9	117	"Brimstone Hollow" brook, opposite middle of Reservoir "G".....	Dwelling	75	Slops thrown out. East bank.
" 9	117	"Brimstone Hollow" brook, opposite middle of Reservoir "G".....	Pig-pen	*	East bank.
" 9	117	"Brimstone Hollow" brook, opposite middle of Reservoir "G".....	Privy.....	125	Uncemented earth vault. East bank.
" 9	118	"Brimstone Hollow" brook, opposite middle of Reservoir "G".....	Barn	10	West bank.
" 9	119	"Brimstone Hollow" brook, opposite south end of Reservoir "G".....	"	10	Now unused. Manure scattered about. West bank.
Aug. 28	120	"Brimstone Hollow" brook, just above junction with Middle Branch	"	60	West bank, on point of land between brook and river.
" 28	120	"Brimstone Hollow" brook, just above junction with Middle Branch	Manure heap	60	West bank, on point of land between brook and river.
" 28	121	Small tributary from east, enters river one and one-fourth miles below dam.....	Barnyard ...	*	
" 28	121	Small tributary from east, enters river one and one-fourth miles below dam.....	Privy	*	No vault; built directly over brook.
		COMBINED MIDDLE AND WEST BRANCHES, AT CROTON FALLS.			
Aug. 28	122	Artificial brook from East Branch, flowing southwest into combined branches.....	Manure and garbage heap	40	East bank.
" 29	122	Artificial brook from East Branch, flowing southwest into combined branches.....	Privy.....	40	East bank. Wooden box vault.
" 29	122	Artificial brook from East Branch, flowing southwest into combined branches.....	Barn	15	East bank.
" 26	123	Artificial brook from East Branch, flowing southwest into combined branches.....	"	40	East bank. Cemented stone foundation; new.
" 29	123	Artificial brook from East Branch, flowing southwest into combined branches.....	Privy.....	40	East bank. Cemented stone vault; new.
" 29	123	Artificial brook from East Branch, flowing southwest into combined branches.....	Manure heap	40	East bank. Large heap.
" 29	123	Artificial brook from East Branch, flowing southwest into combined branches.....	Garbage heap	10	East bank.
" 29	124	Artificial brook from East Branch, flowing southwest into combined branches.....	Two privies..	*	East bank. Cemented stone vaults, one cracked, the other broken; school-house privies.

Summary.	On Water's Edge.	Within 25 Feet.	25 to 50 Feet.	50 to 100 Feet.	100 to 150 Feet.	150 to 250 Feet.	Over 250 Feet.	Total.	
Cemeteries	..	..	..	..	..	1	..	1	
Privies — No vaults	1	2	..	..	1	..	..	4	
Privies — Uncemented earth vaults	..	1	..	..	2	..	..	3	
Privies — Loose stone vaults	..	3	2	2	..	..	..	7	19
Privies — Cemented stone vaults	2	..	1	..	..	..	..	3	
Privies — Wooden box vaults	..	..	1	..	..	1	..	2	
Cesspools — Loose stone vaults	..	..	..	..	..	..	..	..	1
Cesspools — Cemented stone vaults	1	..	..	..	..	..	..	1	
Slaughter-houses	..	..	..	..	..	..	..	..	
Pig-pens	1	..	2	..	..	..	..	3	
Poultry houses and yards	2	1	2	2	..	..	1	8	
Manure heaps	..	2	3	1	..	..	..	6	
Garbage heaps	..	1	1	..	..	..	..	2	
Barns and barnyards	5	4	4	5	1	..	1	20	
Horse and cattle sheds	..	..	..	..	..	..	..	..	
Dwellings	1	3	3	2	1	..	..	10	
Factories	..	..	..	..	..	..	..	..	
Total	13	17	19	12	5	2	2	70	

Reservoir "E" or Boyd's Corners Reservoir, the West Branch of the Croton River below the Reservoir, and Lakes Gleneida and Gilead, with their Tributaries.

Reservoir "E."—This reservoir is located near the northwestern extremity of the water-shed, about four and one-half miles northwest of Reservoir "G," and has a drainage area of about twenty square miles, and a capacity of about three billion three hundred million gallons. It has been in use nineteen years. The main feeders of the reservoir are two in number, and enter it at the northwestern and northeastern extremities, respectively. They may be considered as the two branches of the West Branch of the Croton river, which latter, therefore, takes its rise in the reservoir itself. There are no other tributaries of importance.

The village of Kent Cliffs is located on the west side of the reservoir, about midway between its northern and southern extremities. Its situation is such that the drainage of the village is towards the reservoir, or towards a small brook which flows through the town into the reservoir.

At the time of inspection (September 3, 1891), twenty million gallons daily were being drawn from the reservoir for the city's water supply. The banks of the reservoir, between high-water mark and present water-level, were cleaner and more free from growth of weeds, etc., than those of Reservoirs "G" or "I." The water is aerated by passing through a fountain at the base of the dam. At this point a faint marshy odor was perceptible, similar to that of Croton water as delivered in New York City. No smell of sulphuretted hydrogen was noted.

West Branch of the Croton River.—Starting at the reservoir, this stream flows for a distance of about eight miles in a general southeasterly direction to its junction with the Middle Branch above Croton Falls. The small village of Coles' Mills is located on the river about one mile below the reservoir. Its main tributaries are: From the west, China Pond brook, joining it about one-half mile below the reservoir; Barrett's Pond brook, joining it at Coles' Mills, and Long Pond brook, joining it about three and one-fourth miles below the reservoir. From the east, the main tributaries are: The stream formed by the junction of Pine Pond and Horse Pound brooks, and the outlet of Lake Gleneida, which stream enters the river about two and one-third miles below the reservoir, and the outlet of Lake Gilead, which enters it about one and one-third miles above its junction with the Middle Branch.

The large dam for new Reservoir "M" is being built on the river, under the supervision of the Aqueduct Commission, at a point about three-eighths of a mile below the junction of Long Pond brook with the river.

Lake Gleneida.—This lake is located about two and three-fourths miles southeast from Reservoir "E," on a line between this and Reservoir "G." It is entirely fed by springs, and is about seven-eighths of a mile long and three-eighths of a mile wide at its widest part. Carmel, the county seat of Putnam County, lies along its eastern bank. The general drainage of the larger portion of the town is towards the lake. The outlet of the lake is at its northwestern extremity, and empties it into Horse Pound brook, about seven-eighths of a mile from the junction of the latter with the West Branch.

At time of inspection (September 2, 1891), the lake was not in use as a source of water supply, the only water passing through the outlet being the small natural overflow.

Lake Gilead.—This lake is located about one mile south of Lake Gleneida, and is almost entirely fed by springs. It is about five-sixths of a mile long and one-third of a mile wide at its widest part. The outlet is located at its southern extremity, emptying it into the West Branch about one-third of a mile from the lake, and at the time of inspection (September 4, 1891), carried apparently only the natural overflow of the lake, which amounted to a fair sized brook. This lake is practically free from sewage pollution, only one possible source of contamination being noted. (See enumeration.)

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Sept. 3	125	Small tributary from west, enters reservoir south of Kent Cliffs....	Horse shed....	5	Manure scattered about. South bank.
" 3	125	Small tributary from west, enters reservoir south of Kent Cliffs....	Barn	15	North bank.
" 3	125	Small tributary from west, enters reservoir south of Kent Cliffs....	Two manure heaps.....	15	"
" 3	125	Small tributary from west, enters reservoir south of Kent Cliffs....	Privy	40	Uncemented earth vault. North bank; on dry gully, one hundred feet from reservoir.
" 3	125	Small tributary from west, enters reservoir south of Kent Cliffs....	Dwelling	25	Slops thrown out. North bank; on dry gully, one hundred feet from reservoir.
" 3	126	Reservoir "E," west shore, at Kent Cliffs.....	Two privies....	500	Uncemented earth vaults; school-house privies. On edge of precipitous slope, one hundred and fifty feet from dry gully leading to reservoir (see No. 125).
" 3	127	Reservoir "E," west shore, at Kent Cliffs.....	Barn	100	Manure in same; unoccupied.
" 3	128	Reservoir "E," west shore, at Kent Cliffs.....	"	400	Thirty feet from open drain, running to small brook, thence into reservoir.
" 3	128	Reservoir "E," west shore, at Kent Cliffs.....	Manure heap ..	400	Thirty feet from open drain, running to small brook, thence into reservoir.
" 3	129	Small tributary from west, enters reservoir at Kent Cliffs	Privy.....	35	Loose stone vault; north bank. Brook dry (see No. 128).
" 3	129	Small tributary from west, enters reservoir at Kent Cliffs.....	Dwelling	35	Slops thrown into brook; south bank. Brook dry (see No. 128).
" 3	130	Small tributary from west, enters reservoir at Kent Cliffs..... ...	"	35	Slops thrown out; north bank. Brook dry. Seventy-five feet from reservoir.
" 3	131	Reservoir "E," west shore, about one-third mile north of Kent Cliffs	"	70	Slops thrown out. Steep slope.
" 3	131	Reservoir "E," west shore, about one-third mile north of Kent Cliffs	Privy.....	80	Loose stone vault. Steep slope.
" 3	132	Reservoir "E," west shore, about one-half mile north of Kent Cliffs.	"	120	Uncemented earth vault. On gully draining into reservoir; steep slope.
" 3	132	Reservoir "E," west shore, about one-half mile north of Kent Cliffs	Dwelling	80	Slops thrown out. Steep slope.
" 3	132	Reservoir "E," west shore, about one-half mile north of Kent Cliffs	Barn	40	Steep slope.
" 3	133	Reservoir "E," west shore, near northwest end.....	Privy.....	120	Uncemented earth vault.
" 3	133	Reservoir "E," west shore, near northwest end.....	Barn	120	
" 3	133	Reservoir "E," west shore, near northwest end	Manure heap ..	120	
" 3	133	Reservoir "E," west shore, near northwest end	Dwelling	40	Slops thrown out.
" 3	134	West Branch Croton river. Small tributary from east, enters river about three-eighths mile below reservoir	"	70	Slops thrown out; south bank. Has no privy.
" 3	135	China Pond brook, tributary from west. Enters river about one-half mile below reservoir.....	"	25	Slops thrown into open drain running to brook. South bank.
" 3	135	China Pond brook, tributary from west. Enters river about one-half mile below reservoir.....	Privy.....	*	No vault; built directly over brook.
" 3	135	China Pond brook, tributary from west. Enters river about one-half mile below reservoir.....	Pig-pen.....	30	North bank.
" 3	136	Barrett's Pond brook, tributary from west. Enters river at Cole's Mills	Dwelling	80	Slops thrown out. South bank; steep slope.
" 3	136	Barrett's Pond brook, tributary from west. Enters river at Cole's Mills	Privy.....	15	No vault. South bank.
" 3	136	Barrett's Pond brook, tributary from west. Enters river at Cole's Mills.....	Pig-pen.....	5	Filthy. South bank.
" 3	137	Barrett's Pond brook, tributary from west. Enters river at Cole's Mills	Poultry-house..	15	North bank.
" 3	137	Barrett's Pond brook, tributary from west. Enters river at Cole's Mills.....	Dwelling	20	Slops thrown out. South bank. Premises generally dirty.
" 3	137	Barrett's Pond brook, tributary from west. Enters river at Cole's Mills	Privy.....	*	No vault. South bank.
" 3	138	Barrett's Pond brook, tributary from west. Enters river at Cole's Mills	Barn	15	Manure in same; unoccupied. South bank.
" 3	139	West Branch, west bank, at Cole's Mills	Privy.....	10	Loose stone vault.
" 3	139	West Branch, west bank, at Cole's Mills.....	Dwelling	*	Slops thrown into river; built partly over same.
" 3	140	West Branch, east bank, at Cole's Mills.....	Privy.....	60	Loose stone vault. Steep slope.
" 3	140	West Branch, east bank, at Cole's Mills.....	Dwelling	60	Slops thrown out. Steep slope.
" 3	141	West Branch, west bank, at Cole's Mills.....	Cattle shed....	10	
" 3	141	West Branch, west bank, at Cole's Mills.....	Barnyard	*	Littered with manure.

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Sept. 2	142	Horse Pound brook, tributary from east, enters river two and one-third miles below reservoir	Barnyard	20	West bank, about two miles from junction of brook with West Branch.
" 2	143	East Branch of Horse Pound brook, one and one-half miles from junction with brook	Two privies	150	Loose stone vaults. East bank; steep slope.
" 2	144	East Branch of Horse Pound brook, one and one-half miles from junction with brook	Privy	150	Uncemented earth vault. West bank.
" 2	144	East Branch of Horse Pound brook, one and one-half miles from junction with brook	Poultry-house	150	West bank.
" 2	145	Lake Gleneida, east side, Town of Carmel	Privy	45	Uncemented earth vault.
" 2	145	Lake Gleneida, east side, Town of Carmel	Pig-pen	45	Filthy; open drain from same runs to lake.
" 2	145	Lake Gleneida, east side, Town of Carmel	Dwelling	10	Slops thrown out.
" 2	146	Lake Gleneida, east side, Town of Carmel	"	15	Slops thrown out on shore; premises filthy.
" 2	147	Lake Gleneida, east side, Town of Carmel	"	*	Slops thrown out.
" 2	147	Lake Gleneida, east side, Town of Carmel	Privy	*	No vault; built partly over water, and filthy.
" 2	148	Lake Gleneida, east side, Town of Carmel	Cattle shed	*	Filthy.
" 2	148	Lake Gleneida, east side, Town of Carmel	Manure heap	30	
" 2	149	Lake Gleneida, east side, Town of Carmel	Privy	15	Loose stone vault.
" 2	149	Lake Gleneida, east side, Town of Carmel	Dwelling	5	Slops thrown out.
" 2	150	Lake Gleneida, east side, Town of Carmel	Manure pit	10	
" 2	150	Lake Gleneida, east side, Town of Carmel	Poultry yard	10	Filthy.
" 2	150	Lake Gleneida, east side, Town of Carmel	Pig-pen	*	
" 2	151	Lake Gleneida, east side, Town of Carmel	"	*	Filthy.
" 2	151	Lake Gleneida, east side, Town of Carmel	Dwelling	*	Slops thrown out.
" 2	151	Lake Gleneida, east side, Town of Carmel	Privy	5	Loose stone vault.
" 2	151	Lake Gleneida, east side, Town of Carmel	Dwelling	10	Slops thrown out.
" 2	152	Lake Gleneida, east side, Town of Carmel	Privy	*	Loose stone vault.
" 2	153	Lake Gleneida, east side, Town of Carmel	Factory	*	New York Milk and Cream Company. Washings from factory discharge into lake.
" 2	154	Lake Gleneida, east side, Town of Carmel	Hotel	*	Slops thrown out on shore and washing done in lake.
" 2	154	Lake Gleneida, east side, Town of Carmel	Privy	10	Uncemented earth vault.
" 2	155	Lake Gleneida, east side, Town of Carmel	Dwelling	20	Slops and garbage thrown out in large amount.
" 2	155	Lake Gleneida, east side, Town of Carmel	Privy	*	Tight wooden box vault; full of liquid filth.
" 2	156	Lake Gleneida, east side, Town of Carmel	Blacksmith shop	*	
" 2	157	Lake Gleneida, east side, Town of Carmel	Two privies	20	Cemented stone vaults; school-house privies.
" 2	158	Lake Gleneida, east side, Town of Carmel	Privy	50	Cemented stone vault. Slops and garbage thrown alongside same.
" 2	158	Lake Gleneida, east side, Town of Carmel	Shed	*	Washing done in same.
" 2	159	Lake Gleneida, east side, Town of Carmel	Barn	*	
" 2	159	Lake Gleneida, east side, Town of Carmel	Privy	50	Cemented stone vault.
" 2	160	Lake Gleneida, east side, Town of Carmel	Two privies	50	"
" 2	160	Lake Gleneida, east side, Town of Carmel	Barn	50	
" 2	160	Lake Gleneida, east side, Town of Carmel	Manure heap	60	Large heap; in shed.
" 2	161	Lake Gleneida, east side, Town of Carmel	Privy	50	Uncemented earth vault.
" 2	162	Lake Gleneida, east side, Town of Carmel	"	50	Cemented brick vault.
" 2	163	Lake Gleneida, east side, Town of Carmel	Poultry yard	*	
" 2	163	Lake Gleneida, east side, Town of Carmel	Privy	50	Loose stone vault. Large pool of slops alongside of same.
" 2	164	Lake Gleneida, east side, Town of Carmel	"	30	Loose stone vault.
" 2	164	Lake Gleneida, east side, Town of Carmel	Poultry yard	40	
" 2	164	Lake Gleneida, east side, Town of Carmel	Dwelling	60	Slops thrown out.
" 2	165	Lake Gleneida, east side, Town of Carmel	Poultry yard	*	
" 2	165	Lake Gleneida, east side, Town of Carmel	Privy	40	Loose stone vault.
" 2	166	Lake Gleneida, east side, Town of Carmel	Barn	*	
" 2	166	Lake Gleneida, east side, Town of Carmel	Privy	60	Uncemented earth vault.
" 2	166	Lake Gleneida, east side, Town of Carmel	Manure heap	10	Large heap.
" 2	167	Lake Gleneida, east side, Town of Carmel	Barn	*	
" 2	167	Lake Gleneida, east side, Town of Carmel	Privy	70	Uncemented earth vault.
" 2	167	Lake Gleneida, east side, Town of Carmel	Garbage heap	70	
" 2	167	Lake Gleneida, east side, Town of Carmel	Dwelling	85	Slops thrown out.
" 2	168	Lake Gleneida, east side, Town of Carmel	Garbage heap	40	Slops thrown on same.
" 2	168	Lake Gleneida, east side, Town of Carmel	Privy	65	Leaky wooden box vault.
" 2	169	Lake Gleneida, east side, Town of Carmel	Garbage heap	*	
" 2	170	Lake Gleneida, east side, Town of Carmel	Poultry yard	*	Garbage thrown in same.
" 2	171	Lake Gleneida, east side, Town of Carmel	"	*	Apparently an old pig-pen; filthy.
" 2	171	Lake Gleneida, east side, Town of Carmel	Two privies	20	Uncemented earth vault.
" 2	171	Lake Gleneida, east side, Town of Carmel	Three privies	70	Cemented stone vaults; house-drain discharges into these.
" 2	172	Lake Gleneida, east side, Town of Carmel, at Gleneida Hotel	Hotel	*	Drain-pipe from kitchen and wash-basins discharges into lake.
" 2	172	Lake Gleneida, east side, Town of Carmel	Garbage heap	25	
" 2	172	Lake Gleneida, east side, Town of Carmel	Poultry-house	25	
" 2	172	Lake Gleneida, east side, Town of Carmel	Large privy	*	Cemented stone vault; drain-pipe from this discharges into lake.
" 2	172	Lake Gleneida, east side, Town of Carmel	Barn	*	Twenty horses. Refuse and garbage thrown into lake back of same.
" 2	173	Lake Gleneida, east side, Town of Carmel	Two privies	80	Cemented stone vaults, full of liquid filth.
" 2	173	Lake Gleneida, east side, Town of Carmel	Refuse heap	5	
" 2	174	Lake Gleneida, north end, Town of Carmel	Dwelling	100	Open drain runs alongside house to lake.
" 2	175	Lake Gleneida outlet, about one-sixth mile from lake	Barn	60	South bank.
" 2	175	Lake Gleneida outlet, about one-sixth mile from lake	Privy	60	Cemented stone vault. South bank.
" 2	175	Lake Gleneida outlet, about one-sixth mile from lake	Refuse heap	*	Considerable refuse in brook itself.
" 2	175	Lake Gleneida outlet, about one-sixth mile from lake	Poultry-house	20	
" 2	175	Lake Gleneida outlet, about one-sixth mile from lake	Barn	40	
" 2	175	Lake Gleneida outlet, about one-sixth mile from lake	Manure heap	30	Large heap.
Sept. 3	176	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	Privy	10	Loose stone vault. South bank.
" 3	176	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	Dwelling	40	Slops thrown out. South bank.
" 3	177	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	"	100	Slops thrown out. North bank.
" 3	177	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	Poultry-house	10	North bank.
" 3	178	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	Barn	*	South bank.
" 3	178	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	Manure heap	*	"
" 3	178	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	Privy	25	Loose stone vault. South bank.
" 3	178	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	Dwelling	40	Slops thrown out. South bank.
" 3	179	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	Pig-pen	*	Filthy. Precipitous bank fifteen feet high. South bank.
" 3	179	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	Privy	40	Loose stone vault; contents oozing out underneath. Steep slope. South bank.
" 3	179	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	Dwelling	30	Steep bank, twenty-five feet high; house-drain runs down bank. South bank.
" 3	180	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	"	*	Quarters for twenty laborers employed on small dam for new Reservoir "D"; apparently old mill. Built directly over brook. Slops and garbage thrown into brook.
" 3	180	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	Privy	25	Uncemented earth vault. Back of laborers' quarters. Steep slope. North bank.
" 3	180	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	Pig-pen	30	Very filthy; open drain to brook. Back of laborers' quarters. Steep slope. North bank.
" 3	180	Long Pond brook, tributary from west, enters river three and one-fourth miles below the reservoir	Privy	12	Uncemented earth vault. In front of laborers' quarters. North bank.
" 3	181	Small tributary to Long pond, from the east	Shed	*	Swill for pigs kept in same. Built directly over brook.
" 3	181	Small tributary to Long pond, from the east	Pig-pen	30	North bank.
" 3	182	Long Pond brook	Two privies	100	Loose stone vault; school-house privies. North bank.
" 3	183	"	Barn	125	South bank.
" 3	184	Small tributary to Long Pond brook, from the north	"	*	Brook dried up.
" 4	185	West Branch, west bank, above large dam for new Reservoir "D"	Dwelling	125	Quarters for sixty laborers employed on large dam. Garbage and slops thrown into river and washing done in river.
" 4	185	West Branch, west bank, above large dam for new Reservoir "D"	"	30	Slops thrown into river.
" 4	186	West Branch, west bank, below large dam for new Reservoir "D"	"	80	Quarters for twenty laborers (see No. 185). Steep slope. Refuse thrown down bank.
" 4	187	Lake Gilead, west shore	Privy	700	Loose stone vault. On old water-course, seventy-five feet above the lake.
" 4	188	Lake Gilead outlet; enters West Branch from north, about one-third mile from the lake. Small spring brook tributary to outlet	"	80	Loose stone vault.
" 4	188	Lake Gilead outlet	Dwelling	10	Slops thrown out. East bank.
" 4	189	"	Barn	60	East bank.
" 4	189	"	Manure heap	60	"
" 4	189	"	Pig-pen	5	Filthy. Open drain to outlet. East bank.
" 4	189	"	Privy	40	Loose stone vault.
" 4	190	Junction of flume and small tributary to West Branch, from the west, three-fourths mile above junction of West and Middle Branches	Dwelling	100	Slops thrown out. Washing done in flume.
" 3	191	Junction of flume and small tributary to West Branch, from the west, three-fourths mile above junction of West and Middle Branches	Wash-house	*	On tributary.
" 3	191	Junction of flume and small tributary to West Branch, from the west, three-fourths mile above junction of West and Middle Branches	Privy	15	On tributary. Loose stone vault.

		On Water's Edge.	Within 25 Feet.	25 to 50 Feet.	50 to 100 Feet.	100 to 150 Feet.	150 to 250 Feet.	Over 250 Feet.	Total.	
Cemeteries		..	..	..	..	..	..	..	..	
Privies	No vault	4	1	..	..	..	..	..	5	
	Uncemented earth vault	..	5	3	2	3	..	2	15	
	Loose stone vault	1	6	6	5	2	..	1	21	56
	Cemented stone vault	..	2	5	6	..	..	..	13	
	Wooden box vault	1	..	..	1	..	..	..	2	
Cesspools	Loose stone vault	..	..	..	..	..	..	..	..	..
	Cemented stone vault	..	..	..	..	..	..	..	..	
Slaughter-houses		..	..	..	..	..	..	..	..	
Pig-pens		3	2	4	..	..	..	..	9	
Poultry houses and yards		4	5	1	..	1	..	..	11	
Manure heaps		1	4	2	2	1	..	1	11	
Garbage heaps		3	2	1	1	..	..	..	7	
Barns and barnyards		7	3	3	3	2	..	1	19	
Horse and cattle sheds		1	2	..	..	..	..	..	3	
Dwellings		8	9	7	11	1	..	..	36	
Factories		2	..	..	..	..	..	..	2	
Total		35	41	32	31	10	..	5	154	

The Titicus River, with its Tributaries.

This stream takes its rise on the eastern limit of the water-shed, in the State of Connecticut, and from the State line flows in a general easterly direction to its junction with the Croton river, at Purdy's, about one and one-half miles below Croton Falls. It passes through the Towns of North Salem, Salem Centre and Purdy's, and is about six and three-fourths miles in length from the

State line (beyond which point it was not inspected) to its mouth. About one-third mile east from Purdy's, the dam for new Reservoir "M" is being built under the supervision of the Aqueduct Commission.

A number of small tributaries join the river along its course, the largest of which is a brook draining a considerable area to the south of the river, and entering it at the Town of Salem Centre. The configuration of the land is such that the general drainage of North Salem and Salem Centre is towards the river, or towards the tributaries which flow through these towns. The Town of Purdy's is largely located on a flat, so that the general drainage of a considerable portion of the town is not so directly towards the river as in the cases of North Salem and Salem Centre.

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Sept. 17	192	Titicus river, north bank, east of North Salem	Barn	50	Steep slope.
" 17	192	Titicus river, north bank, east of North Salem	Manure heap	70	"
" 17	192	Titicus river, north bank, east of North Salem	Poultry yard	70	"
" 17	192	Titicus river, north bank, east of North Salem	Privy	90	Loose stone vault. Steep slope.
" 17	193	Small tributary from the north, enters river east of North Salem	"	150	Loose stone vault. Brook dried up.
" 17	193	Small tributary from the north, enters river east of North Salem	Dwelling	70	Slops thrown out. Brook dried up.
" 17	193	Small tributary from the north, enters river east of North Salem	Barn	45	Brook dried up.
" 17	193	Small tributary from the north, enters river east of North Salem	Poultry yard	15	"
" 17	194	Small tributary from the north, enters river at North Salem	Dwelling	35	Slops thrown into brook. West bank.
" 17	194	Small tributary from the north, enters river at North Salem	Privy	70	Tight wooden box vault, full. West bank.
" 17	194	Small tributary from the north, enters river at North Salem	Barn	50	West bank.
" 17	194	Small tributary from the north, enters river at North Salem	Poultry yard	50	"
" 17	194	Small tributary from the north, enters river at North Salem	Manure heap	50	"
" 17	195	Small tributary from the north, enters river at North Salem	Barn	100	East bank. On edge of marsh drained by brook.
" 17	195	Small tributary from the north, enters river at North Salem	Manure and garbage heap	100	East bank. On edge of marsh drained by brook.
" 17	195	Small tributary from the north, enters river at North Salem	Dwelling	50	East bank. Measurement from open drain running to brook.
" 17	196	Fair sized tributary from the north, enters river at North Salem	Horse shed	50	East bank. Manure in same.
" 17	197	Fair sized tributary from the north, enters river at North Salem	Dwelling	60	Slops thrown out. West bank; steep slope.
" 17	197	Fair sized tributary from the north, enters river at North Salem	Privy	15	No vault. West bank; steep slope.
" 17	198	Fair sized tributary from the north, enters river at North Salem	"	80	Loose stone vault. East bank.
" 17	198	Titicus river, north bank, at junction of above tributary in North Salem	Pig-pen	50	Extremely filthy. Steep slope.
" 17	198	Titicus river, north bank, at junction of above tributary in North Salem	Barn	50	Steep slope; refuse thrown on bank.
" 17	198	Titicus river, north bank, at junction of above tributary in North Salem	Manure heap	50	Very large. Steep slope.
" 17	199	Fair sized tributary from the north, enters river at North Salem	Barn	15	West bank.
" 17	199	Fair sized tributary from the north, enters river at North Salem	Manure heap	15	"
" 17	199	Fair sized tributary from the north, enters river at North Salem	Privy	60	Loose stone vault. West bank.
" 17	200	Small tributary from the south, enters river at North Salem	"	30	Cemented stone vault, leaky. East bank. Brook nearly dry.
" 17	200	Small tributary from the south, enters river at North Salem	Barn	10	East bank. Open drain runs from this to brook. Brook nearly dry.
" 17	200	Small tributary from the south, enters river at North Salem	Manure heap	10	East bank. Open drain runs from this to brook. Brook nearly dry.
" 17	200	Small tributary from the south, enters river at North Salem	Pig-pen	10	East bank. Open drain runs from this to brook. Brook nearly dry.
" 17	200	Small tributary from the south, enters river at North Salem	Poultry yard	10	East bank. Open drain runs from this to brook. Brook nearly dry.
" 17	201	Small tributary from the north, enters river at North Salem	Barn	*	East bank. Premises filthy.
" 17	201	Small tributary from the north, enters river at North Salem	Poultry yard	*	" "
" 17	201	Small tributary from the north, enters river at North Salem	Manure heap	*	Large heap. East bank. Premises filthy.
" 17	201	Small tributary from the north, enters river at North Salem	Privy	30	Wooden box vault. East bank. Premises filthy.
" 17	201	Small tributary from the north, enters river at North Salem	Dwelling	30	East bank. Slops thrown into open drain running to brook. Premises filthy.
" 17	202	Small tributary from the north, enters river at North Salem	Barn	*	West bank. Open drain into brook.
" 17	202	Small tributary from the north, enters river at North Salem	Manure heap	*	" "
" 17	202	Small tributary from the north, enters river at North Salem	Poultry-house	35	West bank.
" 17	202	Small tributary from the north, enters river at North Salem	Dwelling	60	Covered drain from same discharges twenty-five feet from brook; steep slope. West bank.
" 17	203	Titicus river, south bank, in North Salem	Barn	*	
" 17	203	Titicus river, south bank, in North Salem	Cider-mill	*	Large heap of rotting pomace alongside same.
" 17	204	Titicus river, north bank, in North Salem	Dwelling	30	
" 17	204	Titicus river, north bank, in North Salem	Privy	25	Uncemented earth vault.
" 17	204	Titicus river, north bank, in North Salem	Horse shed	15	Manure in same.
" 17	205	Titicus river, north bank, in North Salem	Barn	130	Just back of No. 204. Steep slope.
" 17	205	Titicus river, north bank, in North Salem	Privy	80	Just back of No. 204; uncemented earth vault. Steep slope.
" 17	205	Titicus river, north bank, in North Salem	Poultry yard	100	Just back of No. 204. Steep slope.
" 17	206	Titicus river, north bank, in North Salem	Privy	*	No vault; precipitous bank twenty feet high.
" 17	206	Titicus river, north bank, in North Salem	Barn	30	Very steep slope.
" 17	206	Titicus river, north bank, in North Salem	Manure heap	25	Very steep slope; slops and garbage thrown on this heap.
" 17	207	Titicus river, north bank, in North Salem	Dwelling	*	Covered drain runs from house into river.
" 17	207	Titicus river, north bank, in North Salem	Privy	125	Loose stone vault; very steep slope.
" 17	208	Titicus river, north bank, in North Salem	Barn	*	
" 17	209	Titicus river, south bank, in North Salem	Dwelling	20	Garbage and slops thrown down bank.
" 17	209	Titicus river, south bank, in North Salem	Privy	*	No vault; precipitous bank.
" 17	209	Titicus river, south bank, in North Salem	Poultry yard	*	Precipitous bank.
" 17	209	Titicus river, south bank, in North Salem	Wash-house	*	"
" 17	210	Titicus river, north bank, in North Salem	Privy	10	Loose stone vault.
" 17	210	Titicus river, north bank, in North Salem	Dwelling	70	Slops thrown out.
" 17	211	Titicus river, north bank, in North Salem	Poultry yard	40	Garbage thrown on bank at this point.
" 17	212	Titicus river, north bank, in North Salem	Barn	*	Measurement from open drain running to river.
" 17	213	Titicus river, south bank, at junction of small tributary from south, between North Salem and Salem Centre	Dwelling	150	House drainage, including water-closets, discharged by tile drain into brook, which carries it on to surface of meadows, one hundred and fifty feet from river.
" 17	213	Titicus river, south bank, at junction of small tributary from south, between North Salem and Salem Centre	Privy	50	From edge of river bank, twenty feet high; cemented stone vault.
" 17	213	Small tributary from south described above	Barn	150	
" 17	213	Small tributary from south described above	Manure heap	150	
Sept. 17	213	Small tributary from south described above	Poultry yard	150	
" 18	214	Titicus river, south bank, between North Salem and Salem Centre	"	*	
" 18	214	Titicus river, south bank, between North Salem and Salem Centre	Dwelling	*	Garbage and slops thrown into river.
" 18	215	Titicus river, north bank, in Salem Centre	Barn	*	Large amount of garbage, old bones, etc., thrown down bank.
" 18	215	Titicus river, north bank, in Salem Centre	Poultry-house	*	North Salem Market; no slaughtering done on premises.
" 18	215	Titicus river, north bank, in Salem Centre	Privy	*	Loose stone vault; precipitous bank, ten feet high.
" 18	215	Titicus river, north bank, in Salem Centre	Dwelling	40	Slops thrown out.
" 18	216	Titicus river, north bank, in Salem Centre	"	50	"
" 18	216	Titicus river, north bank, in Salem Centre	Privy	*	Loose stone vault.
" 18	216	Titicus river, north bank, in Salem Centre	Poultry yard	*	
" 18	217	Titicus river, north bank, in Salem Centre	Cider-mill	*	Some manure and refuse thrown down bank.
" 18	218	Titicus river, north bank, in Salem Centre	Horse shed	50	Manure in same. Steep slope.
" 18	219	Titicus river, north bank, in Salem Centre	Dwelling	50	Slops and refuse thrown out.
" 18	219	Titicus river, north bank, in Salem Centre	Pig-pen	50	
" 18	219	Titicus river, north bank, in Salem Centre	Privy	25	Uncemented earth vault. Steep slope
" 18	220	Small tributary from north, enters river at Salem Centre	"	25	Loose stone vault; brook dried up. East bank.
" 18	220	Small tributary from north, enters river at Salem Centre	Refuse heap	*	Slops thrown into brook. Brook dried up. East bank.
" 18	220	Small tributary from north, enters river at Salem Centre	Wash-house	*	Slops thrown into brook. Brook dried up. East bank.
" 18	221	Fair sized tributary from north, enters river west of Salem Centre	Pig-pen	60	Filthy. On edge of marshy ground drained by brook. East bank.
" 18	221	Fair sized tributary from north, enters river west of Salem Centre	Privy	15	No vault. East bank.
" 18	222	Titicus river, north bank, between Salem Centre and Purdy's	"	..	Loose stone vault. Perpendicular bank, seven feet high.
" 18	222	Titicus river, north bank, between Salem Centre and Purdy's	Pig-pen	..	Filthy.
" 18	222	Titicus river, north bank, between Salem Centre and Purdy's	Dwelling	30	Slops thrown out; steep slope.
" 18	223	Small pond formed by tributary from north; enters river between Salem Centre and Purdy's	"	80	Slops thrown out at this point. West bank.
" 18	224	Pond formed by good sized tributary from north, same enters river between Salem Centre and Purdy's	"	200	House drainage discharged by tile pipes at this point. East bank.
" 18	224	Pond formed by good sized tributary from north, same enters river between Salem Centre and Purdy's	Barn	60	Occupied by coachman's family; slops thrown out; surface drained alongside barn to pond.
" 18	224	Tributary above the pond	Manure heap	45	Very large heap. East bank.
" 18	224	"	Poultry yard	*	Very large yard; brook runs directly through same.
" 18	225	Tributary below the pond	Milk factory	*	T. W. Decker's Dairy and Milk Bottling Establishment; washings discharged into brook.
" 18	225	"	Barn	50	T. W. Decker's Dairy and Milk Bottling Establishment. Ninety-six cows; quite steep slope.
" 18	225	Titicus river, at junction of above tributary	Horse shed	*	T. W. Decker's Dairy and Milk Bottling Establishment. Built over feeder and on river.
" 18	225	Titicus river, at junction of above tributary	Barn	*	T. W. Decker's Dairy and Milk Bottling Establishment. Fourteen horses; built over feeder and on river.
" 18	226	Titicus river, north bank, between North Salem and Purdy's	Poultry yard	*	
" 18	226	Titicus river, north bank, between North Salem and Purdy's	Privy	*	Loose stone vault; excrement flowing directly into river.
" 18	226	Titicus river, north bank, between North Salem and Purdy's	Dwelling	*	Slops thrown out; premises generally dirty.
" 18	227	Titicus river, north bank, between North Salem and Purdy's	Barn	100	
" 18	227	Titicus river, north bank, between North Salem and Purdy's	Pig-pen	100	
" 18	227	Titicus river, north bank, between North Salem and Purdy's	Poultry yard	100	
" 18	228	Small tributary from north, enters river through sand and stone-dump, 100 feet thick, excavated from site of dam, new Reservoir "M," east of Purdy's	Privy	75	Uncemented earth vault; laborers' privy, at least six feet deep. East bank. Clothes washed in spring near this point, which empties into brook; brook now dry.
" 18	229	Small branch of above tributary from the east	Barn	30	Brook now dry; Nos. 228 and 229 on property occupied by contractors, new Reservoir "M."
" 18	230	Titicus river, south bank, at Purdy's	Dwelling	50	Slops thrown into open drain running to river; premises dirty.
" 18	230	" " "	Privy	50	Uncemented earth vault.
" 18	230	" " "	Poultry yard	50	
" 18	231	" " "	Dwelling	*	Slops and garbage thrown into river.
" 18	231	" " "	Privy	5	Leaky wooden box vault.
" 18	232	Titicus river, north bank, at Purdy's	Dwelling	35	Slops thrown out.
" 18	232	" " "	Privy	20	Loose stone vault.
" 18	233	Titicus river, south bank, at Purdy's	Barn	*	
" 18	233	" " "	Manure and garbage heap	*	Very large heap; retained by cemented stone wall.
" 18	233	" " "	Garbage heap	*	
" 18	233	" " "	Privy	30	Tight wooden box vault.
" 18	233	" " "	Cesspool	100	Loose stone; receives house drainage. Premises generally clean.
" 18	234	" " "	Factory	*	New York Condensed Milk Company; washings discharged into river; same dirty with foul odor.
" 18	234	" " "	Privy	15	New York Condensed Milk Company. Cemented stone vault; use permitted by State Board of Health.
" 18	235	" " "	Refuse heap	*	Very large dump, extending fifty feet along bank.
" 18	236	" " "	Garbage heap	*	Large heap.
" 18	237	" " "	Wheelwright shop	*	
" 18	238	" " "	Dwelling	*	Slops thrown down bank.
" 18	238	" " "	Privy	10	Loose stone vault.

Summary.		On Water's Edge.	Within 25 Feet.	25 to 50 Feet.	50 to 100 Feet.	100 to 150 Feet.	150 to 250 Feet.	Over 250 Feet.	Total.	
Cemeteries		..	..	..	..	..	..	..	..	
Privies	No vault	3	2	..	..	..	..	..	5	29
	Uncemented earth vault	..	2	1	2	..	..	..	5	
	Loose stone vault	3	4	..	3	2	..	..	12	
	Cemented stone vault	1	..	2	..	..	..	..	3	
	Wooden box vault	..	1	2	1	..	..	..	4	

SUMMARY.		ON WATER'S EDGE.	WITHIN 25 FEET.	25 TO 50 FEET.	50 TO 100 FEET.	100 TO 150 FEET.	150 TO 250 FEET.	OVER 250 FEET.	TOTAL.
Cesspools	Loose stone vault	..	..	..	1	..	..	..	1
	Cemented stone vault	..	..	..	..	..	..	..	..
Slaughter-houses		..	..	..	..	..	..	..	..
Pig-pens		1	1	2	2	..	..	..	6
Poultry houses and yards		7	2	4	3	1	..	..	17
Manure heaps		3	3	3	2	1	..	..	12
Garbage heaps		5	1	..	1	..	..	..	7
Barns and barnyards		8	2	7	3	2	..	..	22
Horse and cattle sheds		1	1	2	..	..	..	..	4
Dwellings		7	2	10	4	1	1	..	25
Factories		5	..	..	..	..	..	..	5
Total		44	21	33	22	7	1	..	128

The Cross River, with its Tributaries.

This stream has its source in Cross pond, on the eastern limit of the water-shed, whence it flows in a general easterly direction to its junction with the Croton river, near Katonah, five and a half miles below Croton Falls. It passes through the towns of Boutonville, Cross River and Katonah, and is about nine miles in length. Its main tributaries are the Waccabuc river, which is the outlet of Lake Waccabuc, North pond and South pond, and which enters it from the north at Boutonville, a large brook entering it from the north at Cross River, and a stream nearly equaling the river itself in size, which enters it from the south just above Katonah, and is formed by the confluence of Davis brook, Broad brook and Stone Hill river, with their tributaries. These latter streams drain a large area to the south of the river. A dam, just below Katonah, converts the stream into a mill pond during its passage through the town. The general drainage of Boutonville, Cross River and Katonah is towards the river, or the tributaries which flow into it through Boutonville and Cross River.

Date of Inspection.	Map No.	LOCATION.	SOURCE OF PROBABLE CONTAMINATION.	Distance from Water's Edge, in Feet.	REMARKS.
Sept. 15	239	Cross river, north bank, at Boutonville.	Dwelling.....	*	Slops thrown out.
" 15	239	" "	Privy	30	Tub vault, fairly clean; steep slope.
" 15	239	" "	Poultry-house..	60	Steep slope.
" 15	240	" "	Dwelling.....	70	Slops thrown out.
" 15	240	" "	Privy.....	70	Uncemented earth vault.
" 15	240	" "	Barn.....	150	
" 15	240	" "	Manure heap..	150	Very large heap.
" 15	240	" "	Pig-pen.....	150	Filthy.
" 15	241	Cross river, south bank, at Boutonville.	Dwelling.....	15	Slops thrown out.
" 15	241	" "	Privy.....	50	Loose stone vault.
" 15	241	" "	Barn	50	Unoccupied.
" 15	241	" "	Poultry yard..	75	
" 15	242	Tributary from north, enters river at Boutonville.....	Dwelling.....	*	Slops thrown out. West bank.
" 15	242	Tributary from north, enters river at Boutonville.....	Pig-pen.....	*	East bank.
" 15	242	Tributary from north, enters river at Boutonville.....	Privy	*	Tub vault, full of liquid filth. East bank.
" 15	243	Cross river, south bank, at Boutonville.	"	80	No vault; steep slope.
" 15	243	" "	Dwelling.....	125	Slops thrown out; steep slope.
" 15	243	" "	Barn.....	100	Pigs kept in same; steep slope.
" 15	244	Small tributary from south, enters river one and one-half miles above Cross River Village.....	Privy	20	No vault; now unused, but contains excrement; premises unoccupied.
" 15	245	East branch of tributary from south, enters river three-fourths mile above Cross River Village.....	Dwelling.....	80	Slops thrown out; steep slope.
" 15	245	East branch of tributary from south, enters river three-fourths mile above Cross River Village.....	Privy	50	Loose stone vault; excrement oozing out; steep slope.
" 15	245	East branch of tributary from south, enters river three-fourths mile above Cross River Village.....	Pig-pen.....	20	Very filthy.
" 15	245	East branch of tributary from south, enters river three-fourths mile above Cross River Village.....	Poultry yard..	35	
" 15	246	Small tributary from south, enters river one-half mile above Cross River Village.....	Privy	80	No vault. East bank.
" 15	246	Small tributary from south, enters river one-half mile above Cross River Village.....	Pig-pen.....	50	Filthy. East bank.
" 15	246	Small tributary from south, enters river one-half mile above Cross River Village.....	Barn	20	West bank.
" 15	246	Small tributary from south, enters river one-half mile above Cross River Village.....	Manure heap..	20	"
" 15	247	West branch of above tributary (see No. 246).....	Barn	*	East bank.
" 14	248	Cross river, south bank, at Village of Cross River.....	Wheelwright shop.....	*	
" 14	249	Cross river, north bank, at Village of Cross River.....	Horse shed....	150	Manure in same; steep slope.
" 14	250	Cross river, north bank, at Village of Cross River.....	Dwelling	10	Slops thrown out.
" 14	250	Cross river, north bank, at Village of Cross River.....	Privy.....	50	Tub vault, overflowed; open drain from same towards river; manure scattered about.
" 14	251	Cross river, south bank, at Village of Cross River.....	Barn.....	70	
" 14	251	Cross river, south bank, at Village of Cross River.....	Manure heap..	100	
" 14	251	Cross river, south bank, at Village of Cross River.....	Privy.....	15	Loose stone vault; steep slope.
" 14	251	Cross river, south bank, at Village of Cross River.....	Garbage heap..	*	
" 14	251	Cross river, south bank, at Village of Cross River.....	Dwelling.....	30	Slops thrown out; steep slope.
" 14	251	Cross river, south bank, at Village of Cross River.....	Wash-house....	*	Slops thrown out.
" 14	252	Large tributary from north, enters river and forms mill pond in Village of Cross River.....	Barn	*	Unoccupied. East bank.
" 14	253	Large tributary from north, enters river and forms mill pond in Village of Cross River.....	Dwelling.....	70	Slops thrown out. West bank.
" 14	253	Large tributary from north, enters river and forms mill pond in Village of Cross River.....	Privy.....	110	No vault; forty feet from swamp drained by brook. West bank.
" 14	254	Large tributary from north, enters river and forms mill pond in Village of Cross River.....	"	*	No vault. East bank.
" 14	254	Large tributary from north, enters river and forms mill pond in Village of Cross River.....	Dwelling.....	30	Slops thrown into open drain running to brook. East bank.
Sept. 14	255	Large tributary from north, enters river and forms mill pond in Village of Cross River.....	Privy.....	70	Loose stone vault. West bank of mill pond.
" 14	255	Large tributary from north, enters river and forms mill pond in Village of Cross River.....	Dwelling.....	60	Slops thrown into open drain running to mill pond. West bank.
" 14	256	Large tributary from north, enters river and forms mill pond in Village of Cross River.....	Barn	25	Apparently unoccupied. East bank of mill pond.
" 14	256	Large tributary from north, enters river and forms mill pond in Village of Cross River.....	Poultry yard...	25	Apparently unoccupied. East bank of mill pond.
" 14	256	Large tributary from north, enters river and forms mill pond in Village of Cross River,.....	Privy.....	5	Cemented stone vault. East bank of mill pond.
" 14	257	Cross river, south bank, at Village of Cross River.....	"	110	Leaky wooden box vault.
" 14	257	Cross river, south bank, at Village of Cross River.....	Barn	110	
" 14	257	Cross river, south bank, at Village of Cross River.....	Garbage heap..	110	
" 14	258	Cross river, south bank, at Village of Cross River	Slaughter-house	15	Blood discharged through trough into pail, ten feet from slough drained by river; some blood spilt on ground. Offal removed; premises fairly clean.
" 14	259	Cross river, south bank, at Village of Cross River	Two barns.....	130	From slough drained by river (see No. 258).
" 14	259	Cross river, south bank, at Village of Cross River.....	Two poultry-houses.....	130	From slough drained by river (see No. 258).
" 14	260	Cross river, south bank, at Village of Cross River.....	Privy.....	100	Loose stone vault; steep slope.
" 14	260	Cross river, south bank, at Village of Cross River.....	Pig-pen.....	50	Filthy; open drain from same towards river; steep slope.
" 14	260	Cross river, south bank, at Village of Cross River.....	Dwelling	150	Slops thrown out; steep slope.
" 14	260	Cross river, south bank, at Village of Cross River.....	Poultry yard...	150	Steep slope.
" 14	261	Cross river, south bank, three-fourths mile below Village of Cross River	Barn	100	
" 14	261	Cross river, south bank, three-fourths mile below Village of Cross River	Poultry-house .	100	
" 14	262	Cross river, south bank, two and one-half miles below Village of Cross River	Dwelling	80	Slops thrown out; steep slope.
" 14	263	Cross river, north bank, two and one-half miles below Village of Cross River	Poultry-house..	125	
" 14	263	Cross river, north bank, two and one-half miles below Village of Cross River	Barn and barnyard.....	80	Covered drain from barnyard to a point fifty feet from river. Premises clean.
" 14	264	Small tributary from north, enters river two and three-fourths miles below Village of Cross River....	Manure and garbage heap	100	Large heap, offensive; very steep slope. West bank.
" 14	264	Small tributary from north, enters river two and three-fourths miles below Village of Cross River....	Privy.....	25	Leaky wooden box vault; very steep slope. West bank.
" 14	264	Small tributary from north, enters river two and three-fourths miles below Village of Cross River....	Dwelling	80	Slops thrown out; very steep slope. West bank. Garbage scattered on bank.
" 14	265	Cross river, north bank, two and three-fourths miles below Village of Cross River.....	Privy.....	25	Loose stone vault, unused; premises unoccupied; refuse scattered on bank.
" 14	266	Small tributary from north, enters river three miles below Village of Cross River.....	Dwelling	60	Slops and garbage thrown out; steep slope. West bank.
" 14	266	Small tributary from north, enters river three miles below Village of Cross River.....	Privy	90	Loose stone vault; steep slope. West bank.
" 14	266	Small tributary from north, enters river three miles below Village of Cross River.....	Pig-pen.....	65	Drain from same towards brook; steep slope. West bank.
" 14	266	Small tributary from north, enters river three miles below Village of Cross River	"	15	Large and very filthy. East bank.
" 14	266	Small tributary from north, enters river three miles below Village of Cross River.....	Garbage and manure heap	20	Large heap. East bank.
" 14	267	Small tributary from north, enters river one mile above Katonah....	Dwelling	15	Slops thrown out; no privy on premises. West bank.
" 14	267	Small tributary from north, enters river one mile above Katonah....	Barn	150	West bank.
" 15	268	Cross river, south bank, three-fourths mile above Katonah.....	Dwelling	30	Slops thrown out.
" 15	268	Cross river, south bank, three-fourths mile above Katonah.....	Privy.....	80	Uncemented earth vault; very steep slope.
" 15	268	Cross river, south bank, three-fourths mile above Katonah.....	Poultry-house..	80	Very steep slope.
" 12	269	Cross river, south bank, at Katonah.	Barn	110	Open drain runs from same to river; steep slope for seventy feet.
" 12	269	" "	Garbage and manure heap	110	Open drain runs from same to river; steep slope for seventy feet.
" 12	270	" "	Slaughter-house	15	Tub at back for catching blood and offal, and partly full of same; fifteen feet from river, with open overflow drain to water's edge. Refuse scattered about; driveway to slaughter-house littered with manure. Steep slope.
" 12	270	" "	Barn	75	Steep slope.
" 12	270	" "	Manure heap ..	75	Steep slope; large heap.
" 12	271	Cross river, north bank, at Katonah.	Blacksmithshop	*	
" 12	271	" "	Manure heap ..	20	Open drain from same to river.
" 12	271	" "	Barn	15	
" 12	271	" "	Manure heap ..	30	
" 12	272	" "	Dwelling	35	Kitchen drain from second story empties on to roadway.
" 12	273	" "	Privy	40	Cemented brick vault, full.
" 12	274	" "	Cesspool	30	Loose stone; full and leaking; very offensive.
" 12	275	" "	Privy...	70	Leaky tub vault; forty feet above river.
" 12	275	" "	"	80	Loose stone vault; forty feet above river.
" 12	275	" "	Cesspool	90	Loose stone vault; forty feet above river; receives drainage from large dwelling.
" 12	276	" "	Barn	35	
" 12	276	" "	Manure heap..	35	Large heap.
" 12	277	" "	House-drain...	35	Discharges on edge of roadway.
" 12	278	" "	Dwelling	225	Slops thrown into open paved drain, running down steep slope to roadway, and across same to river.
" 12	278	" "	"	150	Slops thrown into open paved drain, running down steep slope to roadway, and across same to river.
" 12	278	" "	"	50	Slops thrown into open paved drain, running down steep slope to roadway, and across same to river.
" 12	279	" "	Barn	50	On above drain (see No. 278).
" 12	279	" "	"	80	" "
" 12	279	" "	"	140	" "
" 12	279	" "	Manure heap..	50	" "
" 12	279	" "	" ..	80	" "
" 12	279	" "	" ..	140	" "
" 12	279	" "	Hotel	215	Slops thrown into above drain (see No. 278).

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Sept. 12	280	Cross river, north bank, at Katonah.	Garbage heap..	*	North bank of river, through the town, littered in many places with refuse.
" 12	281	Cross river, south bank, at Katonah.	Poultry yard..	100	Large yard; ground flat and sandy.
" 12	282	Cross river, north bank, at Katonah.	Large privy....	150	Steep slope for eighty feet; loose stone vault.
" 12	282	" "	Cesspool	50	Loose stone. Slops thrown out from dwellings, sixty feet from river.
" 12	283	" "	"	50	Cemented stone; receives kitchen slops only; overflow pipe discharges forty feet from river.
" 12	283	" "	Privy	50	Cemented stone vault.
" 12	284	Cross river, south bank, at Katonah.	Large cemetery	164	Measurement from nearest grave; steep slope.
" 12	285	Small tributary from north, enters river at Katonah.....	House-drain ...	75	East bank; steep slope.
" 12	285	Small tributary from north, enters river at Katonah.....	Poultry-house..	60	" "
" 12	285	Small tributary from north, enters river at Katonah.....	Privy.....	75	Loose stone vault. East bank; steep slope.
" 12	286	Cross river, south bank, at Katonah.	Pig-pen.....	*	Precipitous bank, sixty feet high; some refuse on bank.
" 12	286	" "	Barn	10	Precipitous bank. Located back of pig-pen and ten feet above same.
" 12	286	" "	Large privy....	*	Cemented brick vault. Precipitous bank, sixty feet high; some refuse on bank.
" 12	286	" "	Manure pit and cesspool	30	Precipitous bank, sixty feet high. All house drainage (including water-closets) runs into this and overflows down steep bank, one hundred and sixty feet from river and parallel to same.
" 12	287	Cross river, north bank, at Katonah.	Garbage heap..	*	
" 12	287	" "	Dwelling	60	Slops thrown out.
" 12	287	" "	Privy.....	70	Loose stone vault.
" 12	287	" "	Barn.....	60	
" 12	287	" "	Manure heap...	60	
" 12	287	" "	Poultry yard...	70	
" 12	288	" "	Barn	50	Quite steep slope.
" 12	288	" "	Manure heap..	50	"
" 12	289	" "	Privy	40	Cemented stone vault, with box inside.
" 12	289	" "	Poultry yard...	*	
" 12	289	" "	Poultry-house .	30	
" 12	290	" "	Privy..	30	Loose stone vault. Precipitous bank thirty feet high; rock.
" 12	290	" "	Poultry yard...	35	Large yard. Precipitous bank thirty feet high; rock.
" 12	291	" "	Barn	55	Precipitous bank, twenty feet high; rock.
" 12	291	" "	Manure heap...	65	Precipitous bank, twenty feet high; rock.
" 12	292	" "	Large privy ...	100	Cemented stone vault. Precipitous bank, twenty feet high; rock.
" 12	293	" "	Privy.....	70	Uncemented earth vault. Quite steep slope.
" 12	293	" "	Pig-pen.....	70	Quite steep slope.
" 12	293	" "	Dwelling	70	Slops thrown out.
" 12	294	Small tributary from south, enters river at Katonah.....	Privy.....	10	Loose stone vault. West bank; rubbish and filth of all descriptions thrown on bank and into brook for a distance of one hundred feet; brook nearly dry.
" 12	294	Small tributary from south, enters river at Katonah.....	Poultry-house..	*	West bank.
" 12	294	Small tributary from south, enters river at Katonah.....	Barn	*	Unoccupied. West bank.
" 12	294	Small tributary from south, enters river at Katonah.....	Privy.....	*	Tub vault, full and filthy. West bank.
" 12	295	Small tributary from south, enters river at Katonah.....	Garbage heap..	*	East bank.
" 12	295	Small tributary from south, enters river at Katonah.....	Large privy ...	*	Loose stone vault. East bank.
" 12	295	Small tributary from south, enters river at Katonah.....	Dwelling	50	Slops thrown out; east bank.

Summary.		On Water's Edge.	Within 25 Feet.	25 to 50 Feet.	50 to 100 Feet.	100 to 150 Feet.	150 to 250 Feet.	Over 250 Feet.	Total.	
Cemeteries		..	..	..	..	..	1	..	1	
Privies	No vaults	1	1	..	2	1	..	..	5	
	Uncemented earth vault	..	..	..	3	..	..	..	3	
	Loose stone vault	1	3	3	6	1	..	..	14	35
	Cemented stone vault	1	1	3	1	..	..	..	6	
	Wooden box vault	2	..	3	1	1	..	..	7	
Cesspools	Loose stone vault	..	..	3	1	..	..	..	4	5
	Cemented stone vault	..	..	1	..	..	..	..	1	
Slaughter-houses		..	2	..	..	..	..	..	2	
Pig-pens		2	2	2	2	1	..	..	9	
Poultry houses and yards		2	1	3	6	4	..	..	16	
Manure heaps		..	3	5	7	3	..	..	18	
Garbage heaps			1	1	1	2	..	..	8	
Barns and barnyards		3	4	4	8	7	..	..	26	
Horse and cattle sheds		..	..	..	..	1	..	..	1	
Dwellings		3	3	7	10	3	2	..	28	
Factories		2	..	..	..	..	..	..	2	
Total		20	21	35	48	24	3	..	151	

Lake Mahopac and the Muscoot River, with their Tributaries.

Lake Mahopac.—This lake is located near the western limit of the water-shed, about three miles west of the junction of the Middle and West Branches of the Croton river, and four miles south of Reservoir "E," and is about one and one-third miles long and one mile wide at its widest part. The lake is fed almost entirely by springs, having but one tributary, the outlet of Mud pond, which enters it near its northern extremity. The Village of Mahopac is located on the eastern shore of the lake, but is drained by a brook which flows into the combined West and Middle Branches. Cesspools are largely used to receive the drainage of the dwellings located on or near the lake shores, and prevent, to a certain extent, the direct pollution of the water of the lake. In this respect the conditions are much better than those existing on Lake Gleneida. (Compare results of inspection of Lakes Mahopac and Gleneida.) No water can be drawn from Lake Mahopac until after September 1 of each year, and the amount so drawn must not exceed five hundred and forty million gallons, which is equivalent to lowering the water level three feet. At the time of our inspection (September 9, 1891), no water was being drawn from the lake, the natural overflow amounting to a fair-sized brook. The outlet of the lake is at its southwestern extremity, and forms one of the sources of the Muscoot river.

Muscoot River.—The sources of this stream are the outlets of Kirk Lake and Lake Mahopac, which join at the small Village of Mahopac Falls, about one-half mile from Lake Mahopac. From this point the river flows in a general southerly direction for about seven miles, and then easterly for about two miles, to its junction with the Croton river, near Katonah. Its main tributaries are Secor Lake outlet, which enters it from the west, about one and one-fourth miles below Mahopac Falls, and Amawalk brook, a large stream, draining, with its branches, the Towns of Amawalk and Yorktown, and a large extent of territory to the west of the river, which it enters from the west, about seven and one-third miles south of Mahopac Falls. The dam for new Reservoir "A" is being built on the river, about one-third of a mile north of Amawalk brook, under the supervision of the Department of Public Works. The general drainage of the Village of Mahopac Falls is towards the river.

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Sept. 10	296	Lake Mahopac, north shore.....	Barn	60	Steep slope.
" 10	296	" "	Manure and garbage heap.....	60	Retained by cemented brick wall; steep slope.
" 10	296	" "	Privy.....	10	Very deep cemented brick vault; fifteen feet above lake.
" 10	297	" "	Poultry yard...	40	Large number of fowls kept.
" 10	297	" "	Pig-pen	90	
" 10	298	Lake Mahopac, east shore.....	Privy	60	Cemented stone vault; said to be tight.
" 10	298	" "	Dwelling	*	
" 10	298	" "	Cesspool	80	Receives kitchen slops from above dwelling; said to be tight and frequently cleaned.
" 10	299	Lake Mahopac, east shore, at Cole House.....	Two cesspools.	200	Loose stone; receive drainage of kitchen and water-closets in Cole House.
" 10	299	Lake Mahopac, east shore, at Cole House.....	Cesspool	250	Loose stone; receives drainage from laundry at Cole House.
" 10	300	Lake Mahopac, east shore.....	Privy	5	Tight wooden box vault, half full; contents removed at intervals.
" 10	301	" "	"	70	Cemented stone vault; apparently tight.
" 10	302	" "	Store.....	10	Garbage and refuse thrown out.
" 10	303	Lake Mahopac, south shore, at Thompson House.....	Three cesspools	200	Loose stone; receives drainage of kitchen and water-closets in Thompson House
" 10	303	Lake Mahopac, south shore, at Thompson House.....	Cesspool	150	Loose stone; receives overflow from above cesspools; same seldom occurs.
" 10	303	Lake Mahopac, south shore, at Thompson House.....	Privy	35	Wooden box vault, broken; to be removed; near billiard room of Thompson House. Note—Hotel premises are generally in cleanly condition.
" 10	304	Lake Mahopac, south shore.....	Washhouse....	*	Built partly over water; slops thrown into lake. Outbuilding of Thompson House.
" 10	304	" "	Privy	25	Wooden box vault, broken; outbuilding of Thompson House.
" 10	305	" "	Barn	25	Twenty-eight horses; manure frequently removed; outbuilding of Thompson House.
" 10	306	" "	Chicken slaughter-house....	*	Built partly over water; outbuilding of Thompson House.
" 10	306	" "	Poultry yard...	40	On swampy ground, on edge of swamp draining into lake; outbuilding of Thompson House.
" 10	306	" "	Garbage heap..	40	On swampy ground, on edge of swamp draining into lake. Note—Were informed by proprietor of Thompson House that Nos. 301 to 306 would be removed as soon as possible after October 1, 1891.
" 10	307	Lake Mahopac, south shore..... ...	Cesspool.....	100	Cemented stone; receives drainage (including water-closets) of large dwelling. Nearly full, and provided with overflow pipe to drain running to lake.
" 10	307	Lake Mahopac, south shore, at Thompson House...	Barn	40	
" 10	307	Lake Mahopac, south shore, at Thompson House.....	Dwelling	30	Slops thrown out; gardener's house.
" 10	307	Lake Mahopac, south shore, at Thompson House.....	Privy.....	30	Leaky wooden box vault.
" 10	307	Lake Mahopac, south shore, at Thompson House.....	Garbage heap..	35	
" 10	308	Lake Mahopac, on small island, near south shore.....	Privy	100	Cemented brick vault; fresh earth thrown in at intervals.
" 10	308	Lake Mahopac, on small island, near south shore	Cesspool.....	50	Cemented stone; receives kitchen slops only.
" 10	308	Lake Mahopac, on small island, near south shore	Barn	30	
" 10	308	Lake Mahopac, on small island, near south shore.....	Manure pit....	15	Earth bottom; premises generally in cleanly condition.
" 10	309	Lake Mahopac, south shore	Dwelling	12	Slops thrown out.
" 10	309	" "	Privy	10	Cemented stone vault.
" 10	310	" "	Dwelling	25	Slops thrown into open drain running to lake.
" 10	310	" "	Privy	10	Deep cemented stone vault.
" 10	310	" "	Poultry-house .	10	
" 10	311	" "	Privy	15	Cemented stone vault with tight box inside; same full of liquid filth.
" 10	311	" "	Barn	20	Manure scattered about.
" 10	311	" "	Cesspool	40	Loose stone; receives kitchen slops only.
" 10	312	" "	Privy.....	5	Shallow earth vault; dry ashes thrown in daily and the whole frequently removed; clean and dry at time of inspection.
" 10	312	" "	Cesspool.....	10	Loose stone; receives pantry slops only.
" 10	312	" "	"	5	Loose stone; receives kitchen slops only.
" 10	313	Small tributary, entering lake from the south.....	Dwelling	15	Slops thrown into brook. West bank.
" 10	313	Small tributary, entering lake from the south.....	Barn	150	East bank.
" 10	313	Small tributary, entering lake from the south.....	Manure heap...	150	
" 10	314	Lake Mahopac outlet, south bank	Poultry yard...	*	
" 10	314	" "	Dwelling	15	Slops thrown out.
" 10	314	" "	Privy	15	Cemented stone vault.
" 10	315	" "	"	15	"
" 10	315	" "	Dwelling.....	5	Slops thrown out.
" 10	316	" "	Barn	*	Very clean; manure frequently removed.
" 10	316	" "	Privy	50	Tight wooden box vault.
" 10	316	" "	Barn	100	Premises generally clean.
" 10	317	Muscoot river, east bank, at Mahopac Falls.....	Privy	30	Uncemented earth vault.
" 10	318	Muscoot river, west bank, at Mahopac Falls	"	15	Cemented stone vault.
" 10	318	Muscoot river, west bank, at Mahopac Falls	"	5	Uncemented earth vault.
" 10	318	Muscoot river, west bank, at Mahopac Falls	Two barns.....	*	

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Sept. 10	318	Muscoot river, west bank, at Mahopac Falls	Manure heap..	*	
" 10	319	Muscoot river, east bank, at Mahopac Falls	Barn	*	
" 10	319	Muscoot river, east bank, at Mahopac Falls	Manure heap ..	*	
" 10	320	Small tributary from northwest, enters river one-half mile below Mahopac Falls	Privy	*	Tight wooden box vault. East bank.
" 10	320	Small tributary from northwest, enters river one-half mile below Mahopac Falls	Manure heap..	15	East bank.
" 10	321	Small tributary from northwest, enters river one-half mile below Mahopac Falls	Privy	10	Deep loose stone vault. East bank.
" 10	321	Small tributary from northwest, enters river one-half mile below Mahopac Falls	Dwelling	*	Slops thrown out. East bank.
" 10	322	Muscoot river, east bank, two and one half miles below Mahopac Falls	Privy	60	Now unused, but contains excrement; premises unoccupied; uncemented earth vault.
" 10	323	Muscoot river, west bank, two and one-half miles below Mahopac Falls	Barn	50	
" 10	323	Muscoot river, west bank, two and one-half miles below Mahopac Falls	Manure heap ..	100	
" 11	324	Muscoot river, east bank, five miles below Mahopac Falls	Privy.....	100	Loose stone vault; steep slope.
" 11	324	Muscoot river, east bank, five miles below Mahopac Falls	Dwelling	125	Slops thrown out; steep slope.
" 11	324	Muscoot river, east bank, five miles below Mahopac Falls	Pig-pen.....	100	Steep slope; fifteen cows standing in river.
" 11	325	Muscoot river, east bank, five and one-fourth miles below Mahopac Falls	Barn and barnyard...	80	
" 11	325	Muscoot river, east bank, five and one-fourth miles below Mahopac Falls	Manure heap..	80	Very large heap.
" 11	325	Muscoot river, east bank, five and one-fourth miles below Mahopac Falls	Pig-pen.....	150	Open drain runs from pig-pen to barnyard.
" 11	326	Muscoot river, west bank, at office of Engineer, new Reservoir "A"	Barn	100	Cow barn now unoccupied; within line of new reservoir.
" 11	326	Muscoot river, west bank, at office of Engineer, new Reservoir "A"	"	60	Three horses; within line of new reservoir.
" 11	326	Muscoot river, west bank, at office of Engineer, new Reservoir "A"	Manure heap..	60	Within line of new reservoir.
" 11	326	Muscoot river, west bank, at office of Engineer, new Reservoir "A"	Large pig-pen.	47	Now unoccupied; dirty; within line of new reservoir.
" 11	327	Small spring, tributary from east, enters river one-third mile below No. 326	Barn and barnyard..	30	Manure in barnyard; open drain runs through same to brook; within line of new reservoir.
" 11	328	Small tributary from east, enters river three-fourths mile below No. 326	Dwelling	10	Quarters of laborers employed on dam; slops and garbage thrown into brook.
" 11	328	Muscoot river, east bank, at junction of above tributary	Privy.....	100	Uncemented earth vault; measurement from point to which excrement flows through open drain from privy down steep slope. Clothes washed in river.
" 11	329	Muscoot river, west bank, two and one-fourth miles above junction with Croton river	Manure pit....	20	Cemented stone; manure removed at intervals. At settlement of the Christian Brotherhood; premises generally in good sanitary condition; dormitories provided with tight cesspools, frequently cleaned; no privies.

Summary.	On Water's Edge.	Within 25 Feet.	25 to 50 Feet.	50 to 100 Feet.	100 to 150 Feet.	150 to 250 Feet.	Over 250 Feet.	Total.	
Cemeteries	..	..	..	..	..	..	..	..	
Privies: No vault	..	1	..	..	..	..	..	1	
Privies: Uncemented earth vault	..	1	1	2	..	..	..	4	
Privies: Loose stone vault	..	1	..	1	..	..	..	2	23
Privies: Cemented stone vault	..	6	..	3	..	..	..	9	
Privies: Wooden box vault	1	3	3	..	..	..	..	7	
Cesspools: Loose stone vault	..	2	1	..	1	6	..	10	13
Cesspools: Cemented stone vault	..	..	1	2	..	..	..	3	
Slaughter-houses	..	..	..	..	..	..	..	..	
Pig-pens	..	..	1	2	1	..	..	4	
Poultry houses and yards	2	1	2	..	..	..	..	5	
Manure heaps	2	3	..	4	1	..	..	10	
Garbage heaps	..	..	2	1	..	..	..	3	
Barns and barnyards	4	2	4	5	1	..	..	16	
Horse and cattle sheds	..	..	..	..	..	..	..	..	
Dwellings	3	7	1	..	1	..	..	12	
Factories	..	..	..	..	..	..	..	..	
Total	12	27	16	20	5	6	..	86	

The Croton River, from the Junction of its Branches to Croton Lake, with its Tributaries.

From the junction of the combined Middle and West Branches with the East Branch, just below Croton Falls, this stream flows in a general southwesterly direction to the head of Croton Lake, a distance of about eight miles. A portion of the towns of Purdy's, Golden's Bridge and Katonah are located on the east bank. Its main tributaries, exclusive of the Titicus, Cross and Muscoot rivers, already described, are Plum brook, a large stream draining the Town of Somers Centre, and entering the river from the west about three-fourths mile below Golden's Bridge, and two large brooks, entering the river from the east, at points respectively just above and about one and three-fourths miles below Golden's Bridge. A small tributary from the east flows through Golden's Bridge and drains the town. At the time of our inspection (September 16) this stream was dry from the river to a point about the centre of the village, but at most seasons it is a fair sized brook.

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Sept. 19	330	Croton river, east bank, one mile below Croton Falls	Dwelling	75	Slops thrown out.
" 19	330	Croton river, east bank, one mile below Croton Falls	Privy.....	25	Uncemented earth vault.
" 19	331	Small tributary from west, enters river one-fourth mile above Purdy's	Two barns.....	45	Large cow barns; brook flows through barnyard. North bank.
Sept. 19	332	Small tributary from west, enters river one-fourth mile above Purdy's	Dwelling	35	Slops thrown out; premises filthy. North bank.
" 19	332	Small tributary from west, enters river one-fourth mile above Purdy's	Poultry-house..	*	Premises filthy. North bank.
" 19	332	Small tributary from west, enters river one-fourth mile above Purdy's	Privy	60	Uncemented earth vault; premises filthy. North bank.
" 19	333	Croton river, west bank, near junction of above tributary	Dwelling	40	Slops thrown out.
" 19	333	Croton river, west bank, near junction of above tributary	Poultry-house .	40	
" 19	333	Croton river, west bank, near junction of above tributary	Privy.....	110	Uncemented earth vault.
" 19	334	Croton river, east bank, at Purdy's	Barn	70	
" 19	334	" "	Manure heap..	70	
" 19	334	" "	Two garbage heaps	*	
" 19	334	" "	Pig-pen	35	Very filthy.
" 19	334	" "	Manure heap..	35	Large heap from pig-pen.
" 19	334	" "	Poultry yard ..	45	
" 19	334	" "	Privy.....	100	Loose stone vault.
" 19	334	" "	Barn	100	
" 19	335	" "	Privy.....	100	Loose stone vault.
" 19	335	" "	Poultry yard ..	*	
" 19	335	" "	Garbage heap..	*	
" 19	336	" "	Poultry yard...	*	
" 19	336	" "	Privy.....	30	Loose stone vault.
" 19	337	Small tributary from east, enters river three-fourths mile below Purdy's	Large pig-pen .	25	Unoccupied; very steep slope. North bank.
" 19	337	Small tributary from east, enters river three-fourths mile below Purdy's	Poultry yard ..	25	Very steep slope. North bank.
" 19	338	Small tributary from east, enters river three-fourths mile below Purdy's	Barn.....	100	North bank.
" 19	338	Small tributary from east, enters river three-ourths mile below Purdy's	Manure heap..	100	"
" 19	339	Small tributary from east, enters river three-fourths mile below Purdy's	Privy	150	Loose stone vault. South bank; steep slope.
" 19	340	Large tributary from east, enters river one-fourth mile above Golden's Bridge	Dwelling	30	Slops thrown out. North bank.
" 19	340	Large tributary from east, enters river one-fourth mile above Golden's Bridge	Poultry-house..	60	North bank.
" 19	340	Large tributary from east, enters river one-fourth mile above Golden's Bridge	Privy..	130	Uncemented earth vault. North bank.
" 16	341	Small tributary from east, through Golden's Bridge, north bank	Dwelling	70	Slops thrown out.
" 16	342	Small tributary from east, through Golden's Bridge, south bank	Barn	30	
" 16	342	Small tributary from east, through Golden's Bridge, south bank	Manure heap..	50	
" 16	343	Small tributary from east, through Golden's Bridge, north bank	Barn	60	Barnyard, containing manure, extends to water's edge.
" 16	344	Small tributary from east, through Golden's Bridge, north bank	Privy	50	Loose stone vault; steep slope; open drain alongside same to brook.
" 16	344	Small tributary from east, through Golden's Bridge, north bank	Barn	60	
" 16	344	Small tributary from east, through Golden's Bridge, north bank	Manure heap..	60	
" 16	344	Small tributary from east, through Golden's Bridge, north bank	Dwelling	80	Slops thrown out, ten feet from spring, overflow pipe from which discharges fifty feet from brook; premises in general littered with rubbish.
" 16	345	Small tributary from east, through Golden's Bridge, south bank	"	80	Slops thrown out; steep slope.
" 16	345	Small tributary from east, through Golden's Bridge, south bank	Privy.....	75	Uncemented earth vault; steep slope.
" 16	345	Small tributary from east, through Golden's Bridge, south bank	Garbage heap..	75	Steep slope.
" 16	346	Small tributary from east, through Golden's Bridge, south bank	Cesspool.....	100	Loose stone; twenty feet above brook; receives kitchen slops only.
" 16	346	Small tributary from east, through Golden's Bridge, south bank	Privy	115	Loose stone vault; twenty feet above brook.
" 16	347	Small tributary from east, through Golden's Bridge, north bank	Barn	*	
" 16	347	Small tributary from east, through Golden's Bridge, north bank	Manure heap..	*	Brook runs under barnyard and dries up at corner of barn.
" 16	348	Small tributary from east, through Golden's Bridge, north bank	Privy.....	50	Uncemented earth vault.
" 16	348	Small tributary from east, through Golden's Bridge, north bank	Dwelling	90	Slops thrown out.
" 16	349	Small tributary from east, through Golden's Bridge, north bank	Privy.....	75	Loose stone vault.
" 16	349	Small tributary from east, through Golden's Bridge, north bank	Barn	150	
" 16	349	Small tributary from east, through Golden's Bridge, north bank	Manure heap..	150	
" 16	350	Small tributary from east, through Golden's Bridge, north bank	Dwelling	60	Slops thrown out; quite steep slope.
" 16	350	Small tributary from east, through Golden's Bridge, north bank	Privy	10	Uncemented earth vault.
" 16	351	Small tributary from east, through Golden's Bridge, north bank	"	40	Loose stone vault.
" 16	351	Small tributary from east, through Golden's Bridge, north bank	Poultry yard..	40	
" 16	351	Small tributary, from east, through Golden's Bridge, north bank	Dwelling	20	Slops thrown out; open drain from house to brook.
" 16	352	Small tributary from east, through Golden's Bridge, north bank	Privy.....	40	No vault; steep slope.
" 16	353	Small tributary from east, through Golden's Bridge, north bank	Large pig-pen..	85	Filthy; blood and offal from barn (used as slaughter-house four days per week) thrown into pen.
" 16	353	Small tributary from east, through Golden's Bridge, north bank	Poultry-house..	100	
" 16	353	Small tributary from east, through Golden's Bridge, north bank	Manure heap..	75	
" 19	354	Croton river, east bank, at Golden's Bridge	Barn	150	Now unoccupied.
" 19	354	Croton river, east bank, at Golden's Bridge	Manure heap..	150	
" 19	354	Croton river, east bank, at Golden's Bridge	Privy.....	250	Loose stone vault. On ledge, fifteen feet above edge of marsh drained by river.
" 19	355	Croton river, east bank, at Golden's Bridge	Barn and barnyard. .	250	On edge of boggy ground, drained by river.
" 19	356	North branch of large tributary from east, enters river one fourth mile below Golden's Bridge	Dwelling	60	Slops thrown out. West bank.
" 19	356	North branch of large tributary from east, enters river one-fourth mile below Golden's Bridge	Privy.....	150	Tight wooden box vault. West bank.
" 19	357	North branch of large tributary from east, enters river one-fourth mile below Golden's Bridge.	Barn	30	Steep slope. West bank.
" 19	357	North branch of large tributary from east, enters river one-fourth mile below Golden's Bridge	Manure heap..	30	" "
" 19	358	North branch of large tributary from east, enters river one-fourth mile below Golden's Bridge	Barn	25	Pigs kept in same; steep slope. West bank.
" 19	359	Croton river, east bank, at Katonah	Privy	120	Uncemented earth vault.
" 19	360	Small tributary from east, enters river at Katonah	Dwelling	60	Slops thrown out. North bank. Sixty feet from river itself.

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Sept. 16	360	Small tributary, from east, enters river at Katonah	Privy	60	Uncemented earth vault; steep slope. North bank.
" 16	361	Small tributary from east, enters river at Katonah	Dwelling	50	Slops thrown out; quite steep slope. South bank.
" 16	362	Croton river, east bank, at Katonah	Barn	80	Steep slope.
" 16	362	" "	Manure heap	80	"

		On Water's Edge.	Within 25 Feet.	25 to 50 Feet.	50 to 100 Feet.	100 to 150 Feet.	150 to 250 Feet.	Over 250 Feet.	Total.	
Cemeteries		..	..	..	..	..	..	..	..	
Privies	No vault	..	..	1	..	..	..	..	1	20
	Uncemented earth vault	..	2	1	3	3	..	..	9	
	Loose stone vault	..	..	3	3	2	1	..	9	
	Cemented stone vault	..	..	..	..	..	..	..	..	
	Wooden box vault	..	..	..	..	1	..	..	1	
Cesspools	Loose stone vault	..	..	..	1	..	..	..	1	1
	Cemented stone vault	..	..	..	..	..	..	..	..	
Slaughter-houses		..	..	..	..	..	..	..	..	
Pig-pens		..	1	1	1	..	..	..	3	
Poultry houses and yards		3	1	3	2	..	..	..	9	
Manure heaps		1	..	3	5	2	..	..	11	
Garbage heaps		3	..	..	1	..	..	..	4	
Barns and barnyards		1	1	4	6	2	1	..	15	
Horse and cattle sheds		..	..	..	..	..	..	..	..	
Dwellings		..	1	4	8	..	..	..	13	
Factories		..	..	..	..	..	..	..	..	
Total		8	6	20	30	10	2	..	76	

Croton Lake, with its Tributaries.

This lake is formed by Croton Dam, at which point the gate-houses of the Old and New Aqueducts are located. It is a narrow body of water, about five miles in length, lying in a general northeast and southwest direction. The Village of Pines Bridge is located on its eastern shore, about midway between its northern and southern extremities, and is drained by a small tributary entering the lake at this point.

We first visited the lake on August 14, 1891, and at that time found the water near the dam to be full of a vegetable growth, consisting of algae in the form of minute silklike threads. Its temperature near the dam, and ten feet below the surface, was 77° Fahr. The water-level was about ten feet below the spillway at the dam. At the time of final inspection (September 24 and 25, 1891) the water had risen to within three feet of the spillway, and the vegetable growth above noted had largely disappeared. The temperature of the water at Pines Bridge, midway between the north and south banks, was at bottom 72° Fahr., at top 74° Fahr. The air temperature at the same time was 78° Fahr.

The shores of the lake are unprotected by a wall at any point, and arable lands, with growing crops, extend to the water's edge at several points. A highway runs directly along the lake for a distance of about five miles on north and south shores, and road washings are carried into the lake by every rain-fall. At time of our inspection, cattle were grazing along the shores at several points, and standing in the lake. Much boating and fishing is done on the lake, twelve boats being counted at Pines Bridge alone. Considerable horse manure lay on the bridge crossing the lake at Pines Bridge. The brush and taller weeds along the lake shores had recently been gathered and burned, but a thick growth of weeds still remained, extending down to water level all around the lake.

A number of small tributaries enter the lake on both shores. The most important are as follows:

(1) Two large brooks, entering the lake from the south at nearly the same point, about one and two-thirds miles above the dam, and draining a considerable area. The brook to the west passes through the town of Cornell.

(2) Kisco brook. This is a large stream, entering the lake from the south, about three miles above the dam. Its branches pass through and drain the Village of Newcastle, and the large Town of Mount Kisco. A considerable portion of the latter town is located directly upon or on the edge of marshy ground, and in order to improve the land, open drains have been cut in every direction, connecting with the branch of Kisco brook which passes through the town, and draining the latter to a large extent, directly into the branch. Kirby's pond was located at the north end of the village of Newcastle, but is now converted into arable land, by subsoil drainage and removal of the dam. "Oakview" Cemetery is located on a sandy elevation near the branch of the brook which passes through Newcastle (see enumeration). It is a large cemetery, and in constant use as a place of burial.

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Sept. 25	363	Small tributary from north, enters lake four and one-half miles above dam	Poultry yard	60	West bank.
" 25	363	Small tributary from north, enters lake four and one-half miles above dam	Dwelling	100	Slops thrown out. West bank.
" 25	364	Small tributary from north, enters lake four and one-half miles above dam	Cesspool	100	Loose stone; receives house drainage, including water-closet; tile drain runs from cesspool to sand and broken rock, near spring emptying into brook; measurement made from end of drain to spring.
" 25	365	Small tributary from north, enters lake three miles above dam	Barn	160	West bank. Pig wallow (now dry) on water's edge.
" 25	365	Small tributary from north, enters lake three miles above dam	Poultry yard	120	West bank. Brook runs through field in which are horses, pigs, hens and geese.
" 25	366	Small tributary from north, enters lake two and three-fourths miles above dam	Barn	25	West bank.
" 25	366	Croton Lake, north shore, at junction of above tributary	"	165	
" 25	366	Croton Lake, north shore, at junction of above tributary	Manure heap	165	
" 25	366	Croton Lake, north shore, at junction of above tributary	Pig-pen	165	
" 25	367	Croton Lake, north shore, two and one-half miles above dam	Dwelling	70	Slops thrown out; steep slope to roadway on edge of lake.
" 25	367	Croton Lake, north shore, two and one-half miles above dam	Privy	120	Loose stone vault; steep slope.
" 25	368	Croton Lake, north shore, two and one-fourth miles above dam	Dwelling	160	Slops thrown out.
Sept. 25	368	Croton Lake, north shore, two and one-fourth miles above dam	Privy	160	Loose stone vault.
" 25	369	Croton Lake, north shore, two miles above dam	Dwelling	200	Slops thrown out.
" 25	369	Croton Lake, north shore, two miles above dam	Privy	200	Uncemented earth vault.
" 25	370	Croton Lake, north shore, opposite Pines Bridge	Blacksmith shop	50	
" 25	371	Croton Lake, north shore, at Croton Lake Station, about one and one-half miles above dam	Barley pit	900	Full of rotting grain and very offensive; open drain from same down steep slope to lake.
" 25	372	Small tributary from north, enters lake one and one-eighth miles above dam	Dwelling	100	Slops thrown out; precipitous bank, twenty-five feet high. West bank.
" 25	372	Small tributary from north, enters lake one and one-eighth miles above dam	Privy	50	No vault; precipitous bank, twenty-five feet high. West bank.
" 25	372	Small tributary from north, enters lake one and one-eighth miles above dam	Poultry-house	*	Precipitous bank, twenty-five feet high. West bank.
" 25	373	Small tributary from north, enters lake one and one-eighth miles above dam	Dwelling	80	Slops thrown out; rubbish thrown down bank. West bank.
" 25	373	Small tributary from north, enters lake one and one-eighth miles above dam	Barn	*	West bank.
" 25	373	Small tributary from north, enters lake one and one-eighth miles above dam	Manure pit	*	West bank.
" 25	373	Small tributary from north, enters lake one and one-eighth miles above dam	Pig-pen	10	East bank.
" 25	374	Small tributary from north, enters lake five-eighths mile above dam	Barn	80	West bank.
" 25	374	Small tributary from north, enters lake five-eighths mile above dam	Manure heap	80	"
" 25	374	Small tributary from north, enters lake five-eighths mile above dam	Poultry-house	60	"
" 25	374	Small tributary from north, enters lake five-eighths mile above dam	Barn	50	East bank.
" 25	375	Small tributary from north, enters lake one-half mile above dam	Dwelling	110	Slops thrown out. West bank. Eighty-five feet from lake itself.
" 25	375	Small tributary from north, enters lake one-half mile above dam	Privy	135	Loose stone vault.
" 25	376	Small tributary from north, enters lake three-eighths mile above dam	Two privies	15	Loose stone vault; school-house privies
" 25	377	Small tributary from south, enters lake one-eighth mile above dam	Privy	25	Loose stone vault; premises generally dirty. West bank.
" 25	377	Small tributary from south, enters lake one-eighth mile above dam	Dwelling	25	Slops thrown into covered drain, discharging into brook. East bank. Brook nearly dry; runs down steep slope.
" 25	378	Small tributary from south, enters lake one-eighth mile above dam	"	35	Slops thrown out; steep slope. West bank.
" 25	378	Small tributary from south, enters lake one-eighth mile above dam	Pig-pen	125	Steep slope; premises dirty. West bank.
" 25	379	Small tributary from south, enters lake one-half mile above dam	Barn	20	East bank.
" 25	379	Small tributary from south, enters lake one-half mile above dam	Pig-pen	50	"
" 25	380	Small tributary from south, enters lake one-half mile above dam	Dwelling	30	Slops thrown out. East bank.
" 25	380	Small tributary from south, enters lake one-half mile above dam	Privy	90	Loose stone vault. East bank.
" 25	381	Large tributary from south, enters lake near Cornell, one and two-thirds miles above dam	Dwelling	60	Slops thrown out. West bank.
" 25	381	Large tributary from south, enters lake near Cornell, one and two-thirds miles above dam	Barn	75	West bank.
" 25	382	Large tributary from south, enters lake near Cornell, one and two-thirds miles above dam	"	75	East bank.
" 25	382	Large tributary from south, enters lake near Cornell, one and two-thirds miles above dam	Blacksmith shop	75	"
" 25	383	Large tributary from south, enters lake near Cornell, one and two-thirds miles above dam	Dwelling	100	Slops thrown out; junction of brook with lake. East bank.
" 25	383	Large tributary from south, enters lake near Cornell, one and two-thirds miles above dam	Privy	175	Loose stone vault; excrement oozing out from same. East bank.
" 25	384	Croton Lake, south shore, one and three-fourths miles above dam	Cesspool	75	Loose stone; receives house drainage, including water-closets.
" 25	385	Small tributary from south, through Pines Bridge, two miles above dam	Dwelling	20	Slops and garbage thrown down steep bank. West bank.
" 25	385	Small tributary from south, through Pines Bridge, two miles above dam	Privy	60	Wooden box vault, broken; steep slope. West bank.
" 25	386	Small tributary from south, through Pines Bridge, two miles above dam	Dwelling	30	Slops thrown out; steep slope. East bank.
" 25	386	Small tributary from south, through Pines Bridge, two miles above dam	Privy	30	Wooden box vault; steep slope. East bank. Premises generally dirty.
" 25	387	Small tributary from south, through Pines Bridge, two miles above dam	Barn	*	West bank.
" 25	387	Small tributary from south, through Pines Bridge, two miles above dam	Manure and garbage heap	25	Large heap. West bank. Steep slope.
" 25	388	Small tributary from south, through Pines Bridge, two miles above dam	Barn	25	Sheep kept in barn. West bank.
" 25	388	Small tributary from south, through Pines Bridge, two miles above dam	Garbage pit	35	Steep slope; garbage scattered on same, ten feet from brook. West bank.
" 25	388	Small tributary from south, through Pines Bridge, two miles above dam	Cesspool	50	Cemented stone, tight; receives house drainage. West bank.
" 25	388	Small tributary from south, through Pines Bridge, two miles above dam	Privy	50	Wooden box vault; steep slope; hole thirty feet from brook, in which contents of privy vault have apparently been buried. West bank.
" 25	389	Small tributary from south, through Pines Bridge, two miles above dam	Barn	*	East bank.
" 25	389	Small tributary from south, through Pines Bridge, two miles above dam	Manure heap	*	"
" 25	389	Small tributary from south, through Pines Bridge, two miles above dam	Privy	25	No vault; barn and privy on open drain running towards lake. East bank. Brook runs underground. During spring freshets, these are overflowed.
" 25	389	Small tributary from south, through Pines Bridge, two miles above dam	Store	*	Rubbish thrown out; premises dirty; directly over brook.
" 25	390	Croton Lake, south shore, at Pines Bridge	Dwelling	60	Slops thrown out.
" 25	391	Croton Lake, south shore, at Pines Bridge, Croton Lake Hotel	Cesspool	100	Hole, filled with loose stone; receives kitchen and wash-basin drainage.
" 25	391	Croton Lake, south shore, at Pines Bridge, Croton Lake Hotel	Privy	125	Wooden box vault.
" 25	391	Croton Lake, south shore, at Pines Bridge	Poultry-house	125	

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.
Sept. 25	391	Croton Lake, south shore, at Pines Bridge	Barn	150	
" 25	391	Croton Lake, south shore, at Pines Bridge	Manure pit	150	Open drain runs from barnyard to roadway, thirty-five feet from lake.
" 25	392	Croton Lake, south shore, two and seven-eighths miles above dam	Privy	175	Loose stone vault; unused; premises unoccupied.
" 22	393	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Cemetery	100	Measurement made from edge of former pond (Kirby's pond) now drained. West bank.
" 22	394	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Dwelling	55	Slops thrown out; measurement made from west bank of open drain, now dry, connecting with brook.
" 22	394	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Privy	75	Loose stone vault; measurement made from west bank of open drain, now dry, connecting with brook.
" 22	394	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Poultry yard	90	Measurement made from west bank of open drain, now dry, connecting with brook.
" 22	395	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Barn	40	East bank.
" 22	395	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Manure heap	40	"
" 22	396	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Privy	15	Loose stone vault West bank.
" 22	396	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Dwelling	70	Slops thrown out. West bank.
" 22	397	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	"	60	Unoccupied. West bank.
" 22	397	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Privy	10	Loose stone vault, unused. West bank.
" 22	398	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Dwelling	30	Slops and garbage thrown into brook. West bank.
" 22	398	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Privy	10	Loose stone vault. West bank.
" 22	398	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Poultry yard	5	West bank.
" 22	399	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Privy	5	No vault. West bank.
" 22	399	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Barn	*	Garbage and refuse thrown into brook. West bank.
" 22	399	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Liquor store	50	Slops thrown out. West bank.
" 22	400	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Dwelling	25	Unoccupied. East bank.
" 22	400	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Privy	10	Loose stone vault, unused. East bank.
" 22	401	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	"	175	Loose stone vault. West bank.
" 22	401	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Dwelling	100	Slops thrown out. West bank.
" 22	402	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Three dwellings	70	Now unoccupied; summer residences; on south bank of pond formed by brook.
" 22	402	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Privy	50	Loose stone vault, now unused; on south bank of pond formed by brook.
" 22	403	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Newcastle	Cemetery	150	"Oakview Cemetery;" measurement made from nearest grave to marsh, drained by brook which flows around southern end of cemetery; soil sandy and porous; in constant use as a place of burial
" 22	404	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Privy	100	No vault. North bank.
" 22	404	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Dwelling	120	Slops thrown out. North bank.
" 22	404	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passsing through Mount Kisco	Poultry-house	60	North bank.
" 22	405	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Privy	10	Uncemented earth vault. North bank.
" 22	405	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Dwelling †	*	Slops and garbage thrown into brook. North bank.
" 22	406	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	" †	*	Slops and garbage thrown into brook. North bank. Premises filthy.
" 22	406	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Privy †	*	Wooden box vault, overflowing and very filthy; premises filthy. North Bank.
" 22	407	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Dwelling †	*	Slops and garbage thrown into brook; premises filthy. North bank.
" 22	407	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Privy †	20	Wooden box vault, full and very filthy; premises filthy. North bank.
" 22	407	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Poultry-house	10	North bank.
" 22	408	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Dwelling	40	Slops thrown out. South bank.
" 22	408	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Barn	60	South bank.
Sept. 22	408	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Privy	75	Box vault, full and filthy. South bank.
" 22	408	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Poultry yard	85	South bank.
" 22	409	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Blacksmith shop	30	"
" 22	410	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Dwelling	*	Slops and garbage thrown into brook. North bank.
" 22	410	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Two privies	40	Uncemented earth vaults. North bank.
" 22	410	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	"	60	Uncemented earth vaults. North bank.
" 22	411	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Four garbage heaps	35	North bank.
" 22	412	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Pig-pen	15	Filthy; garbage thrown alongside and into brook. South bank.
" 22	413	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	"	60	Very filthy. North bank.
" 22	413	Kisco brook, large tributary from south, enters lake three miles above dam. Branch passing through Mount Kisco	Poultry-house	60	North bank.
" 22	414	Marsh, south of Kisco brook, in Mount Kisco; no drains in same, connecting directly with brook	Pig-pen	*	Garbage and manure alongside. East edge.
" 22	414	Marsh, south of Kisco brook, in Mount Kisco; no drains in same, connecting directly with brook	Manure heap	*	East edge.
" 22	414	Marsh, south of Kisco brook, in Mount Kisco; no drains in same, connecting directly with brook	Barn	*	"
" 22	414	Marsh, south of Kisco brook, in Mount Kisco; no drains in same, connecting directly with brook	Privy	25	Wooden box vault. East edge.
" 22	415	Marsh, south of Kisco brook, in Mount Kisco; no drains in same, connecting directly with brook	"	*	Wooden box vault, nearly full. East edge.
" 22	416	Marsh, south of Kisco brook, in Mount Kisco; no drains in same, connecting directly with brook	"	*	Wooden box vault. East edge. Slops and garbage thrown into marsh.
" 22	417	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Barn	*	
" 22	417	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Pig-pen	*	Excrement oozing directly into rain.
" 22	417	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Manure heap	10	
" 22	418	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Large barn	*	
" 22	418	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Two privies	*	No vaults.
" 22	419	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Pig-pen	*	
" 22	419	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Privy	*	Wooden box vault; garbage scattered about.
" 22	420	Open drains north of Kisco brook, in Mount Kisco; connect directly with brook	Horse shed	10	Manure in same.
" 22	420	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Privy	60	No vault.
" 22	421	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Large cattle yard	*	Bounded by drain on two sides; bones, garbage and manure in yard.
" 22	421	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Slaughter-house	60	In corner of above yard. Very clean, blood and offal removed in tight receptacles daily.
" 22	421	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Poultry-house	40	In corner of above yard.
" 22	422	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Pig-pen	30	In corner of above yard. Extremely filthy.
" 22	422	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Privy	30	In corner of above yard. No vault.
" 23	423	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Large barn	100	
" 23	424	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Barn	60	
" 23	424	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Manure heap	60	
" 23	425	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Large barn	*	
" 23	425	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Manure heap	*	
" 23	425	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Privy	15	Wooden box vault. In large yard, bounded on three sides by drains.
" 23	425	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Poultry yard	25	
" 23	425	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Dwelling	50	Slops thrown out; garbage thrown into drain.
" 23	426	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	"	40	Slops thrown out.
" 23	426	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Privy	30	Loose stone vault.
" 23	427	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	"	10	School-house privy (boys'); urina in same discharges into drain; wooden box vault.
" 23	427	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	"	*	School-house privy (girls'); wooden box vault.
" 23	428	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Barn	50	
" 23	428	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	"	*	
" 23	429	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Privy	50	Loose stone vault
" 23	430	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Barn	50	
" 23	431	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Poultry yard	*	

† These premises are overflowed during spring freshets. In 1891 water was eighteen inches above the banks and washed out contents of privies, etc.

Date of Inspection.	Map No.	Location.	Source of Probable Contamination.	Distance from Water's Edge, in Feet.	Remarks.	
Sept. 23	431	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Privy	*	Wooden box vault.	
" 23	431	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Barn	25		
" 23	431	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Manure heap	10		
" 23	432	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Privy	*	Wooden box vault.	
" 23	433	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Poultry yard	*		
" 23	433	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Dwelling	75	Slops thrown out.	
" 23	433	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Privy	35	Wooden box vault, broken.	
" 23	434	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	"	70	Loose stone vault.	
" 23	435	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Barn	*		Premises in general extremely filthy.
" 23	435	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Manure and garbage heap	*	Very large heap	
" 23	435	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Barn	*		
" 23	435	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Dwelling	*	Slops thrown out	
" 23	435	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Privy	60	Wooden box vault	
" 23	435	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Manure heap	40	Filthy	
" 23	436	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Dwelling	30	Slops thrown out.	
" 23	436	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Privy	60	Wooden box vault.	
" 23	436	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Barn	60	On dry drain connecting with main drain.	
" 23	436	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Manure heap	60		
" 23	437	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Poultry-house	*		
" 23	437	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Pig-pen	30		
" 23	437	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Privy	60	Wooden box vault.	
" 23	437	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Dwelling	80	Slops thrown out.	
" 23	438	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Privy	60	Wooden box vault.	
" 23	438	Open drains, north of Kisco brook, in Mount Kisco; connect directly with brook	Dwelling	25	Slops and garbage thrown into drain; same filthy.	
" 23	439	Open drain, south of Kisco brook, in Mount Kisco; connects directly with brook	Barn	50		
" 23	439	Open drain, south of Kisco brook, in Mount Kisco; connects directly with brook	Dwelling	30	Slops thrown out.	
" 23	439	Open drain, south of Kisco brook, in Mount Kisco; connects directly with brook	Privy	60	Wooden box vault.	
" 23	440	Open drain, north of Kisco brook, in Mount Kisco; connects directly with brook	Dwelling	20	Slops thrown out.	
" 23	440	Open drain, north of Kisco brook, in Mount Kisco; connects directly with brook	Privy	20	Tight wooden box vault.	
" 23	441	Kisco brook, branch passing through Mount Kisco	Barn	*	Unoccupied. North bank.	
" 23	442	Kisco brook, branch passing through Mount Kisco	Dwelling	10	" "	
" 23	442	Kisco brook, branch passing through Mount Kisco	Privy	10	Uncemented earth vault, unused. North bank.	
" 23	443	Kisco brook, branch passing through Mount Kisco	Dwelling	30	Slops and garbage thrown into brook. South bank.	
" 23	443	Kisco brook, branch passing through Mount Kisco	Privy	40	Uncemented earth vault. South bank.	
" 25	444	Kisco brook, near junction with Croton Lake	Dwelling	50	Slops thrown out. North bank.	
" 23	444	Kisco brook, near junction with Croton Lake	Garbage heap	25	Offensive. North bank.	
" 23	444	Kisco brook, near junction with Croton Lake	Privy	175	Loose stone vault. North bank.	

Summary.	On Water's Edge.	Within 25 Feet.	25 to 50 Feet.	50 to 100 Feet.	100 to 150 Feet.	150 to 250 Feet.	Over 250 Feet.	Total.	
Cemeteries	..	..	..	1	1	..	..	2	
Privies: No vault	2	2	2	2	..	..	..	8	59
Privies: Uncemented earth vault	..	2	3	2	..	1	..	8	
Privies: Loose stone vault	..	7	3	3	2	5	..	20	
Privies: Cemented stone vault	..	..	..	..	..	..	..	..	
Privies: Wooden box vault	7	5	3	7	1	..	..	23	
Cesspools: Loose stone vault	..	..	..	3	..	..	..	3	4
Cesspools: Cemented stone vault	..	..	1	..	..	..	..	1	
Slaughter-houses	..	..	..	1	..	..	..	1	
Pig-pens	3	2	3	1	1	1	..	11	
Poultry houses and yards	4	3	1	6	2	..	..	16	
Manure heaps	5	3	2	3	1	1	..	15	
Garbage heaps	1	2	5	..	..	..	..	8	
Barns and barnyards	12	5	5	7	1	2	..	32	
Horse and cattle sheds	..	1	..	..	..	..	..	1	
Dwellings	7	5	10	13	1	2	..	38	
Factories	..	..	4	4	1	..	..	9	
Total	41	37	42	53	11	12	..	196	

General Summary—Sources of Probable Contamination on that Portion of the Croton Watershed covered by Inspection.

		On Water's Edge.	Within 25 Feet.	25 to 50 Feet.	50 to 100 Feet.	100 to 150 Feet.	150 to 250 Feet.	Over 250 Feet.	Total.	
Cemeteries		..	..	..	1	1	2	..	4	
Privies	No vault	15	10	3	4	2	..	..	34	303
Privies	Uncemented earth vault	10	16	18	26	8	2	2	82	
Privies	Loose stone vault	7	25	19	27	9	6	1	94	
Privies	Cemented stone vault	8	11	13	13	..	..	..	45	
Privies	Wooden box vault	12	10	12	10	3	1	..	48	
Cesspools	Loose stone vaults	..	2	4	6	1	6	..	19	26
Cesspools	Cemented stone vault	1	1	3	2	..	..	..	7	
Slaughter houses		..	3	..	1	..	..	..	4	
Pig pens		10	8	18	9	3	2	1	51	
Poultry yards and houses		29	20	19	21	8	2	1	100	
Manure heaps		15	18	21	26	9	1	1	91	
Garbage heaps		29	7	10	5	2	..	..	53	
Barns and barnyards		50	24	33	43	16	5	4	175	
Horse and cattle sheds		2	5	4	..	1	..	..	12	
Dwellings		55	31	46	52	8	5	1	198	
Factories		13	1	4	4	1	..	..	23	
Total		256	192	227	250	72	32	11	1,040	

CHEMICAL ANALYSES AND INTERPRETATION OF RESULTS.

To determine whether a water is or is not contaminated with sewage or with organic matter of vegetable origin, it is necessary first to determine what were the probable amounts of its various constituents, both organic and mineral, in an unpolluted condition.

Water per se is a chemical combination of oxygen and hydrogen; but falling upon the earth in the form of rain, it takes up varying amounts of organic and mineral matter from the air and from the soil, and these amounts are dependent upon the locality.

Near the ocean, we find that the amount of chlorides contained in rain is largely in excess over that at some point farther inland. In the same way the amount of organic matter in the rain is much greater near large cities than in less densely populated regions. For instance, the rain in inland towns in Scotland and England averages 0.36 parts of chlorine in 100,000, while that on the sea coast averages 3 parts. After the rain falls upon the surface of the earth, it takes up soluble material, both mineral and organic, with which it may come in contact; so that the amounts of these substances will, of course, vary largely with the locality, depending upon the geological formation and the character of the soil over or through which the water passes.

Although this variation is great, investigation has nevertheless proved that for a given locality there are certain limits to the mineral and organic matter in an uncontaminated water; and while no absolute rule can be laid down, yet knowing the locality, very close deductions can be made as to the purity of the water in question.

It must be remembered, however, that the relation of organic to mineral matter is close, the one passing into the other through the action of the natural ferments contained in the soil and the oxydizing action of the air. Again, a water may contain a certain amount of organic matter of vegetable origin and be harmless, while the same amount, due to animal sources, might be dangerous. In interpreting the results of an analysis, therefore, we must endeavor to distinguish between these two possible sources of contamination.

Organic matter and a portion of the mineral matter, as found in water, are derived from two sources: first, from the excreta of living animals or the products of the decomposition of their dead bodies; and second, from the result of the decay of plant life. If we take sewage as the type of the first source (viz., animal), it is found to contain: (a) mineral matter, such as phosphates, chlorides, etc.; and (b) organic matter, consisting largely of substances containing nitrogen in some form. These nitrogenous compounds, by the action of heat, light and bacteria, give up their nitrogen in the form of ammonia. Some of these compounds, as urea, decompose rapidly with the formation of ammonia. The strong ammoniacal odor noticed in urinals and stables is an illustration of this. Others, as albumen, decompose less readily. On the other hand, if water containing organic matter percolates through the soil, all of the nitrogenous compounds may, if the distance be sufficient and the nitrifying ferment present, be converted into nitric acid, and this, uniting with alkaline and earthy bases contained in the soil, forms nitrates. In contaminated waters the intermediate step, that of the presence of nitrites, is sometimes detected.

In water contaminated by vegetable matter, we find that the mineral constituents contained are due probably more to the geological formation than to the plants themselves. While such organic matter contains substances giving rise to nitrogenous compounds, as in animal matter, the amount so produced is very much less, in proportion to the quantity of organic matter present, and decomposition proceeds more slowly.

In this report the term "sewage" is used to include the waste or decomposition of animal life in whatever form, and waters are spoken of as "contaminated" or "polluted" when they have received increments of "sewage" as defined above. Vegetable contamination is not included in the use of the above terms.

It is the aim of chemists to determine in water the amounts of the organic constituents containing nitrogen, together with certain of the mineral matters, and, if possible, to determine the sources whether animal or vegetable, from which they are derived.

In this country, Chandler, Waller, Drown, Mallet and others base their opinions, so far as the chemical analysis is concerned, upon the following determinations, viz.: appearance, color, odor at 100° Fahr., and the amounts of chlorides, phosphates, nitrogen in nitrites, nitrogen in nitrates, free and albuminoid ammonia, hardness equivalent to carbonate of lime, before and after boiling, organic and volatile matter (viz.: the loss on ignition), mineral matter and the total solid matter obtained by evaporation. It is well to state that these substances, with the possible exception of the mineral matter, are not in themselves harmful in the amounts in which they are found in natural waters; but only indicate, within certain limits, whether or not the water is contaminated. The mineral matters might be so large in amount that the water would be unfit for use; but in this case their presence would be due to the geological formation, or the soil, and not to contamination.

It has been thought well to describe in the fullest detail the methods of analysis employed by us in estimating the relative amounts of the constituents mentioned above, for the reason that in some cases small variations in the methods give rise to considerable differences in results, and that there is some divergence in the methods employed by different chemists.

Methods of Analysis.

Appearance.—Determined by noting the amount of turbidity, including the sediment, and classifying as very turbid, turbid, somewhat turbid, slightly turbid, and clear.

Color.—Estimated by filling a tube two feet in length, one and one-half inches in diameter, and made of colorless glass, with the water, and observing the color by looking through the water either at the sky or at white paper.

Odor.—Ascertained by heating in a closely stopped flask, provided with a thermometer, about 250 c. c. of the water to 100° Fahr., and noting the odor, which we classify as follows: None; faint; and musty, marshy or earthy, qualifying these latter as faint, decided and strong.

Chlorine.—Reagents required: Hydrochloric acid; nitrate of silver, crystallized; chromate of potassium; dry carbonate of sodium or chloride of sodium.

(a) Nitrate of silver n/20.—Nitrate of silver, 8.5 grams; distilled water (free from organic matter) 1 litre.

(b) Chromate of potassium, 1 gram; distilled water, 100 c. c.

(c) Chloride of sodium, n/20. This solution is prepared—

1st. From carbonate of sodium—Heat in a platinum dish about 10 grams of carbonate of sodium to dull redness, stirring with a platinum rod; cool in desiccator, weigh out 2.9066 grams, dissolve in slight excess of hydrochloric acid, evaporate to dryness on water bath with repeated

additions of water, until all of the uncombined acid is driven off, and dilute to 1 litre with distilled water.

1 c. c. contains { 0.001598 grams of chlorine. / 0.002638 grams of chloride of sodium.

2d. From chloride of sodium—Heat in a platinum dish about 10 grams of pure chloride of sodium until crepitation ceases, constantly stirring with platinum rod. Transfer while hot to dry tube, cork tightly and cool. Weigh out 2.6376 grams and dilute to 1 litre with distilled water.

1 c. c. = { 0.001598 grams of chlorine. / 0.002638 grams of chloride of sodium.

Standardize the n/20 nitrate of silver solution with the n/20 chloride of sodium solution, using two drops of the chromate of potassium solution as an indicator.

NOTE.—It has been found (Analyst, vol. , page) that in order to obtain concordant results, the same bulk of liquid as employed in the standardization must be used when making the analysis; also the same amount of the chromate of potassium solution must be used in each case.

To determine the amount of chlorine in a water, measure out a quantity dependent on the amount of chlorine presumably present, and proceed as in standardization of the nitrate of silver solution, observing the precautions given for this, as to bulk of solution, etc. In evaporating a water low in chlorine, it is well to add a small amount (say 0.1 gram) of sodium carbonate to prevent loss of chlorine, and this should always be done if the water have an acid reaction.

Sodium Chloride.—This is calculated from the amount of chlorine, determined as above.

Phosphates.—Determined qualitatively in residue left from the determination of mineral matter, by dissolving the residue in a small quantity of conc. nitric acid, diluting slightly and filtering if necessary, transferring to a test tube, adding a few drops of solution of molydate of ammonia, and heating in water bath.

Nitrogen in Nitrites (Method of Leffmann and Beam).—Reagents required: Sulphanilic acid; napthylamine; acetic acid (glacial); nitrite of silver; chloride of sodium; distilled water free from nitrites and ammonia.

(a) Sulphanilic acid solution—Sulphanilic acid, 0.500 gms., dissolved in distilled water, 100 c. c.; then add acetic acid (glacial), 50 c. c.

(b) Acetate of napthylamine—Napthylamine, 0.100 gms., dissolved in distilled water, 140 c. c.; then add acetic acid (glacial), 60 c. c.

(c) Nitrite of sodium (strong solution)—Nitrite of silver, 0.275 gms., dissolved in distilled water, 250 c. c.; then add chloride of sodium, 0.105 gms., or enough to transform all nitrite of silver to chloride of silver and nitrite of sodium. Keep in black glass bottle away from light. 1 c. c. contains nitrous acid equivalent to 0.0001 gms. of nitrogen.

(d) Nitrite of sodium (standard solution) - Nitrite of sodium (strong solution), 1 c. c., distilled water, 500 c. c. 1 c. c. contains nitrous acid equivalent to 0.0000002 gms. of nitrogen.

To determine the nitrogen in nitrites in a water, measure from burette into 100 c. c. nessler tubes, ½, 1, 2, 3, 4 and 5 c. c., respectively, of the standard nitrite solution. Fill to 100 c. c. mark with distilled water free from nitrites. Fill another tube to 100 c. c. mark with the same water (this for blank test), and another to 100 c. c. mark with water to be tested. Add to each of these tubes 2 c. c. of the sulphanilic acid and 2 c. c. of the acetate of napthylamine solution. Mix contents of tubes by means of glass stirrer, allow to remain for twenty minutes, and then match colors. If tube containing blank test shows reaction for nitrites, fresh standard tubes must be made up and the analysis repeated.

Nitrogen in Nitrates (Method of Gladstone and Tribe).—Reagents required: Bichloride of mercury; iodide of potassium; caustic potash; distilled water; chloride of ammonium, oxalic acid (free from nitrogen compounds); distilled water (free from ammonia); zinc turnings; solution of sulphate of copper, 1 to 100.

(a) Nessler's solution—Iodide of potassium, 62.5 gms., dissolved in hot distilled water, 250 c. c., in 2-litre flask; keep hot in water bath, and add, with constant shaking, saturated solution of bichloride of mercury, a few c. c. at a time, until the precipitate formed does not redissolve; then add caustic potash, 200 grams, dissolved in distilled water, 500 c. c.; dilute to 1 litre and add 5 c. c. of bichloride of mercury, saturated solution; let precipitate settle before using. The Nessler's solution should give a distinct reaction with 0.25 c. c. of the standard chloride of ammonium solution.

(b) Chloride of ammonium (strong solution)—Chloride of ammonium (re-sublimed), 0.315 grams, dissolved in distilled water (free from ammonia), 1 litre. 1 c. c. contains 0.0001 grams of ammonia ($N H_3$). Test this by titrating a portion with the n/20 nitrate of silver solution. 1 c. c. should contain 0.0021 gms. of chlorine.

(c) Chloride of ammonium (standard solution)—Chloride of ammonium solution (strong), 5 c. c.; dilute with distilled water (free from ammonia) to 50 c. c. 1 c. c.=0.00001 gms. of ammonia ($N H_3$).

Oxalic acid.—Powder and put in glass-stoppered bottle.

Zinc turnings coated with copper.—Place in a casserole enough zinc turnings to nearly fill a 300 c. c. wide-mouthed glass-stoppered bottle; fill casserole with water, add a few c. c. of the sulphate of copper solution, stir with glass rod until the zinc turnings are evenly and lightly coated with copper, wash thoroughly until free from copper sulphate solution and loose fragments of copper, and transfer to wide-mouthed glass-stoppered bottle by means of glass rod.

To determine the nitrogen in nitrates in a water, wash zinc copper couple in bottle three times with the water to be examined; then fill bottle nearly full with the water. Add 0.25 gms. of the powdered oxalic acid, shake, place stopper loosely in bottle, cover with beaker and allow to remain until water becomes clear. Heating on water bath hastens reaction. Take out 25 c. c. and test for the presence of nitrites. If no nitrites are found all of the nitrogen contained in the water must have been reduced to ammonia, as nitrites is the intermediate step in the transformation of nitrogen as nitrates into ammonia. If no nitrites are found, take out a measured quantity of the water, make up to 50 c. c. in Nessler tube with water free from ammonia, and nesslerize as described in determination of ammonia. From the amount of ammonia thus obtained the amount of free ammonia found in the water must be subtracted, the remainder calculated to nitrogen, and the amount of nitrogen in nitrites found (if any) taken from this. The result will represent the amount of nitrogen contained in the nitrates.

NOTE.—Before using zinc copper couple, make blank test, on water free from nitrogenous compounds. Ammonia should not be found.

Free Ammonia.—Reagents required: Carbonate of sodium (saturated solution); Nessler's solution; chloride of ammonium solution (standard); distilled water (free from ammonia).

The analysis is conducted as follows: A retort of 2½ litres capacity is connected with a Liebig's condenser, interior bore of tube 1 inch, length 34 inches. The neck of the retort should project into condenser tube beyond exit tube of water used for cooling, and the connection made air-tight with washed rubber hose. Fill retort about half full of water, add 2 c. c. of the carbonate of sodium solution, and distill until 50 c. c. of the distillate shows no reaction for ammonia with Nessler's solution. Add 500 c. c. of the water under examination, and distill off in separate portions of 50 c. c. into Nessler tubes until the last 50 c. c. distilled off shows no reaction for ammonia. The ammonia is estimated by matching the color produced by Nessler's solution in the distillates with that produced by the solution in one of a series of standard tubes, which latter are prepared by measuring into Nessler tubes ¼, ½, 1, 2, 3 and 4 c. c. of the standard ammonium chloride solution, respectively, and filling to the 50 c. c. mark with distilled water free from ammonia. The tubes will then contain 0.0025, 0.0050, 0.01, 0.02, 0.03 and 0.04 milligrams of ammonia ($N H_3$) respectively. The analysis and comparison tubes should all be nesslerized at the same time, which is done by adding to each tube 2 c. c. of Nessler's solution, and mixing with glass stirrer. They should be allowed to stand at least five minutes before reading.

Albuminoid Ammonia.—Reagents required: Same as in determination of free ammonia; with the addition of permanganate of potassium; caustic potash.

Alkaline permanganate of potassium—Permanganate of potassium, 8 grms., dissolved in distilled water (free from ammonia) 1 litre; add caustic potash, 200 grms., and boil in long-necked flask, to prevent much evaporation, for one hour; make up to 1 litre with distilled water (free from ammonia).

To determine the amount of albuminoid ammonia, proceed as in determination of free ammonia, with the exception of adding 50 c. c. of the alkaline permanganate solution, instead of 2 c. c. of carbonate of sodium solution. The result will be the total ammonia present. From this deduct the free ammonia as found; the result will be the amount of albuminoid ammonia.

In determining the amount of albuminoid ammonia in peaty waters, it appears in certain cases to be impossible to arrive at a point where no ammonia is given off. Drown * proposes to take off a certain number of distillates, say 6, and then stop. We, in practice, continue distillation until the last 50 c. c. taken shows less than 0.0025 milligrams of ammonia. We have suggested that 500 c. c. of water be used for each of the ammonia determinations. This is applicable to Croton, or to a water which apparently produces no reaction with Nessler's solution on 50 c. c. of the raw water. If the raw water shows say 0.01 milligrams or more of ammonia on 50 c. c., less than 500 c. c. should be taken for analysis; or if the water contains much ammonia, 200 c. c. can be taken and 300 c. c. distilled off. 50 c. c. of this can be nesslerized and the ammonia calculated to a litre.

*Examination of water supplies, Report State Board of Health of Massachusetts, 1890.

The successive distillates, in the determination of both free and total ammonia, should exhibit a steady decrease in the amount of ammonia contained. If this is not the case, the analysis must be repeated.

Hardness, Equivalent to Carbonate of Lime Before and After Boiling.—Reagents required: A neutral hard soap, containing not more than 12 per cent. of water; alcohol, 90 per cent.; distilled water; calc spar (crystallized) free from alkalies and chlorides; hydrochloric acid, C. P.; distilled water.

(a) Soap solution (strong)—Soap, 10 grms., cut into small pieces, dissolve in 1 litre of 90 per cent. alcohol and filter.

(b) Soap solution (standard)—Soap solution (strong), 100 c. c. Add to this alcohol (90 per cent.), 33 c. c., and distilled water, 100 c. c. Shake gently, allow to stand until clear, and filter.

(c) Standard solution of calcium chloride—Calc spar, 1 gram, dissolved in small amount of hydrochloric acid; evaporate to dryness on water bath, with repeated additions of distilled water, until all uncombined acid is driven off. Dilute this to 1 litre with distilled water. 1 c. c. is equivalent to 0.001 grm. of calcium carbonate.

The soap solution is standardized as follows: 100 c. c. of distilled water is run into a glass-stoppered bottle of about 250 c. c. capacity. 5 c. c. of the calcium chloride solution is run in from a burette, and the soap solution added, not more than 0.25 c. c. at a time, shaking well after each addition, until the addition of the last 0.25 c. c. produces a permanent lather. The lather formed should remain on the surface of the liquid in the bottle for five minutes without breaking. Taking the amount given, 1 c. c. of the soap solution should be equivalent to about 0.0005 gms. of calcium carbonate. The amount of the calcium chloride solution used should be about equivalent to the amount of lime salts contained in the water to be examined.

Hardness Before Boiling.—100 c. c. of the water is measured into a bottle, and the analysis thereafter conducted as in standardization of soap solution.

Hardness After Boiling.—100 c. c. of the water and 100 c. c. of distilled water are measured into a 250 c. c. flask and boiled until the bulk is reduced to 100 c. c. This is filtered into a bottle, cooled, and the analysis thereafter conducted as in hardness before boiling.

NOTE.—If more than 15 c. c. of soap solution are required for a given water, a smaller quantity of the water should be used, making up to 100 c. c. with distilled water.

Total Solids.—100 c. c. of the water are measured into a previously weighed platinum dish, and evaporated to dryness on the water bath. The dish is then transferred to the air bath, and heated for one-half hour at a temperature of 130° Fahr. The dish is then placed in a desiccator, cooled and weighed.

Organic and Volatile (Loss on Ignition) and Mineral Matter.—The contents of the dish are now heated to faint redness over a Bunsen burner, until the organic matter is driven off. The dish is then placed in a desiccator, cooled and weighed. The loss represents the organic and volatile matter, and the residue the mineral matter.

In waters containing a large proportion of carbonates, it will be necessary to restore the carbonic acid lost on ignition. This is done by moistening the residue left after ignition with distilled water charged with carbonic acid, reheating on the water bath and in the air bath, and weighing.

When on ignition no blackening takes place, unless the water contains but a trace of organic matter, the absence of blackening is a sure sign of the presence of nitrates in large amount. This, therefore, becomes a check on the determination of nitrates, for if the amount of nitrates found was low and yet no blackening took place, this would indicate that some error had occurred, and that the nitrates as found were in reality too low. The reverse of this is also true.

In the analysis of water as given, the vessel containing the sample of water is taken at once to a room from which all reagents containing ammonia or nitrogen compounds are excluded, and which is partitioned off from the main laboratory. Water analyses only are conducted in it. The determinations of the nitrogen in nitrites and nitrates, and also of free and albuminoid ammonia, are at once commenced, and not until then are the mineral determinations started.

Well Waters on New York Island.

It is well known that over a large portion of the island on which New York City is located, wells of varying depths may be driven or sunk, which will yield an abundant supply of colorless, clear and apparently pure water. The geological formation of New York Island is, however, such that water from wells on the island cannot with safety be used for domestic purposes. This statement will be made clear by a consideration of the strata underlying the city, and the geological changes which these have undergone. The underlying rock is of igneous origin, and the dip of the strata is so great, varying from 75° to 90°, that no impervious water-bearing stratum exists, beneath which water free from contamination can be found. When the upheaval of the rock took place, it was left in a series of elevations with corresponding depressions. Through subsequent glacial action, the elevations were ground down, and the depressions filled with the drift. If, therefore, a well is sunk over one of the areas of former depression, the water obtained can be only the surface water which has percolated through the ground over this area. A well sunk over one of the areas of former elevation will yield no water, save possibly a small amount which has percolated through crevices in the rock. It is evident that water derived from the surface of an area so thickly populated as that on which New York City is built, must be badly contaminated by the dirt of the streets, and the inevitable leakage of sewers, drain pipes, etc. A very large number of analyses, made during a number of years, of the water from so-called "artesian" wells on New York Island, by Drs. Chandler and Waller of the Columbia School of Mines, and by ourselves, substantiates the above. (See analyses of water from wells on New York Island; page 2200.) While water from these sources may present no evidence of contamination to the senses, analysis has invariably shown it to be grossly contammated with the products of sewage decomposition, and unfit for domestic use. The water of the Croton water-shed, as conveyed by the Old and New Aqueducts to New York City, is, therefore, at present the only available supply for all domestic uses, and its preservation from contamination becomes of the first importance.

Constitution of Pure Surface Water.

In judging of the character of waters from their analysis, it is customary to divide them into classes, as follows:

1st. Rain water.
2d. Spring water.
3d. Upland surface water.
4th. Ground water.
5th. Shallow wells.
6th. Deep wells.

The water supplied to New York City from the Croton water-shed belongs to the third of these classes. We must, therefore, in interpreting the results of analysis of the samples taken at various points on the water-shed, be governed by a consideration of the normal constitution of an upland surface water, and in particular by the character of the surface waters on the Croton water-shed when free from sewage contamination. It is unfortunately a matter of extreme difficulty to establish with certainty a standard of purity for the class of waters under consideration, for the reason, first, that previous to the present investigation, analyses of surface waters, known to be pure and taken from various points on the Croton water-shed, have not been made; and second, that previous to and during our inspection a season of extreme drouth prevailed, drying up a large number of the smaller unpolluted streams, so that we were unable to obtain more than a limited number of samples from sources known to be unpolluted. As an offset to this, however, the absence of rain during our inspection was, as previously stated, of value in permitting the collection of samples, unaffected by dilution, and therefore more strictly comparable one with another.

Moreover, a knowledge of the geological formation and topography of the water-shed as previously outlined, together with a consideration of the constitution of unpolluted surface waters from similar localities elsewhere, provides us with tolerably accurate data for comparison and enables us to classify with a close approximation to the truth the larger number of the samples taken by us.

Considering the various constituents in order, as determined in an analysis such as previously described in this report, we find that the appearance (turbidity and sediment) of a surface water will vary greatly with the season of the year, and the amount and character of the vegetation growing in or near it. The normal slight turbidity and sediment of the waters on the Croton water-shed are mainly due to the debris of aquatic vegetation. In this connection, Waller * says: "A turbidity, after standing some time, indicates matter in a minute state of subdivision, which is, to say the least, undesirable, even though it may be innocuous."

The color of a surface water is by preference light bluish. On the Croton water-shed, the color of the water is normally light yellowish brown, owing to the existence on the shed of a number of swamps and peaty deposits, as previously described in this report.

A pure surface water should have at most a very faint odor. On the Croton water-shed, the swamps and peat deposits mentioned above impart to the water a marshy odor, more or less pronounced. According to Drown †, a musty odor is indicative of sewage contamination. It, of course, does not follow that the absence of such odor implies freedom from pollution.

* Report of sanitary examination of potable waters, New York State Board of Health, 1883.
† Examination of water supplies, Report State Board of Health of Massachusetts, 1890.

The amount of chlorine as chlorides in an unpolluted surface water will vary greatly with the character of the rock over which the water flows, and its proximity to salt-water. On the Croton water-shed, the geological formation and the distance from salt water warrant us in assuming a very low normal chlorine, certainly not over 0.18 parts in 100,000; but we cannot be sure, for reasons previously given, that the normal chlorine may not fall considerably below this figure.

The phosphates in a surface water should normally be absent, and this is the case with the unpolluted waters of the Croton water-shed.

The presence of nitrites in a surface water is in all cases of much significance, as indicating, save under exceptional circumstances, a transition state of oxidation between organic nitrogen and nitrates, under the influence of a special ferment, the nitrifying bacterium. In some rare cases, it is probable that the presence of nitrites is due to a reduction of nitrates by a specific bacterium in the presence of large excess of organic matter*. Nitrites are almost invariably absent in a surface water uncontaminated by sewage, and when present, are found as faint traces only. It is safe to assert that in the unpolluted surface waters of the Croton water-shed, nitrites are absent. Their presence in a surface water is regarded as very strongly indicative of contamination by sewage † and certainly indicates the presence of nitrogenous organic matter in a state of incomplete oxidation.

Nitrates in a water are the final product of the oxidation of organic nitrogen through the action of the nitrifying ferment. Their presence, even in large amount, when unaccompanied by appreciable amounts of free ammonia, albuminoid ammonia, and nitrites, while indicating "previous sewage contamination," did not, in the opinion of many chemists, carry proof of the dangerous character of the water. This opinion was based on the assumption that by complete oxidation of the organic nitrogen the dangerous character of a water was destroyed. This deduction is now, however, considered untenable, as there is no proof that oxidation of sewage necessarily implies the complete destruction of the germs contained in the same, which latter are at present considered to be the true source of danger in polluted waters. The amount of nitrates in unpolluted surface waters is small, and is due to oxidation of vegetable organic matter. In the unpolluted surface waters of the Croton water-shed a safe limit may be set at 0.02 parts in 100,000.

The *free ammonia* found in water is the first product of the oxidation of organic nitrogen. The term is in a sense misleading, as the ammonia does not exist in the water in the free state, but combined with chlorine or carbonic acid. "Saline ammonia" would be a better term. In streams known to be polluted by sewage the presence of free ammonia in considerable amount is indicative of recent contamination. According to Drown‡, high free ammonia, nitrites and chlorine are complete proof of sewage contamination. In unpolluted surface waters, the free ammonia is, as a rule, small in amount, and is due to the primary decomposition of vegetable organic matter, which latter contains a relatively small proportion of organic nitrogen and decomposes very slowly. Under exceptional circumstances, however, an accumulation of the products of vegetable decay occurs, which results in the production of free ammonia in large amount. The unpolluted waters of the Croton water-shed contain but little free ammonia. The limit may be set at 0.003 parts in 100,000.

Albuminoid ammonia, so called, is obtained in analysis by the oxidation of the organic nitrogen contained in the water. It represents unoxidized nitrogenous organic matter, and is a marked constituent of sewage. In surface waters, exposed to light and air, the final products of the oxidation of organic matter, viz.: carbonates and nitrates, may be assimilated by the animal and vegetable life present in more or less abundance in such waters, and organic nitrogen in new forms be thus produced. Water in which the growth of aquatic vegetation, especially the lower forms, is active, may therefore show on analysis a quite considerable amount of albuminoid ammonia, due to dissolved vegetable organic matter. The organic nitrogen of vegetable matter is, however, as has been said, markedly permanent as compared with that derived from animal sources. The existence on the Croton water-shed of the swamps and peat deposits previously described, gives to many of its waters a considerable amount of dissolved vegetable matter, and albuminoid ammonia is consequently always found in these waters to some extent, even when they are unpolluted. The varying conditions of the streams, etc., in respect to the kind and amount of aquatic vegetation, make it extremely difficult to establish a limit for the albuminoid ammonia. Certainly, a limit of 0.015 parts per 100,000 will include all unpolluted waters. In many cases, the limit set is undoubtedly far too high.

Hardness before and after boiling, represents in a water analysis the approximate amounts of the lime and magnesia salts (carbonates, sulphates and chlorides) present in the water, expressed in terms of carbonate of lime. Sewage is always alkaline, and when present in a water reduces the amount of soap solution necessary to form a permanent lather in the tests for "hardness," thus increasing the ratio between the "hardness before boiling" and total solids. In all classes of water, a ratio of 1 to 4 between "hardness" and total solids, is considered as indicative of a large amount of alkaline and consequent sewage contamination, and a ratio of 1 to 3 is suspicious. In surface waters, these indications are seldom so pronounced as to be of value, except when pollution by sewage is very large. An excessively hard water is, of course, objectionable for domestic purposes. In normal surface waters, the temporary and permanent hardness are as a rule low, and nearly equal in amount, and this is true of the surface waters of the Croton water-shed. In these, the hardness averages about 4 parts in 100,000.

Organic and volatile matter (loss on ignition) represents approximately the total amount of organic matter present in the water. In waters containing high chlorine, especially when this is in combination with magnesia, the loss on ignition is misleading, as it represents both the organic matter and more or less decomposition of the mineral matter. In the normal surface waters of the Croton water-shed, the low chlorides and stable character of the mineral matter permit of a fairly accurate determination of the total organic matter by ignition. While in itself of secondary importance, in that it affords no information as to the character of the organic constituents, its estimation enables us to follow any increase or decrease in the total amount of organic matter present. In the unpolluted water of the Croton water-shed, the "organic and volatile" matter averages about 1.5 parts in 100,000. Considerable variations will occur, however, dependent on the season of the year, amount of rain-fall, etc.

Mineral matter, while undesirable when present in large amount in a water, is of but little importance as a means of judging of its quality, unless a large variation from normal conditions occurs. In normal surface waters, the mineral matter is, as a rule, low in amount, and the same is true of the unpolluted surface waters of the Croton water-shed, in which it averages about 4.5 parts in 100,000, varying with the time of year and rain-fall.

Total solids, the sum of the mineral and organic and volatile matter, serve as a check on the estimation of the other constituents in a water. What has been said with regard to mineral and organic matter applies equally to the total solids.

Total nitrogen, viz.: The sum of that present in nitrates, nitrites, free and albuminoid ammonia, when considered as a whole, is often of value in determining, by comparison of analyses made of the water at varying points along a stream, the amount of nitrogen absorbed by vegetable life. In making such comparisons, regard must be paid to the effect of dilution from tributaries and from subterranean sources of supply. In the unpolluted waters of the Croton water-shed a limit of 0.035 parts in 100,000 may be set for total nitrogen.

Collating the limits set for the unpolluted surface waters of the Croton water-shed, we find them to be:

	Parts per 100,000.
Appearance	Slightly turbid.
Color	Light yellowish brown.
Odor at 100 degrees Fahrenheit	Faint marshy.
Chlorine	0.18
Phosphates	None.
Nitrogen in Nitrites	None.
Nitrogen in Nitrates	0.020
Free Ammonia	0.003
Albuminoid Ammonia	0.015
Hardness Equivalent to { Before boiling	4.00
Carbonate of Lime { After boiling	4.00
Organic and volatile (loss on ignition)	1.50
Mineral matter (non-volatile)	4.50
Total solids (by evaporation)	6.00
Total Nitrogen	0.035

It must be understood that the figures in the above table are not set as hard and fast limits. They are intended to afford an approximation to the maximum amount of the various constituents found in the unpolluted surface waters of the Croton water-shed, under the conditions of temperature, freedom from rain-fall and previous drouth, which existed at the time of our inspection. In comparing with them the results obtained in analyzing the various samples from the water-shed, all the results must be taken into consideration, together with the knowledge of sewage contamination obtained by actual inspection. In a few instances the analysis of water from a source known to be polluted shows a decrease from the limits set for a majority of the constituents; but in every case an interpretation of the analysis in the light afforded by inspection, shows the true character of the water.

* Jordan & Richards, examination of water supplies, Report State Board of Health of Massachusetts, 1890, Vol. II.

† { Waller, / Drown, examination of water supplies, Report State Board of Health of Massachusetts, 1890, Vol. I. / Mallet, Report to National Board of Health, May, 1882.

‡ Loc. cit.

Effect of Storage in Reservoirs.

In considering the conditions which may affect the character of a surface water intended for domestic use, we must take into account the effect produced by its storage in ponds or reservoirs, especially the latter. For our present purpose it is only necessary to consider the storage of water in deep or shallow reservoirs, as the ponds and lakes on the Croton water-shed furnish but a small percentage of the total water supply, and have never to our knowledge given serious trouble. Under the conditions which exist in shallow reservoirs, viz.: a comparatively thin layer of water in a practically stagnant condition, there is frequently during the summer months an abundant growth of the lower forms of vegetable life, sometimes in enormous quantity, which gives to the water an unpleasant taste and smell. The causes of this phenomenon are not thoroughly understood. Under conditions apparently the same, the particular algæ or other growth developed may be of an entirely different species in one reservoir as compared with another, or no abnormal growth whatever may take place. One fact, however, appears to be well established, viz.: that trouble is much more likely to occur in a reservoir, the sides and bottom of which have not been cleared of vegetable growth before flooding.* The above applies to deep reservoirs as well, except that the lack of circulation due to the depth of water results in an accumulation of foul water at the bottom of the reservoir, while that at the surface may be but little affected. Under such conditions the bottom water of the reservoir frequently becomes extremely foul; loaded with decomposing organic matter and charged with offensive gases. This was the state of affairs in Sodom Reservoir (I) at the time of our inspection (see page 2197).

While with lapse of time the bottom and sides of a reservoir, not originally cleared of vegetable growth, will undoubtedly approximate more and more closely to the condition of those of a lake or pond, this change is frequently extremely slow. The trouble once begun in a reservoir, may continue for many years. Examples of this are the reservoir of Springfield, Mass., where the trouble has continued unabated for sixteen years†, and Middle Branch Reservoir (G) on the Croton water-shed, whose bottom water is still offensive after a lapse of twelve years (see page 2197).

Self Purification of Streams.

There seems to be a great difference of opinion as to whether a stream will or will not purify itself. Chandler‡ maintains that rivers will purify themselves, by aeration, sedimentation, etc., after flowing for a comparatively short distance from the source of pollution. On the other hand, the English Commission on Rivers Pollution§ state that "when the sewage of towns or other polluting organic matter is discharged into running water, the suspended matters may be more or less perfectly removed by subsidence and filtration, but the foul organic matters in solution are very persistent. They oxidize very slowly and they are removed only to a slight extent by sand filtration. There is no river in the United Kingdom long enough to secure the oxidation and destruction of any sewage which may be discharged into it, even at its source." We give these two authorities as representing the probable extremes of opinion. Both theories have many followers, but it is our opinion, not only from personal experience but from the general opinion of good authorities at the present time, such as Waller, Drown, and others, that streams do purify themselves, the purification depending of course upon the amount of pollution received, the character of the bed of the stream, the vegetable growth existing therein, and the distance from the source of pollution. A stream purifies itself by the following means:

1st. Subsidence and sedimentation.

2d. Removal of the nitrogenous organic matter by the action of plant life.

3d. Aeration by passing over falls or rapids, so that the water is more or less exposed to the action of the air.

4th. Dilution.

Purification by subsidence takes place even in rapidly flowing streams sooner than we should expect. Much of the sediment appears to be caught by the projecting rocks and stones in the river bed, and much falls naturally to the bottom, owing to its weight. This will continue until the bed of the stream becomes loaded with organic impurities. In an ordinary stream, this would appear to be a solution of the question of the removal of the contained turbidity, but, unfortunately, a stream rises and falls with the amount of rain in the region through which it passes, so that while during the dry season the stream might deposit nearly all of the matter in suspension, during a wet season not only would the matter in suspension be carried along with it, but that previously deposited would again be taken up and carried further down its course. We would thus arrive at a period when the bed of the stream would, from its source to its mouth, contain so great a deposit of organic matter as to practically prevent any further purification by this means. This was noticeable on the water-shed during our inspection. In certain of the streams, after a heavy shower, the water remained turbid for a long distance from its source or from turbid tributaries flowing into it.

The removal of organic nitrogenous matter by the action of plant life is universally acknowledged, the plants readily assimilating these compounds, when in the form of nitrates, nitrites and free ammonia; indeed, these constituents are necessary for the proper growth and life of plants. If, however, so much organic matter of this character is contained in the water as to be more than is necessary for the growth of the plant, this action will, of course, be limited. In other words, plants will take up a certain amount and no more. In the table of total nitrogen in the different streams (see chart IX.) this is well illustrated, the East Branch being so saturated with nitrogenous compounds that the plants cease to assimilate them. The amount of total nitrogen is therefore greater at the point where this branch joins the Croton river than at its source. On the other hand, in the West and Middle Branches and their tributaries, we find in general a decrease in total nitrogen along the course of the streams.

Purification by aeration is, of course, largely dependent upon the character of the river bed, the more readily oxidizable matter being transformed by the action of the air into nitrates, and some of the free ammonia possibly volatilized. This appears to be one of the most efficacious methods of self-purification. Huxley, in 1878, writes,‖ "It must, nevertheless, be borne in mind that by constant exposure of fresh surfaces of polluted water to the action of the atmosphere, which is accomplished in a running stream, the organic matter is oxidized, and may thus be eventually converted into products which are perfectly harmless; in other words, a river is competent to effect its own purification, unless overtaxed with pollution." Exactly what is the amount of over-pollution cannot be known. At all events, no authority at the present day will definitely state what amount of sewage is harmful and what harmless.

This brings us to the fourth means of purification, viz.: dilution. If many diseases are caused by specific germs, and if such germs may be and are found in sewage, the question at once arises, what is the amount of dilution necessary to render the water harmless. If we have X bacteria of disease in a stream at a certain point, and only 1-100 X bacteria at another point, is this water at this latter place 100 times less harmful than at the first place? During the year 1885, one of us (Mr. Martin) was sent with Dr. Cyrus Edson of this Department to investigate the cause of the epidemic of typhoid fever at Plymouth, Pa. One thousand cases occurred in a population of 30,000. The reservoir water had been contaminated with the discharges from a typhoid fever patient. At least 90 per cent. of those that had typhoid fever had drunk reservoir water and yet the percentage amount of the discharges from this single patient contaminating the water in the reservoir must have been infinitely small, the reservoir when full holding 10,000,000 gallons, and at the time containing 2,000,000 gallons. It would appear that the question of the efficacy of dilution in self-purification is still debatable ground, unless, perhaps, when enormously great, as, for instance, the dilution of the sewage of Troy by the waters of the Hudson river.¶

Results of Analyses, and Discussion of the Same.

These results are uniformly stated in parts by weight in 100,000. Reference to the maps accompanying this report will show the location of the points where samples were taken. A series of charts have been prepared, showing graphically the variation in the amounts of chlorine and nitrogenous organic constituents for any given stream or reservoir from which samples were taken at various points. Another chart shows the variations in total nitrogen for all the streams and reservoirs in which samples were taken as above and affords a means of comparison between the amounts of nitrogenous organic matter relatively present in the main sources of supply.

In presenting these results we have deemed it unnecessary to enter into their extended discussion. What has previously been said as to interpretation of results affords, in connection with the data given, ample means for those interested in the matter to arrive at their own conclusions, both in specific cases, and in general as to the character of the waters of the Croton basin, and further elaborate discussions would, in our opinion, add nothing in the way of clearness and serve only to needlessly increase the bulk of this report. We have, therefore, stated as briefly as possible the deductions drawn by us from the combined indications of inspection and analysis.

In many instances the apparent discrepancy between the probable pollution of a watercourse, as determined by inspection, and the quality of the water as found by analysis, is explained by the exceptional drouth which existed prior to and during our inspection. Percolation of sewage through the soil and into watercourses would not take place under these conditions as it would under ordinary conditions of rain-fall.

* Drown and Stearns, Examination of Water Supplies, Report State Board of Health of Massachusetts, 1890.
† Drown and Stearns, loc. cit.
‡ Report on waters of the Hudson river to Water Commissioners of City of Albany, January, 1885.
§ Reports on the Pollution of Rivers, Vol. III., 1874.
‖ Quoted in Report of Chandler to Water Commissioners of Albany, 1885.
¶ Chandler, Report on waters of the Hudson river to Water Commissioners of City of Albany, 1885.

TABLE I.—*Analyses of Samples from Sodom Reservoir and the East Branch of the Croton River, below the Reservoir, with their Tributaries.*

Map No.	Laboratory No.	Date when Sample was Taken.	Location.	Appearance.	Color.	Odor at 100° Fahr.	Chlorine in Chlorides.	Equivalent to Sodium Chloride.	Phosphates.	Nitrogen in Nitrites.	Nitrogen in Nitrates.	Free Ammonia.	Albuminoid Ammonia.	Total Nitrogen.	Hardness Equivalent to Carbonate of Lime. Before Boiling.	Hardness Equivalent to Carbonate of Lime. After Boiling.	Organic and Volatile (Loss on Ignition).	Mineral Matter (Non-volatile).	Total Solids (by Evaporation).
A	6627	Sept. 1	East Branch, at Millbown bridge, northeast end of Sodom Reservoir (I)	Turbid	Light yellowish brown..	Faint marshy..	0.189	0.311	None.	0.0006	0.0241	Trace	0.0120	0.0346	9.67	9.67	3.70	12.60	16.30
B	6724	" 21	Peach Lake outlet at junction with Sodom Reservoir (I)	Somewhat turbid...	Dark yellowish brown..	None.....	0.228	0.375	"	None	0.0318	0.0015	0.0265	0.0548	5.00	5.00	2.50	6.50	9.00
C	6619	Aug. 27	Fountain, outlet of Sodom Reservoir (I)	Turbid	" ..	Very offensive.	0.172	0.283	"	"	0.0288	0.0450	0.0300	0.0898	6.17	5.80	2.20	7.80	10.00
D	6620	" 27	East Branch, at Milk Factory Bridge	Very turbid	" ..	Offensive	0.189	0.311	"	0.0001	0.0205	0.0450	0.0150	0.0701	6.12	5.64	2.20	8.30	10.50
E	6599	" 19	Tonetta brook, at junction with East Branch	Slightly turbid	Greenish yellow	Slightly stale..	3.770	6.220		0.0014	0.1509	0.0150	0.0150	0.1770	7.30	6.98	4.40	18.80	23.20
F	6621	" 27	East Branch, three hundred yards below Red bridge	Turbid	Light yellowish brown..	Strong woody..	0.197	0.325	"	0.0003	0.0409	0.0300	0.0150	0.0783	6.39	5.48	2.90	8.80	11.70
G	6622	" 27	East Branch, one-eighth mile below Baxter's slaughter-house	"	" ..	Very offensive.	0.197	0.325	"	0.0003	0.0678	0.0075	0.0375	0.1056	6.23	5.42	3.50	8.50	12.00
H	6623	" 27	East Branch, at bridge one and one-eighth miles below Baxter's slaughter-house	Slightly turbid	Yellowish brown	Offensive	0.189	0.311	"	0.0014	0.0748	0.0375	0.0375	0.1139	6.41	5.64	3.20	8.30	11.50
I	6624	" 27	East Branch, at first dam	Very slightly turbid	"	"	0.189	0.311	"	0.0014	0.0369	0.0200	0.0250	0.1193	6.55	4.40	3.30	7.60	10.90
			Average of above analyses				0.591	0.964	None.	0.00064	0.0585	0.0191	0.0237	0.0937	6.65	6.00	3.10	9.69	12.79

(See also Map I. and Chart I.)

Analysis B is hardly comparable with the others, as the tributary was nearly dried up when the sample was taken. The water of Sodom Reservoir and the East Branch must be classed as of very poor quality and unfit for drinking. This is due to contamination of the main tributary to the reservoir, from sewage and decaying vegetation (the largest swamp on the water-shed is just above the reservoir, and is drained by the tributary), to accumulation of the products of organic decay in the water at the bottom of the reservoir, due to causes already explained (see page 2196), to sewage contamination of the water in the reservoir and to the sources of pollution found along the East Branch. The main tributary to the river, Tonetta brook, is grossly polluted with sewage; at the time of our inspection it was nearly dry. Self-purification of the water in the East Branch is practically nil, for while some oxidation of organic nitrogen takes place, the total nitrogen is larger near the mouth of the river than at its source below the reservoir (see Chart IX.). No dilution by purer water has taken place, as is shown by the constancy of the amounts of chlorine and mineral matter.

TABLE II.—*Analyses of Samples from Middle Branch Reservoir (G) and the Middle Branch of the Croton River, below the Reservoir, with their Tributaries.*

Map No.	Laboratory No.	Date when Sample was Taken.	Location.	Appearance.	Color.	Odor at 100° Fahr.	Chlorine in Chlorides.	Equivalent to Sodium Chloride.	Phosphates.	Nitrogen in Nitrites.	Nitrogen in Nitrates.	Free Ammonia.	Albuminoid Ammonia.	Total Nitrogen.	Hardness Equivalent to Carbonate of Lime. Before Boiling.	Hardness Equivalent to Carbonate of Lime. After Boiling.	Organic and Volatile (Loss on Ignition).	Mineral Matter (Non-volatile).	Total Solids (by Evaporation).
J	6628	Sept. 1	Middle Branch, one-half mile above Reservoir G	Slightly turbid.....	Light yellowish brown.....	Faint marshy	0.214	0.353	None.	None.	0.0082	Trace.	0.0180	0.0230	6.71	5.37	3.00	7.00	10.00
K	6629	" 1	Reservoir G, at rip-rap of dam	"	Very light yellowish brown.	"	0.172	0.283	"	0.0001	0.0287	0.0450	0.0375	0.0967	3.22	2.67	3.30	3.30	6.60
L	6629	" 1	"Brimstone Hollow" brook, at junction with Middle Branch	Turbid	Yellowish brown.....	"	0.245	0.404	"	None.	0.0140	0.0030	0.0120	0.0264	6.18	5.91	1.20	9.00	10.20
M	6630	" 1	Middle Branch, below junction of "Brimstone Hollow" brook	Somewhat turbid...	Light yellowish brown	"	0.223	0.368	"	"	0.0329	Trace.	0.0160	0.0461	5.37	5.10	2.80	7.00	9.80
N	6631	" 1	Middle Branch, at junction with West Branch	Very slightly turbid	Very light yellowish brown.	"	0.223	0.368	"	"	0.0082	"	0.0085	0.0152	5.10	4.83	1.30	8.30	9.60
			Average of above analyses				0.215	0.355	None.	0.00002	0.0184	0.0 96	0.0184	0.0415	5.32	4.78	2.32	6.92	9.24

(See also Map I. and Chart II.)

The water of the main tributary to the reservoir is of fair quality. That of the reservoir itself is of poor quality. This is due mainly to accumulation of products of organic decay, as previously described (see page 2196), and to some extent to sewage contamination.

The samples from the Middle Branch were taken at a time when no water was being drawn from the reservoir, and therefore practically represent the water of tributaries.

A sample (3B, which see *) was, however, taken below the junction of the West and Middle Branches at a time when 40,000,000 gallons daily were being drawn from the reservoir. The analysis of this sample, especially as to total nitrogen, coincides quite closely with that of the water in the reservoir, allowing for dilution by the purer water of the West Branch (30,000,000 gallons daily, †see Analysis 2B). There is, therefore, apparently little or no self-purification in the stream. Its water must be classed as of poor quality; but it is fair to assume that this is due, more to the condition of the water in the reservoir, than to contamination below the latter, either directly or through tributaries. The water of "Brimstone Hollow" brook, the main tributary, is of fair quality. (Analysis L).

* Page 2198, this report. † Page 2197, this report.

TABLE III.—*Analyses of Samples from Boyd's Corners Reservoir (E), the West Branch of the Croton River, and Lakes Gleneida and Gilead, with their Tributaries.*

Map No.	Laboratory No.	Date when Sample was Taken.	Location.	Appearance.	Color.	Odor at 100° Fahr.	Chlorine in Chlorides.	Equivalent to Sodium Chloride.	Phosphates.	Nitrogen in Nitrites.	Nitrogen in Nitrates.	Free Ammonia.	Albuminoid Ammonia.	Total Nitrogen.	Hardness Equivalent to Carbonate of Lime. Before Boiling.	Hardness Equivalent to Carbonate of Lime. After Boiling.	Organic and Volatile (Loss on Ignition).	Mineral Matter (Non-volatile).	Total Solids (by Evaporation).
O	6635	Sept. 3	Tributary, northwest corner of Reservoir E.	Somewhat turbid...	Dark yellowish brown.....	Faint marshy	0.140	0.231	None.	None.	0.1647	Trace.	0.0120	0.1747	5.64	5.37	1.80	6.30	8.10
P	6636	" 3	Tributary, northeast corner of Reservoir E.	Turbid	Yellowish brown.....	"	0.123	0.202	"	"	0.0412	"	0.0140	0.0527	3.76	3.49	1.80	3.70	5.50
Q	6637	" 3	Fountain, outlet of Reservoir E	Very slightly turbid	"	"	0.140	0.231	"	0.0003	0.0195	0.0060	0.0150	0.0371	2.69	2.69	1.40	2.70	4.10
R	6642	" 4	West Branch, below junction of China Pond brook	"	Light yellowish brown....	"	0.140	0.231	"	0.0008	0.0017	0.0070	0.0095	0.0161	2.74	2.69	2.50	3.40	5.90
S	6643	" 4	West Branch, below bridge at Cole's Mills ..	"	"	"	0.140	0.231	"	0.0008	0.0236	0.0040	0.0155	0.0405	2.42	2.31	1.70	2.60	4.30
T	6647	" 4	At gate, outlet of Lake Gleneida	"	Very light yellowish brown.	"	0.420	0.693	"	0.0001	0.0185	0.0075	0.0005	0.0251	3.87	3.76	1.40	4.80	6.20
U	6644	" 4	Horse Pound brook, between junction of Lake Gleneida outlet and Pine Pond brook	"	"	"	0.175	0.288	"	None.	0.0305	0.0030	0.0060	0.0379	3.97	3.92	1.80	6.40	8.20
V	6645	" 4	Pine Pond brook, at junction with Horse Pound brook	"	Light yellowish brown.....	"	0.193	0.318	"	"	0.0025	0.0020	0.0190	0.0198	4.13	4.13	2.00	6.20	8.20
W	6646	" 4	West Branch, at bridge three-eighths mile below junction of Horse Pound brook..	"	"	"	0.140	0.231	"	0.0003	0.0018	0.0075	0.0005	0.0086	3.22	3.22	0.90	3.30	4.20
X	6648	" 4	Long Pond brook, near junction with West Branch	Slightly turbid.....	"	"	0.210	0.346	"	None.	0.0185	0.0075	0.0040	0.0280	4.67	4.56	1.20	5.20	6.40
Y	6649	" 4	West Branch, at temporary dam, below site of large dam for New Reservoir D..	"	"	"	0.140	0.231	"	"	0.0276	0.0065	0.0005	0.0333	2.95	2.95	0.90	3.40	4.30
Z	6651	" 4	West Branch, at bridge two miles below junction of Long Pond brook	"	Very light yellowish brown.	"	0.140	0.231	"	0.0001	0.0312	0.0020	0.0015	0.0341	3.22	2.95	0.40	4.00	4.40
2A	6650	" 4	At gate, outlet of Lake Gilead	Very slightly turbid	Light bluish	Very faint marshy	0.158	0.260	"	None.	0.0231	0.0020	0.0010	0.0255	3.11	2.95	1.00	5.20	6.20
2B	6652	" 4	West Branch, at junction with Middle Branch	Slightly turbid.....	Light yellowish brown.....	Faint marshy	0.140	0.231	"	"	0.0089	0.0015	0.0115	0.0113	3.92	3.76	0.90	4.00	4.90
			Average of above analyses				0.172	0.283	None.	0.00017	0.0235	0.0040	0.0072	0.0389	3.59	3.48	1.41	4.37	5.78

(See also Map II. and Chart III.)

Of the two main tributaries to the reservoir (Samples O and P), one (Sample O) must be considered unsatisfactory on account of the abnormally high amount of nitrogen in nitrates, indicative of "previous sewage contamination." The other (Sample P) is fair in quality. The water in the reservoir is better in quality than that of either of its tributaries. No accumulation of decaying vegetable matter appears to exist in this reservoir. The water of the various tributaries to the West Branch is of fair quality, with the exception of the supply from Lake Gleneida. In this sample the great increase in the amount of chlorine (three times that found in Lake Gilead) and the presence of nitrites, is evidence of the large sewage contamination which the lake receives from the Town of Carmel. It must be remembered that no water was being drawn from the lake at the time of our inspection. The water of Lake Gilead (Analysis 2A) is of exceptionally good quality, and may be taken as the best example of an uncontaminated surface water found during our inspection. There is a marked improvement in the character of the water of the West Branch in its passage down the stream. At its junction with the Middle Branch, the water is apparently of good quality. It must, however, be remembered that many nuisances exist, especially on the tributaries, which on account of the long-continued drouth were not at the time of our inspection sources of contamination, but are liable to prove so under ordinary conditions of rain-fall.

TABLE IV.—*Analyses of Samples from the Titicus River.*

Map No.	Laboratory No.	Date when Sample was Taken.	Location.	Appearance.	Color.	Odor at 100° Fahr.	Chlorine in Chlorides.	Equivalent to Sodium Chloride.	Phosphates.	Nitrogen in Nitrites.	Nitrogen in Nitrates.	Free Ammonia.	Albuminoid Ammonia.	Total Nitrogen.	Hardness Equivalent to Carbonate of Lime. Before Boiling.	Hardness Equivalent to Carbonate of Lime. After Boiling.	Organic and Volatile (Loss on Ignition).	Mineral Matter (Non-volatile).	Total Solids (by Evaporation).
2C	6703	Sept. 17	Titicus river, at bridge, one-fourth mile from Connecticut State Line	Somewhat turbid	Light yellowish brown	Faint marshy	0.184	0.303	None.	None.	0.0033	0.0010	0.0190	0.0197	6.18	5.91	1.20	9.80	11.00
2D	6704	" 17	Titicus river, between North Salem and Salem Centre	Clear	Very light yellowish brown.	"	0.245	0.404	"	"	0.0037	0.0005	0.0060	0.0090	8.06	6.98	0.40	14.80	15.20
2E	6705	" 17	Titicus river, below Salem Centre	Very slightly turbid	"	"	0.237	0.390	"	"	0.0041	Trace.	0.0160	0.0173	8.75	7.52	0.50	12.00	12.50
2F	6706	" 17	Titicus river, above temporary dam for new Reservoir M	"	"	"	0.245	0.404	"	"	0.0041	Trace.	0.0090	0.0115	8.06	7.25	0.50	10.00	10.50
2G	6707	" 17	Titicus river, at junction with Croton river	Very turbid	"	"	0.438	0.722	"	"	0.0033	0.0010	0.0120	0.0149	8.06	7.25	0.40	10.00	10.40
			Average of above analyses				0.270	0.445	None.	None.	0.0037	0.0005	0.0164	0.0145	7.82	6.98	0.60	11.32	11.92

(See also Map III. and Chart IV.)

At the point where Sample 2C was taken, about one-fourth mile from the Connecticut State line, the water is of fair quality, and improves slightly during its passage down the river, until the Town of Purdy's is reached. The Sample 2G, taken below the town, shows by comparison with the other samples the pollution due to the sewage at Purdy's. At this point the river water is of poor quality, nor can it be doubted that under ordinary conditions it receives considerable pollution from the Towns of North Salem and Salem Centre, and from other points.

TABLE V.—*Analyses of Samples from the Cross River, and from Beaver Dam Brook.*

Map No.	Laboratory No.	Date when Sample was Taken.	Location.	Appearance.	Color.	Odor at 100° Fahr.	Chlorine in Chlorides.	Equivalent to Sodium Chloride.	Phosphates.	Nitrogen in Nitrites.	Nitrogen in Nitrates.	Free Ammonia.	Albuminoid Ammonia.	Total Nitrogen.	Hardness Equivalent to Carbonate of Lime. Before Boiling.	Hardness Equivalent to Carbonate of Lime. After Boiling.	Organic and Volatile (Loss on Ignition).	Mineral Matter (Non-volatile).	Total Solids (by Evaporation).
2H	6682	Sept. 15	Cross river, above Boutonville	Clear	Light yellowish brown	Faint marshy	0.210	0.346	None.	None.	0.0239	0.0010	0.0140	0.0362	3.76	3.76	0.90	5.00	5.90
2I	6683	" 15	Cross river, below Boutonville	"	"	Marshy	0.210	0.346	"	"	0.0025	0.0020	0.0170	0.0181	3.71	3.71	0.80	5.00	5.80
2J	6684	" 15	Waccabuc river, at junction with Cross river	"	"	"	0.228	0.375	"	"	0.0045	0.0005	0.0105	0.0135	5.26	5.20	1.20	7.80	9.10
2K	6685	" 15	Cross river, at mill dam above Town of Cross River	"	"	Faint marshy	0.228	0.375	"	"	0.0161	0.0003	0.0165	0.0301	4.46	4.46	1.00	7.50	8.50
2L	6686	" 15	Cross river, below Town of Cross River	"	"	"	0.228	0.375	"	"	0.0325	0.0005	0.0065	0.0383	5.26	5.26	1.00	6.50	7.50
2M	6687	" 15	Cross river at bridge one and two-thirds miles below Sample 2L	Turbid	"	Marshy	0.228	0.375	"	"	0.0325	0.0005	0.0095	0.0107	4.56	4.40	2.10	7.00	9.10
2N	6688	" 15	Cross river one and one-eighth miles below Sample 2M	"	"	"	0.228	0.375	"	"	0.0078	0.0005	0.0065	0.0136	4.83	4.67	1.40	7.30	8.70
2O	6691	" 16	Beaver dam brook, near junction with Cross river	"	"	"	0.263	0.433	"	"	0.0490	0.0005	0.0070	0.0532	4.40	4.35	1.50	8.00	9.50
2P	6692	" 16	Cross river, at railroad bridge above Katonah	Clear	Very light yellowish brown.	"	0.263	0.433	"	"	0.0490	0.0005	0.0050	0.0535	4.83	4.83	2.30	6.70	9.00
2Q	6693	" 16	Cross river, at bridge opposite open drain, Katonah	Somewhat turbid.	"	"	0.280	0.462	"	"	0.0490	0.0005	0.0035	0.0548	5.37	5.21	1.50	7.00	8.50
2R	6694	" 16	Cross river, at junction with Croton river	Slightly turbid	"	"	0.280	0.462	"	0.0001	0.0318	0.0010	0.0080	0.0392	5.53	5.21	1.00	7.40	8.40
			Average of above analyses				0.241	0.396	None.	0.00001	0.0271	0.0007	0.0097	0.0357	4.72	4.64	1.34	6.84	8.19

(See also Map III. and Chart V.)

The water of this river is apparently of fair quality from its source to the junction of Beaver Dam brook, above the Town of Katonah. No apparent improvement in quality, however, takes place for this distance. Below the junction of this large brook, whose water is of poor quality (see Analysis 2O), the water of the river rapidly deteriorates until at its junction with the Croton river, below Katonah, it is, by comparison, very poor in quality. The influence of the sewage from Katonah, and the conversion of the river into a shallow mill-pond during its passage through the town, is marked. The water of the Waccabuc river, a tributary to the Cross river at Boutonville, is a good example of an uncontaminated stream, draining a considerable swampy area (see Analysis 2J.).

TABLE VI.—*Analyses of Samples from Lake Mahopac and the Muscoot River, with their Tributaries.*

Map No.	Laboratory No.	Date when Sample was Taken.	Location.	Appearance.	Color.	Odor at 100° Fahr.	Chlorine in Chlorides.	Equivalent to Sodium Chloride.	Phosphates.	Nitrogen in Nitrites.	Nitrogen in Nitrates.	Free Ammonia.	Albuminoid Ammonia.	Total Nitrogen.	Hardness Equivalent to Carbonate of Lime. Before Boiling.	Hardness Equivalent to Carbonate of Lime. After Boiling.	Organic and Volatile (Loss on Ignition).	Mineral Matter (Non-volatile).	Total Solids (by Evaporation).
2S	6655	Sept. 10	Mud Pond brook, at junction with Lake Mahopac	Slightly turbid.	Dark yellowish brown.	Marshy	0.175	0.289	None.	None.	0.0436	0.0070	0.0220	0.0675	4.56	4.30	1.40	5.20	6.60
2T	6660	" 10	At gate, outlet of Lake Mahopac	"	Light yellowish brown	Faint marshy	0.280	0.462	"	"	0.0054	0.0035	0.0175	0.0227	2.69	2.69	0.80	3.50	4.30
2U	6661	" 10	Outlet of Secor Lake, near junction with Muscoot river	"	"	"	0.193	0.318	"	"	0.0128	0.0045	0.0205	0.0334	4.19	4.19	0.90	5.20	6.10
2V	6662	" 10	Muscoot river three miles below Lake Mahopac, at bridge below large swamp	"	"	"	0.263	0.433	"	"	0.0011	0.0037	0.0233	0.0275	4.56	4.56	0.80	5.80	6.60
2W	6663	" 11	Muscoot river, at mill-pond dam two and one-half miles below Sample 2V	"	"	Marshy	0.210	0.346	"	"	0.0111	0.0065	0.0375	0.0474	5.48	5.26	2.00	6.00	8.00
2X	6668	" 11	Muscoot river, at bridge opposite office of Chief Engineer, new Reservoir A	Clear	"	Faint marshy	0.280	0.462	"	"	0.0058	0.0030	0.0260	0.0297	5.64	5.64	1.80	6.50	8.30
2Y	6669	" 11	Amawalk brook, at junction with Muscoot river	Slightly turbid.	Yellowish brown	Marshy	0.438	0.722	"	"	0.0148	0.0020	0.0210	0.0337	6.12	6.07	3.00	7.00	10.00
2Z	6670	" 11	Muscoot river, below settlement of the Society of Christian Brothers	"	Light yellowish brown	Faint marshy	0.281	0.462	"	"	0.0132	0.0040	0.0240	0.0363	5.26	5.16	1.80	6.80	8.60
3A	6671	" 11	Muscoot river, at junction with Croton river	"	"	"	0.281	0.462	"	"	0.0074	0.0010	0.0210	0.0250	5.58	5.58	3.00	6.00	9.00
			Average of above analyses				0.244	0.439	None.	None.	0.0128	0.0045	0.0236	0.0360	4.90	4.83	1.72	5.78	7.50

(See also Map IV. and Chart VI.)

The water of the only tributary to Lake Mahopac, Mud Pond brook, is not of good quality, though this appears to be due to the presence of decaying vegetable matter (see Analysis 2S).

The water of the lake itself (Analysis 2T) is of fair quality, and the analysis does not show an appreciable sewage contamination. This is in marked contrast to the water of Lake Gleneida, and is probably due to the difference in size of the lakes and the prevailing use of cesspools along the shores of Lake Mahopac. Of the two main tributaries to the Muscoot river, the water of Secor Lake outlet (Analysis 2V) is of fair quality, while that of Amawalk brook (Analysis 2Y) is very unsatisfactory, the relatively large amount of chlorine indicating considerable sewage contamination. A consideration of this analysis as a whole indicates "previous sewage contamination," with oxidation of its organic nitrogen and subsequent assimilation of the products of oxidation by vegetable life. At a point three miles below Lake Mahopac (Analysis 2V), the water of the river is not of good quality, showing apparently the effect of the drainage of the Village of Mahopac Falls, and of a large swamp through which the river flows. At its junction with the Croton river (Analysis 3A) the water has improved somewhat in character; but cannot still be considered as of good quality.

TABLE VII.—*Analyses of Samples from the Croton River, from the Junction of its Branches to Croton Lake, with its Tributaries.*

Map No.	Laboratory No.	Date when Sample was Taken.	Location.	Appearance.	Color.	Odor at 100° Fahr.	Chlorine in Chlorides.	Equivalent to Sodium Chloride.	Phosphates.	Nitrogen in Nitrites.	Nitrogen in Nitrates.	Free Ammonia.	Albuminoid Ammonia.	Total Nitrogen.	Hardness Equivalent to Carbonate of Lime. Before Boiling.	Hardness Equivalent to Carbonate of Lime. After Boiling.	Organic and Volatile (Loss on Ignition).	Mineral Matter (Non-volatile).	Total Solids (by Evaporation).
3B	6713	Sept. 19	Combined Middle and West Branches, at junction with East Branch	Turbid	Light yellowish brown	None	0.175	0.289	None.	0.0014	0.0225	0.0310	0.0080	0.0561	3.49	3.49	0.60	4.00	4.60
3C	6714	" 19	Croton river, below Croton Falls	"	Yellowish brown	Faint marshy	0.193	0.318	"	0.0008	0.0157	0.0200	0.0100	0.0422	4.73	4.62	2.00	5.00	7.00
3D	6715	" 19	Croton river, above Purdy's, and junction of Titicus river	"	"	Earthy	0.184	0.303	"	0.0006	0.0175	0.0180	0.0150	0.0452	4.62	4.62	2.00	5.90	7.90

Map No.	Laboratory No.	Date when Sample was Taken.	Location.	Appearance.	Color.	Odor at 100° Fahr.	Chlorine in Chlorides.	Equivalent to Sodium Chloride.	Phosphates.	Nitrogen in Nitrites.	Nitrogen in Nitrates.	Free Ammonia.	Albuminoid Ammonia.	Total Nitrogen.	Hardness Equivalent to Carbonate of Lime.		Organic and Volatile (Loss on Ignition).	Mineral Matter (Non-volatile).	Total Solids (by Evaporation).
															Before Boiling.	After Boiling.			
3E	6716	Sept. 19	Croton river, below Purdy's	Turbid	Light yellowish brown	Stale; marshy.	0.193	0.318	"	0.0008	0.0140	0.0220	0.0100	0.0411	4.83	4.73	1.00	8.90	9.90
3F	6718	" 19	Croton river, above Golden's Bridge	Somewhat turbid.	Very light yellowish brown.	Faint marshy...	0.193	0.318	"	0.0006	0 0340	0.0180	0.0130	0.0601	5.00	5.00	1.00	7.00	8.00
3G	6717	" 19	Large tributary from the east, at junction with Croton river above Golden's Bridge	"	Light yellowish brown	None	0.315	0.520	"	None.	0.0115	0.0060	0.0070	0.0212	5.66	5.00	1.00	8.30	9.30
3H	6695	" 16	Brook flowing through Golden's Bridge, above the town	"	Yellowish brown	Marshy	0.587	0.967	"	0.0008	0.1301	0.0010	0.0070	0.1375	5.91	5.48	1.30	11.10	12.40
3I	6696	" 16	Brook flowing through Golden's Bridge. Pool where brook ends	Very turbid	"	"	0.534	0.881	"	0.0014	0.0719	0.0110	0.0140	0.0939	5.64	5.37	1.40	9.50	10.90
3J	6719	" 19	Croton river, below Golden's Bridge	Somewhat turbid.	Light yellowish brown	Faint marshy...	0.193	0.318	"	0.0008	0.0223	0.0120	0.0180	0.0478	4.79	4.79	0.90	8.50	9.40
3K	6740	" 24	Plum brook, at junction with Croton river below Golden's Bridge	Slightly turbid...	Very light yellowish brown.	Strong marshy.	0.210	0.346	"	None.	0.0466	0.0035	0.0115	0.0588	6.00	5.65	1.40	6.70	8.10
3L	6720	" 19	Tributary from the east, at junction with Croton river, one and three-fourths miles below Golden's Bridge	Very turbid	Light yellowish brown	Slightly stale..	0.438	0.722	"	0.0008	0.0567	0.0180	0.0240	0.1019	8.27	6.74	6.50	8.00	14.50
3M	6721	" 19	Croton river, above Katonah, and junction of Cross river	Turbid	"	Faint marshy...	0.193	0.318	"	0.0008	0 0321	0.0100	0.0200	0.0576	5.00	4.35	1.50	8.50	10.00
3N	6741	" 24	Croton river, below junction of Muscoot river, upper end of Croton Lake	Somewhat turbid.	Very light yellowish brown.	None	0.193	0.318	"	0.0006	0.0279	0.0055	0.0205	0.0500	5.05	4.79	1.50	7.20	8.70
			Average of above analyses				0.277	0.467	None.	0.00072	0.0394	0.0135	0 0137	0.0626	5.31	4.97	1.70	7.58	9.28

(See also Map IV. and Chart VII.)

The water of this river is uniformly of poor quality. That of all its tributaries is of very poor quality, with the exception of Plum brook (Analysis 3K), whose water may be classed as fair, though showing evidence of previous sewage contamination, and of the Muscoot river, already described. The amount of total nitrogen in the water of the river increases somewhat as we go down the stream (see Chart IX.), and while the decease in free ammonia and nitrites, and the increase in nitrates and albuminoid ammonia would point to a certain degree of self-purification, both through oxidation and through assimilation of the products by vegetable life, this is fully offset by contamination of the river itself along its course, and the addition of polluted water through its tributaries. The brook flowing through Golden's Bridge was not a source of pollution at the time of our inspection, as it was dry for a considerable distance from its mouth; but under normal conditions of rain-fall it must carry much sewage into the river (see Analyses 3H and 3I).

TABLE VIII.—*Analyses of Samples from Croton Lake and its Tributaries.*

Map No.	Laboratory No.	Date when Sample was Taken.	Location.	Appearance.	Color.	Odor at 100° Fahr.	Chlorine in Chlorides.	Equivalent to Sodium Chloride.	Phosphates.	Nitrogen in Nitrites.	Nitrogen in Nitrates.	Free Ammonia.	Albuminoid Ammonia.	Total Nitrogen.	Hardness Equivalent to Carbonate of Lime.		Organic and Volatile (Loss on Ignition).	Mineral Matter (Non-volatile).	Total Solids (by Evaporation).
															Before Boiling.	After Boiling.			
3O	6760	Sept. 25	Tributary from the south, entering Croton Lake five and one-half miles above dam	Somewhat turbid...	Light yellowish green	Faint marshy	0.210	0.346	None.	0.0001	0.0218	0.0035	0.0065	0.0301	4.13	4.13	1.30	7.60	8.90
3P	6742	" 24	Tributary from the north, entering Croton Lake five miles above dam	Very turbid	Yellowish brown	None	0.456	0.751	"	0.0008	0.0313	0.0110	0.0245	0.0613	7.22	6.09	3.20	10 50	13.70
3Q	6759	" 25	Tributary from the south, entering Croton Lake four miles above dam	Somewhat turbid...	Light yellowish brown	Faint marshy	0.210	0.346	"	0.0001	0.0172	0.0390	0.0100	0.0576	4.52	4.13	1.80	8.50	10.30
3R	6743	" 24	Tributary from the north, entering Croton Lake three and one-half miles above dam	Slightly turbid	Very light yellowish brown.	"	0.237	0.390	"	None.	0.0609	0.0060	0 0095	0.0736	4.35	4.13	1.90	7.20	9.10
3S	6744	" 24	Tributary from the north, entering Croton Lake three and one-fourth miles above dam	"	Greenish	Faint woody.	0.175	0.289	"	"	0.0326	0.0015	0.0065	0.0392	3.92	3.92	1.90	7.00	8.90
3T	6732	" 23	Kisco brook, above Mount Kisco	Somewhat turbid...	Light yellowish brown	Faint marshy	0.298	0.491	"	0.0003	0.0191	0.0065	0.0085	0.0317	5.87	5.44	2.80	8.50	11.30
3U	6735	" 23	Kisco brook, below Mount Kisco	Turbid	Very light yellowish brown	None	0.473	0.799	"	0.0003	0.0631	0.0030	0.0145	0.0778	7.18	6.53	1.60	10.90	12.50
3V	6733	" 23	Kisco Lake outlet, above Newcastle	Somewhat turbid...	"	Faint marshy	0.193	0.318	"	None.	0.0244	0.0005	0.0100	0.0330	3.26	3.26	1.30	5.50	6.80
3W	6734	" 23	Kisco Lake outlet, below Newcastle and east of Oakview Cemetery	"	Yellowish brown	"	0.280	0.462	"	0.0001	0.0152	0.0115	0.0145	0.0367	5.13	4.79	0.90	7 80	8.70
3X	6751	" 24	Kisco brook, at junction with Croton Lake, three and one-eighth miles above dam	"	"	"	0.333	0.549	"	None.	0.0054	0.0035	0.0170	0.0417	5.66	5.66	1.20	9.00	10.20
3Y	6758	" 25	Tributary from the south, entering Croton Lake at Pines Bridge, two miles above dam	Very turbid	Yellowish green	"	0.315	0.520	"	"	0.0161	0.0005	0.0035	0.0210	6.53	5.87	1.00	12.80	13.80
3Z	6750	" 24	Tributary from the south, entering Croton Lake near Cornell, one and five-eighths miles above dam	Slightly turbid	Very light yellowish brown.	Marshy	0.228	0.375	"	0.0001	0.0691	0.0010	0.0040	0.0733	4.25	4.18	1.30	8.30	9.60
4A	6749	" 24	Tributary from the south, entering Croton Lake at Cornell, one and one-half miles above dam	"	"	Faint marshy	0.228	0.375	"	None.	0.0321	0.0010	0.0110	0.0420	5.96	5.66	1.50	9.50	11.00
4B	6745	" 24	Tributary from the north, entering Croton Lake one and one-eighth miles above dam	Very slightly turbid	Light greenish	None	0.237	0.390	"	"	0.0329	Trace.	0.0015	0.0341	6.61	5.66	2.50	8.70	11.20
4C	6746	" 24	Tributary from the north, entering Croton Lake three-fourths mile above dam	Slightly turbid	Yellowish brown	Faint marshy	0.210	0.346	"	0.0003	0.0315	0.0015	0.0060	0.0380	8.70	6.09	2.00	14.50	16.50
4D	6748	" 24	Tributary from the south, entering Croton Lake one-half mile above dam	Turbid	Light yellowish brown	"	0.298	0.491	"	None.	0.0313	0.0020	0.0140	0.0445	5 13	4.57	2.60	8.10	10.70
4E	6747	" 24	Gate-house of New Aqueduct, at Croton Dam	Somewhat turbid...	Very light yellowish brown.	"	0.228	0.375	"	0.0001	0.0238	0.0110	0.0140	0.0445	5.22	4.57	2.80	8.30	11.10
			Average of above analyses				0.271	0.448	None.	0.00013	0.0310	0.0061	0.0104	0.0447	5.51	4.98	1.86	8.98	10.84

(See also Map IV. and Chart VIII.)

A comparison of Analyses 3N and 4E, made on samples taken respectively at the head of Croton Lake, and from the gate-house of the New Aqueduct, shows that the water in its passage through the lake is not materially changed in character. If anything, it is poorer in quality at the gate-house than at the head of the lake. The slight increase in chlorine points to contamination through the tributaries, known to be polluted, which enter the lake. The water, as it enters the aqueducts, is not of good quality. Of the smaller tributaries, the water in two is bad (Analyses 3P and 3Q), in six it is unsatisfactory, being uniformly high in chlorine, and showing other evidence of contamination (Analyses 3O, 3R, 3Y, 4B, 4C, 4D), while in one it is fair (Analysis 3S). The three larger tributaries must be classed as unsatisfactory in the quality of their water (Analyses 3X, 3Z and 4A). Of these the most important is Kisco brook. A comparison of the analyses (3T and 3U) of samples taken respectively above and below the town of Mount Kisco shows very plainly, in the large increase of chlorine, the pollution received from that town. This is to be expected when the thorough drainage of the town by the brook is considered. The branch of the brook passing through Newcastle and near Oakview Cemetery gives similar indications of pollution from these sources (see Analyses 3V and 3W). While the organic nitrogen of the brook is largely removed by oxidation and vegetable assimilation before the water enters the reservoir, its water cannot be considered as of good quality.

CONCLUSIONS.

Up to July 31 of this year, the large number of analyses, covering a period of seven years, made of Croton water as supplied to New York City, by Dr. Waller, and by ourselves, have shown uniformly negative results as to the presence of nitrites. In the analysis made on the above date, nitrites were found. From that time to November 13, samples have been taken weekly from six different localities throughout the city, viz.: from the gate-house at One Hundred and Thirty-fifth street, the Central Park Reservoir, the Forty-second Street Reservoir, and from hydrants in Fifty-first, Mott and State streets. Nitrites were detected in one or more of these samples up to November 6. The samples taken on this date gave negative results. During the time occupied by our inspection of the Croton water-shed (August 15 to September 25), nitrites were found from week to week in all of the above samples. (See pages 2197 to 2199.)

The exceptional occurrence of nitrites in Croton water, as noted above, must be considered as indicative of a marked deterioration in the sanitary quality of the water. The results of our inspection of the Croton water-shed, and the analyses of samples collected over the area covered by inspection, afford an explanation of this deterioration. Briefly summed up, these results are as follows:

With but few exceptions, the streams, lakes and reservoirs on the water-shed show evidence of sewage contamination, more or less marked. Considering the long period of extreme drought which had prevailed on the shed previous to and during our inspection, and which had allowed of the accumulation of exceptionally large quantities of polluting material ready to be washed into the streams, etc., by the first heavy rain-fall, there can be no doubt that such rain-fall would have materially increased the contamination found. The long-continued dry weather has had a bad effect, in necessitating the use of storage water from reservoirs as a very large percentage of the total supply. This water, in several instances, exhibited the bad qualities due to practical stagnation during warm weather, in reservoirs containing much decomposing vegetable matter on their sides and bottoms.

The water of Sodom Reservoir and its outlet, the East Branch, was of specially bad character, both from accumulation of the products of vegetable decay, and from contamination. It is specially to be noted that from July 15, and during the time of our inspection, one-third of the entire water supply was drawn from this source, and that the deterioration of the supply, as indicated from the analyses, begun soon after the above date. When all of the above facts are considered, the decrease in the organic purity of Croton water follows as a necessary consequence.

On November 6, although the drouth still continued, the nitrites in Croton had disappeared. This is explained by the fact that shortly before this date the supply of water from Sodom Reservoir was exhausted, and that the commencement of colder weather started a circulation of the water stored in the other reservoirs, by which the agencies of agitation, oxidation, light, etc., were brought into play so as to effect a partial purification.

In general, we conclude that the condition of affairs as found by our investigation to exist at the present time on the Croton water-shed, is of a most serious character and requires immediate attention. There is nothing more important to the health of a community than the purity of its water supply. The danger to the City of New York from an outbreak of typhoid fever, or other kindred disease, on the Croton water-shed, is plainly apparent in the light of the facts set forth in this report. This danger must increase with the progressive deterioration of the water supply, and under existing conditions, such deterioration, while it may be gradual, is in our opinion, inevitable. It is, therefore, of paramount importance that prompt and efficient means be taken to remove the sources of contamination already existing on the water-shed, and to prevent future pollution from new sources.

Respectfully submitted,
EDWARD W. MARTIN, Chemist.
ALFRED L. BEEBE, Assistant Chemist.

Well Waters, New York Island.—The following table gives the results of a number of analyses, made during 1891 and previously, of water taken from wells in various parts of New York City. Sewage pollution is plainly shown. The impossibility of procuring water of good sanitary quality from such wells has been fully explained on page 2195 of this report, which see.

TABLE NO. 8.—*Analyses of Well Water, New York Island.*

LOCATION.	APPEARANCE.	CHLORINE	SODIUM CHLORIDE	PHOSPHATES.	NITROGEN IN NITRITES.	NITROGEN IN NITRATES	FREE AMMONIA.	ALBUMINOID AMMONIA.	HARDNESS EQUIVALENT TO CARBONATE OF LIME.		ORGANIC AND VOLATILE.	MINERAL MATTER.	TOTAL SOLIDS.
									Before Boiling.	After Boiling.			
Canal street	Clear	7.050	11.70	Trace	.....	1.0400	0.0024	0.0036	15.57	6.30	.....	.....	68.00
Monroe street	"	12.50	20.61	"	.....	0.6130	None.	0.0060	23.70	16.40	5.20	102.30	107.50
"	"	12.37	20.41	"	.....	5.8400	0.0015	None.	23.93	15.68	18.00	86.30	104.30
Fifteenth Ward		13.79	22.74	"	.....	3.1540	0.0100	0.0070	22.06	17.06	Trace.	74.50	74.50
West Twenty-third street	Clear	9.266	15.290	"	.....	5.0700	0.0832	0.0480	34.12	16.08	25.50	83.80	109.30
"		.....	.....	.....	.....	4.1740	0.0110	0.0070	.....	.....	11.80	69.20	81.00
West Thirty-second street	Yellow, opaque	9.37	15.45	Trace	.....	0.3700	0.0290	0.0060	21.57	6.18	15.00	55.00	70.00
Twenty-second Ward	Clear	6.486	10.70	"	.....	0.4810	0.0008	0.0140	30.80	11.76	8.00	46.90	54.90
Lower Broadway, 60 feet deep	Clear, light blue	6.213	10.238	None	Present.	1.3090	0.0433	0.0120	10 497	7.87	8.75	36.74	45.49
Grand street, 30 feet deep	"	0.941	1.551	"	None.	0.5760	None.	0.0032	4.58	4.27	4.37	10.21	14.58
West Twelfth street, 50 feet deep	Clear, light blue green	1.882	3.102	"	"	1.2540	0.3500	0.0021	6.08	6.04	5.54	17.50	23.04
East Fifty-fourth street	Clear, light blue	3.648	6.011	Faint trace	0.0002	0.2390	0.0014	0.0047	19.084	6.043	9.33	40.24	49.57
East Fifty-fifth street, 300 feet deep	Yellow green	16.69	27.51	.....	None.	0.1570	0.2900	0.1020	45.60	11.55	5.00	100.30	105.30
Marion street		12.50	20.60	Trace	"	0.6127	None.	0.0060	23.70	8.20	11.20	74.83	86.03
Avenue D	Clear, light blue	3.60	5.30	Decided	"	0.2370	0.0120	0.0130	8.28	6.46	3.00	14.50	17.50
Chambers street, 43 feet deep	Clear, blue brown	0.190	0.310	None	"	0.0470	0.0020	0.0160	3.50	3.40	3.00	5.00	8.00
Montgomery street	Clear, blue green	10.590	17.49	Decided	Trace.	9.8000	0.0120	0.0060	35.70	21.60	19.00	95.00	114.00
Goerck street	"	14.100	22.50	"	0.0004	6.5000	0.0810	0.0410	28.90	21.20	24.00	76.50	100.50
East Fifth street, 40 feet deep	Slightly turbid, brownish	8.232	13.566	None	0.0002	4.9070	0.0410	0.0084	41.04	29.40	33.00	105.50	138.50
South Fifth avenue	Clear, brown	8.071	13.30	Trace	0.0002	5.7580	0.0086	0.0030	17.938	7.39	26.50	69.20	95.50
East Fifty-fourth street, 160 feet deep	Clear, light blue	6.255	10.308	Faint trace	0.0002	0.4700	0.0024	0.0080	32.72	10.36	16.00	69.00	85.00
Jackson street, 73 feet deep	Clear, light brown blue	5.101	8.406	Trace	0.0002	1.6980	0.0950	0.0270	15.15	8.36	9.10	44.50	53.60
Harrison street	Clear, brown	9.66	15.37	Decided trace	0.0003	0.7411	0.3000	0.0320	10.58	3.40	12.50	39.80	52.30
Macdougal street, 69 feet deep	Turbid, brown	8.232	13.366	Trace	0.0003	3.0110	0.0240	0.0080	22.30	19.15	25.00	89.00	114.00
Greenwich street, 55 feet deep	Turbid, green	14.59	24.04	"	0.0003	3.2000	0.0102	0.0102	24.32	9.61	16.00	83.00	99.00
"	Clear, light blue	11.823	19.480	Decided	0.0001	4.5280	0.0012	0.0036	22.22	13.42	13.50	85.00	98.50
William street	Clear, colorless	45.00	74.00	Strong	0.0006	0.2050	0.0040	0.0035	58.00	45.00	22.00	134.00	156.00
Mulberry street	Clear, light blue	10.823	17.22	Decided	0.0003	2.0570	0.0020	0 0036	19.00	12.54	23.80	66.90	90.70
Spring street	Light yellow brown	16.98	27.03	Very decided	0.0004	3.2300	0.0650	0.0830	19.52	6.24	15.00	83.00	98.00
East One Hundred and Twenty-eighth street, 130 feet deep	Clear, light blue	0.807	1.330	Heavy trace	0.0003	0.4090	0.0026	0.0004	9.48	5.00	2.00	10.00	12.00
Broadway and Nineteenth street, 850 feet deep		26.64	42.40	Decided	0.0003	0.2940	0.0430	0.0130	41.66	28.82	17.50	91.00	108.50
" 30 feet deep		15.986	25.44	"	0.0002	0.8202	0.0030	0.0070	41. 6	21.99	17.00	78.20	95.20
North Moore street	Clear, brown blue	13.32	21.20	"	0.0003	5.6491	0.1400	0.0220	12.32	6.12	24.00	65.50	89.50
Mott and Varick streets	Clear, light blue	15.48	24.64	"	0.0003	6.5862	0.0024	0.0006	18.74	8.61	30.00	71.00	101.00
One Hundred and Fifteenth street and Fifth avenue	Turbid, light yellow	2.780	4.810	None	0.0004	2.0588	0.0020	0.0120	12.52	10.78	11.00	31.50	42.50
No. 419 East Fifty-fourth street	Slightly turbid, light yellow brown	7.873	12.991	"	0.0002	0.8235	0 0300	0.0150	30.60	17.00	11.00	112.00	123.00
No. 112 Hudson street, 35 feet deep	Very slightly turbid, very light yellow brown	17.520	28.870	"	0.0010	4.0433	0.0900	0.0300	30.60	17.00	23.00	89.00	112.00

2d. *Examination of Milk.*—During the year 359 samples of milk have been analyzed. As in former years, the adulteration detected in the great majority of cases has been the addition of water, the removal of cream, or both.

The following shows the relative amount of adulteration of various kinds discovered during the year. Results are expressed in percentages of the whole.

Adulteration by addition of water	53⅓ per cent.
Adulteration by addition of water and removal of cream	19⅔ per cent.
Adulteration by removal of cream	27 per cent.
	46⅔ per cent.

3d. *Examination of Condensed and Preserved Milk.*—During the past year particular attention has been given to the analysis of condensed and preserved milk. To detect the use of skimmed and adulterated milk, samples of the different makes of condensed milk were taken at least once every week, and analyzed with the following results:

Total number of samples	117
Number of samples (thick)	69
Number of samples (thin)	48
Highest amount of fat in thick	14.15
Lowest amount of fat in thick	9.50
Average amount of fat in thick	11.74
Highest amount of fat in thin	15.08
Lowest amount of fat in thin	12.25
Average amount of fat in thin	13.58

NOTE.—"Thin" condensed milk is milk condensed at a temperature not exceeding 125° Fahr., while the "thick" is milk which at the end of the operation of condensing has been heated for a few minutes to 180° Fahr. This so-called superheating gives a yellow color and greater viscosity to the product.

All of the different brands of preserved milk were analyzed, with the following results:

ANALYSIS NUMBER.	WATER.	FAT.	TOTAL SOLIDS.	SOLIDS NOT FAT.	SALTS.	MILK SUGAR.	CANE SUGAR.	ALBUMEN AND CASEIN.	MILK SOLIDS.
6421	27.40	9.00	72.60	63.60	1.95	12.24	39.27	10.34	33.33
6422	28.07	10.00	71.93	61.93	1.83	.....	.....	.....	.....
6423	28.05	8.95	71.95	63.00	1.70	12.69	41.03	7.58	30.92
6424	28.50	9.03	71.50	62.47	1.73	.....	.....	.....	.....
6425	27.15	9.35	72.85	63.50	1.75	11.99	34.69	15.07	38.16
6426	24.95	10.08	75.05	64.97	2.00	12.69	37.93	12.35	37.12
6427	26.45	9.38	73.55	64.17	1.78	11.94	41.55	8.90	32.00
6428	25.15	11.00	74.85	63.85	1.88	12.08	37.29	11.70	37.56
6429	25.20	9.70	74.80	65.10	2.23	13.73	38.65	10.49	36.15
6430	26.40	10.45	73.60	63.15	2.05	11.99	39.06	10.05	34.54
6431	25.50	10.60	74.50	63.90	2.05	12.54	38.64	10.67	35.86
6432	25.92	11.03	74.08	63.05	2.03	11.35	38.02	11.65	36.06
6433	27.47	10.08	72.53	62.45	2.00	12.09	37.71	10.65	34.82

ANALYSIS NUMBER.	WATER.	FAT.	TOTAL SOLIDS.	SOLIDS NOT FAT.	SALTS.	MILK SUGAR.	CANE SUGAR.	ALBUMEN AND CASEIN.	MILK SOLIDS.
6434	27.77	10.70	77.23	66.53	2.05	13.85	36.25	14.38	40.98
6435	25.42	10.00	74.58	64.58	1.73	12.19	40.93	9.73	33.65
6436	69.45	9.50	30.55	21.05	1.78	10.48	.....	8.79	30.55
6437	70.10	9.13	29.90	20.77	1.70	12.54	.....	6.53	29.90
6438	69.20	10.25	30.80	20.55	1.13	.....	.....	.....	.....
6439	26.27	8.45	73.73	65.28	1.85	12.69	43.71	7.03	30.02
6440	25.20	10.15	74.80	64.65	2.00	14.03	37.88	10.74	36.92
6441	25.12	9.10	74.88	65.78	1.88	12.69	37.81	13.40	37.07
6442	25.60	8.48	74.40	65.92	1.85	12.24	43.84	7.99	30.56
6444	26.22	11.35	73.78	62.43	2.03	12.69	37.93	9.78	35.85
6445	28.82	10.73	71.18	59.45	1.80	.....	.....	.....	.....
6447	26.87	11.75	73.13	61.38	1.95	.....	.....	.....	.....
6449	29.72	7.23	70.28	63.05	1.85	13.14	33.87	14.19	36.41
6471	25.10	8.65	74.90	66.25	1.88	11.94	43.63	8.80	31.27

No samples of condensed or preserved milk were found that would warrant action being taken against the dealers, and in general it can be stated that the quality of both the condensed and preserved milks was good.

4th. *Experimental Analyses.*—Of these 407 were made during the year. The more important are as follows:

(a) Analyses of milk containing colostrum. The samples were taken from a cow immediately after calving, and at intervals of twelve hours thereafter for several days.
(b) Comparison of various methods for the estimation of milk sugar and albumen in milk.
(c) Estimation of borax in milk.
(d) Tests on milk fat, extracted by Adam's method, for impurities.
(e) Separation and estimation of albumens and albuminoids in food products.
(f) Detection of strychnine in animal tissues.
(g) Estimation of morphine in food products and medicinal preparations.
(h) Comparison of various methods for the detection and estimation of antimony and arsenic in food products.
(i) Influence of varying conditions on the accuracy of the volumetric determination of chlorine in potable waters.
(j) Detection of minute quantities of grape sugar in urine.
(k) Separation and recognition of alpha and beta naphthol in food products.

INSPECTION OF MILK.

The inspection of milk has been carried out as in former years, as follows:

The Inspectors are provided with a lactometer and thermometer, which they have previously tested themselves, a tin cylinder for holding the milk to be tested, an inspection book and a label book (chapter 627, Laws of 1889), sample bottles holding six ounces, through the necks of which holes have been drilled, four-ounce bottles for laboratory samples, corks, wires, lead seals, and a sealing iron. A Sanitary Officer is detailed to accompany each Inspector as a witness.

The city is divided into seven milk inspection districts, which are enlarged or contracted as the number of milk stores therein increases or diminishes, in order that each Inspector may have about the same number of places under his supervision. There are at present in this city between four and five thousand places where milk is sold.

Each Inspector is required to be on duty at least eight (8) hours daily, except in special cases. He is required to have full knowledge of the number and character of the places where milk is sold in his district, of all points where milk enters his district from without the city, of the amount of milk so brought in, and in general to keep himself fully posted as to the milk trade in his district. He is shifted to another district every three weeks.

From May to November, inclusive, he is required twice a week to inspect the milk early in the morning (from 4 to 8.30 A. M.) as it is delivered by dealers to household-.

At least twice a month, when the temperature is not so low as to freeze the milk, the Inspectors are required to examine milk as it comes into the city, at ferries or railroad depots. These inspections usually last from 11.30 P. M. to 5 A. M. Frequent attendance at court is necessary.

The routine of milk inspection is as follows: The Inspector enters the store and asks the questions which are necessary to fill in the blanks in his inspection book. Under the head of "Remarks," he notes the location of the milk-can in the store, whether or no there is a dipper in the can, and, in general, all points which may be of use in case the dealer is brought to trial. In the round circle on his pad he notes the marks on the cover of the milk-can, which indicate the name and location of the shipper of the milk. He then thoroughly mixes the milk to be examined, pours a sample into the tin cylinder, takes the temperature and notes the lactometer standing. If the milk stands below 100°, at a calculated temperature of 60°, he then warms or cools the milk exactly to 60°, and notes the lactometer standing. If the lactometer standing is below 100° at 60°, the appearance and taste also indicating that the milk has been watered, two samples are taken, one to be brought to the laboratory for confirmatory analysis, while the other is sealed by passing a wire through the cork and holes in the bottle neck, wrapping this once round the bottle neck, slipping a seal over the ends of the wire, and sealing this securely by means of the sealing-iron, which stamps "Health Department, City of New York" on one side, and on the other the distinguishing number of the Inspector. A label, in conformance with chapter 627, Laws of 1889, is then filled out and pasted on the bottle, and the latter delivered to the dealer or party in charge of the store. The milk is then destroyed by pouring it into the gutter or into the sink in the store. The sample for the Assistant Chemist is marked with the Inspector's distinguishing letter, and the number of the inspection, together with the lactometer standing. A slip duplicating the Inspector's memorandum of the inspection is left with the Chief Chemist for his information. When the report of the analysis is received from the Assistant Chemist, the Chief Chemist determines (by advice of the Attorney and Counsel and Sanitary Superintendent) whether or not the dealer shall be arrested, and at once notifies the Inspector. Should the appearance, taste and lactometric standing of a sample of milk indicate that it is skimmed, or skimmed and watered, the course of procedure outlined above for watered milk is carried out, with the exception that the milk is not destroyed. In the matter of "early morning" inspections of dealers' wagons, or of night inspections at ferries or depots the same plan is followed.

Nearly all of the places in the city where ice-cream is made have been inspected, to insure cleanliness and the use of proper material and vessels.

A comparison of the work performed by the Inspectors during the years 1890 and 1891 is given below:

	1890.	1891.
Inspections	58,721	96,377
Specimens examined	97,040	146,822
Complaints investigated	82	44
Nights of special work	103	74
Quarts destroyed	3,708	1,744
Arrests	299	186
Held on bail	287	170
Amount of fines	$7,400	$4,286

Increase in inspections	64 per cent.
Increase in specimens examined	51 1/3 "
Decrease in quarts destroyed	53 "
Decrease in arrests	37 8/10 "

The following table shows the total receipts of milk, cream and condensed milk over all roads for 1890 and 1891:

	Milk (in Cans).		Cream (in Cans).		Condensed Milk (in Cans).	
	1890.	1891.	1890.	1891.	1890.	1891.
January	503,374	513,090	6,948	6,511	6,000	6,328
February	464,946	484,048	7,035	7,148	5,613	5,521
March	510,842	500,549	7,764	7,415	6,273	6,218
April	519,257	538,288	10,074	11,123	6,273	6,212
May	588,736	575,210	16,492	15,979	6,334	6,616
June	593,838	622,410	20,615	23,295	5,458	6,019
July	584,623	598,453	19,814	18,834	5,911	5,756
August	530,902	578,245	16,517	17,471	5,153	5,636
September	502,938	585,180	10,377	15,051	4,906	4,873
October	513,757	591,557	7,431	10,407	5,587	4,956
November	491,495	561,032	7,363	9,154	5,351	4,919
December	474,024	557,033	6,577	8,710	5,872	5,058
Total	6,284,732	6,715,155	137,007	151,098	68,731	68,111
Equivalent in quarts	251,389,280	268,606,200	5,480,280	6,043,920	2,749,240	2,724,480
Increase in quarts, 1891 over 1890.	.....	17,216,920	.....	563,640	.....	*24,760

* Decrease.

A system of issuing permits for the sale of milk, cream and condensed milk to all venders of milk throughout New York City is, in the opinion of the Chemist, eminently desirable. A brief outline of the system, as given in report for 1890, is repeated here: Each vender would make application to this Department for a permit to sell milk, etc., in which application should be stated his name and address and the amount of milk, cream or condensed milk he proposes to sell daily. The source from which the milk, etc., is to be obtained should also be stated. Permits would now be issued, which would be of three classes. The first class would be issued to venders who desire to sell milk at a specified place; the second class to milk peddlers, and the third class to those who desire to engage in the sale of milk by both methods. Thereafter, any vender convicted of a violation of section 186 of the Sanitary Code, or of other sections relating to the sale of adulterated milk, would be warned that a second conviction would result in the immediate revoking of his permit. The advantages to be derived from this system would be:

1st. The driving out of business of all venders habitually selling adulterated milk.

2d. A great improvement in the quality of milk brought into the city, through the fact that venders, for their own protection, would insist upon being furnished by producers with an unadulterated article.

3d. The prevention of the sale of milk from cows improperly fed and cared for, as permits would be refused to venders dealing in the milk from such animals.

INSPECTION OF FRUIT AND FOODS.

This has been carried on as in 1890. Fruit, vegetables and canned goods have been inspected as brought into the city on vessels, at piers and at railroad depots, and also at commission houses, auction rooms, sales of condemned government stores, etc. At least once a week during the summer, the fruit and foods offered for sale by venders in Ludlow, Hester, Mulberry and adjacent streets have been inspected; also that sold on Ninth avenue, between Forty-second and Thirty-seventh streets. Fruit Inspector B. C. Fuller reports the receipts for the year as follows:

Fruits.

Bananas	4,000,000 bunches.
Oranges	1,750,000 boxes and barrels.
Apples	750,000 barrels.
Foreign and do nestic grapes	3,000,000 kegs, crates and baskets.
Small fruits, Peaches, pears, plums, Berries of all kinds	5,000,000 crates, barrels and baskets.
Pineapples	12,774,000
Foreign and domestic dried fruits	7,500,000 cases, bags and boxes.
Total	34,774,000

Canned Goods.

	Cases.
Tomatoes	450,000
Corn	325,000
Beans, squash, asparagus, etc	800,000
Fruits	900,000
Salmon, lobsters, oysters, sardines and mackerel, etc	330,000
Foreign sardines, etc., and domestic meats	2,500,000
Total	5,305,000

Vegetables.

	Pounds.
Beets	8,000,000
Carrots	50,000
Cabbage	30,000,000
Onions	10,000,000
Potatoes (sweet and Irish)	558,000,000
Small vegetables (miscellaneous) and eggs	20,000,000
Total	626,050,000

The work performed by the Fruit Inspectors has increased. Over 160,000 pounds more fruit, etc., were seized in 1891 than in 1890.

INSPECTION OF MEAT.

The inspection of meat during the year has been conducted as heretofore, with this in addition, that every retail butcher store in the city was inspected at least once for the purpose of determining the following:

1st. Quality of the meat sold.

2d. Whether premises were clean.

3d. Whether the ice-box was connected with the sewer in such a way as to prevent the discharge of sewer gas into said box.

Number of butcher stores inspected	2,070
General condition good	1,995
General condition bad	75
Properly connected with sewer	1,276
Improperly connected with sewer	794

In every case where improper sewer connection was observed, the facts were at once reported to the Chief Sanitary Inspector for action. Inspections were made tri-weekly of all the public markets, to ascertain their general condition, and it was found that with but few exceptions the quality of the meat and fish sold was good, and the markets in good sanitary condition.

Tuberculosis.—All of the cattle killed in the city were examined by the Meat Inspectors, as far as possible, particular attention being given to detecting tuberculosis, and as this disease appears to be confined almost entirely to cows, it is safe to say that very little tuberculous meat has escaped the scrutiny of the Inspectors. Only few cases were found. In one instance, where the cow was found to have come from this State, Meat Inspector Mars and Veterinarian Johnson were sent to the farm. The herd was examined, and as some of the cows were affected with tuberculosis, all of the milk from this farm was prevented from coming to the city. A sample of milk from one of the cows was taken and submitted to Dr. Prudden, Consulting Pathologist to the Department, who identified the bacillus tuberculosis in the milk, and was enabled by culture to propagate the germ and reproduce the disease in animals. Whenever a case of tuberculosis is discovered by the Meat Inspectors, the locality where the animal came from is ascertained, and all of these facts are at once forwarded in a special report.

The inspection of veal has been carried on with great care, 60,000 pounds more of "bob" veal being seized during 1891 than in 1890. The amount of work performed by the Meat Inspectors is largely in excess over the preceding year. Over 300,000 pounds more of meat were seized during 1891 than in 1890. The following table shows the number of animals slaughtered in this city during the past year:

	Carcasses.	Pounds.
Cattle	450,982	306,363,400
Hogs	1,289,333	155,327,080
Sheep and lambs	1,156,283	51,032,735
Calves	211,341	20,937,380
Total	3,107,939	533,660,595

The following table shows the amount of meat and poultry brought into this city during the past year:

Live poultry, 1,214 car-loads, amounting to	13,354,000 pounds.
Dressed poultry, 337,572 packages, amounting to	67,514,400 "
Dressed beef, 290,000 carcasses, amounting to	304,500,000 "
Dressed sheep, 730,000 carcasses, amounting to	29,200,000 "
Dressed hogs, 450,665 carcasses, amounting to	45,066,500 "
Dressed calves, 300,000 carcasses, amounting to	24,000,000 "
Total	483,624,900 pounds.

INSPECTION OF FISH.

The inspection of fish has been carried on as during the preceding year. Fulton Market, the great fish depot of the city, and the adjacent ice-houses, have been inspected daily. The fish sold on the east side has been inspected bi-weekly, besides the small retail stands, stores, licensed venders, etc. Over 50,000 pounds more of fish were seized during 1891 than in 1890.

The cold storage of fish is largely carried on in this city, over 500,000 pounds of fish are so stored. Daily inspections of these ice-houses are made.

During the past year there was brought into this city over 43,000,000 pounds of fresh fish.

INSPECTION OF OFFENSIVE TRADES.

The same system of inspection has been followed as in the preceding year, and with the exception of the nuisances caused by the Standard Gas Company, which have been abated, no serious cause of complaint has been found against the other gas companies, the slaughter-houses or their allied industries. Daily inspections have been made of the gas-houses, and the general condition of the works has been found good. Many complaints have been received of gas leaks in mains, etc., but this kind of nuisance has usually been abated within twenty-four hours after receiving the complaint; the course pursued being to notify the gas companies having mains in the locality where the leak occurs. In no instance have the companies so notified allowed a greater length of time than twenty-four hours to elapse before closing the leak or endeavoring to find it.

The quantity of gas manufactured in this city has increased during the past year. The following table shows the amount made daily by the different companies:

Name of Company.	Location of Works.	Kind of Gas.	Average Daily Output.	Miles of Mains in Use.
Consolidated	Eighteenth street and Tenth avenue	Coal	35,000,000	790
"	Forty-second street and Eleventh avenue	"		
"	Forty-fourth street and Eleventh avenue	Water		
"	Fourteenth street and Avenue C	"		
"	Twenty-first street and Avenue A	"		
"	Ninety-ninth street and First avenue	"		
"	One Hundred and Tenth street and First avenue	"		
Mutual	Twelfth street and East river	"	2,500,000	140
Standard	One Hundred and Fifteenth street and East river	"	1,500,000	160
Equitable	Forty-second street and East river	"	4,000,000	140
Northern	West Farms	"	600,000	35
Central	Foot East One Hundred and Thirty-ninth street	"	800,000	60
Pintsch	One Hundred and Fifty-fourth street, near Railroad avenue	Oil	37,000	....

Several different methods of gas making are in use in this city. I append the report of Sanitary Officer J. W. Phillips, Inspector of Offensive Trades, in relation thereto, as follows:

1st. The Equitable Gas-light Company, Fortieth street and First avenue.—Jermanonnsky process: Heating stone lime in generator to an incandescent heat; injecting steam accompanied by a small quantity of oil through the body of the lime, thus decomposing the steam and forming hydrogen and carbonic oxide; from thence to hydrogen holder; to carburetters, where it takes up the naphtha vapors; through the carburetters to retorts heated to a very high temperature, where the gas becomes chemically fixed. From retorts to hydraulic main to purifiers, where the carbonic acid gas is removed by lime and the sulphur compounds are removed by oxide of iron. From purifiers to station meters, meters to holders, holders to consumers. This company has eight holders, with a capacity of five million cubic feet, an average output of four million feet per day, capacity of manufacturing eight million cubic feet of gas per day; consumes one hundred tons of hard coal per day. Drips and combustible refuse burned. Has one hundred and forty miles of mains. E. J. Enfer, superintendent.

Mutual Gas-light Company, Eleventh street and Avenue D.—Wilkinson process. In this process the steam is injected into generator and decomposed, forming hydrogen and carbonic oxide. From generator to holder, thence to condensers and scrubbers, to lime purifiers, where the carbonic acid gas is removed, thence to meter, from meter to illuminator, where it picks up vaporized naphtha, which supplies the light to the hydrogen. (It is to be noted that in this process the hydrogen is purified before meeting the naphtha vapors.) The hydrogen gas and the naphtha vapors pass from the illuminators to twenty-foot fixing retort, heated to a very high temperature, where the gases become chemically fixed; thence to condensers and scrubbers; to purifiers, charged with oxide of iron, which removes the sulphur compounds; thence to station meter holders, to consumers. This company has thirteen holders with a capacity of four and a half million feet, consumes a hundred tons of hard coal per day, average output two and a half million feet per day, and has one hundred and forty miles of mains. H. F. Allen, superintendent.

Standard Gas-light Company of New York. One Hundred and Fifteenth street and Harlem river.—Cupola system; Flannery process. In this process one machine is used for decomposing steam, vaporizing naphtha and fixing the gas. It is divided into three chambers, lined with corrugated fire-brick. The steam is injected into the front of the machine or generator, which is filled with coal heated to a red heat, where it is decomposed by passing through the body of the coal and thence to the middle chamber or super-heater, where it meets and takes up the naphtha vapors, the naphtha having been injected into the rear chamber or carburetter, and there forms a fixed gas; from thence to hydraulic main, to condensers, to scrubbers, to relief-holder, to purifiers, to station meter to holders; thence to consumers. Oxide of iron and lime are used for purifying. This company has six holders, an average of one and a half million cubic feet per day, consumes thirty-five tons of hard coal per day, has one hundred and sixty miles of mains. Weeks, superintendent.

Eighteenth Street Station, Consolidated Gas Company.—At these works pure coal gas is manufactured, the process being the heating of retorts to a red heat, then charging the same with cannel coal by means of long scoops, each scoop operated by three men. As each retort is charged, it is hermetically sealed, and the heat is kept up by furnaces underneath. The process of distillation requires about three hours. The lids of the retorts are then loosened and the gas at the mouth of the retort is lighted, in order to prevent explosion by its becoming mixed with air. The red hot coke is then raked out by means of a machine operated by steam, and is used at once for firing the furnaces, or is wheeled out in iron wheelbarrows into the yard, where it is quenched by water. The gases distilled from the coal pass to the hydraulic main. This hydraulic main has a water seal (in old works a tar seal), which effectually prevents any of the gases returning into the retorts after they have been opened. Tar accumulates very fast in hydraulic main, and has to be frequently removed. The gas after leaving main goes to dry scrubber; thence to condensers, where tar and aqueous vapors are removed; thence to washer to remove the ammonia, to purifiers where sulphur compounds and carbonic acid gas, etc., are removed; to station-house meter, holders and consumers. These works have ten holders; purifying material, lime. Albert Smith, superintendent.

Twenty-first Street Station, Consolidated Gas Company.—In this station there are two processes in use for making water-gas, the Tessie Du Motay and the Lowe process. As the Tessie Du Motay process is similar in many respects to the Equitable, it will be unnecessary to describe it. In the Lowe process three separate vertical retorts, kept at a very high temperature, are used, No. 1, the generator; No. 2, the carburetter; No. 3, the super-heater. The steam is injected into the generator, where it is decomposed, forming hydrogen and carbonic oxide; thence to carburetter, where it is carburetted by taking up the naphtha vapors, the naphtha having been injected into the carburetter and vaporized. The mixture then passes into the super-heater, where the gases become chemically fixed; from thence to holder, where the gas becomes partially cool and receives the necessary pressure to convey it to the scrubbers and condensers; thence to purifiers, where the carbonic acid gas and sulphur compounds are removed; thence to station-house meters, holders and consumers. These are the largest works in the city, covering more grounds and having a larger capacity than any other. Lee, superintendent.

Consolidated Gas Company, Forty-second Street Works.—Manufactures coal-gas, enriched with oil. The retorts are heated to a very high temperature. In each retort there is a six-inch iron pipe running the length of the retort, to which there is connected a one-inch iron tube, through which the naphtha is injected into the red-hot six-inch iron pipe. In passing through this larger pipe the naphtha is vaporized. Escaping at the inner end of the pipe into the body of the retort, it becomes a fixed gas, going from thence to the hydraulic main, to dry scrubber, and thence to condenser, where it mixes with the coal gas, the mixture then entering the purifiers. This double process is not used with cannel coal—only with a low grade of bituminous coal—the naphtha very much increasing the candle power. Lime is used for purifying. Four holders. Downs, superintendent.

Fourteenth Street Station, Consolidated Gas Company.—Pure coal gas, which has been described. Purifying material, lime. Nine holders. Albert Smith, superintendent.

One Hundred and Eleventh Street Station, Consolidated Gas Company.—Pure coal gas. Purifying material, lime. Four holders. Bradley, superintendent.

Ninety-ninth Street Station, Consolidated Gas Company.—The Tessie Du Motay process—water gas. Purifying material, lime. Four holders. Bradley, superintendent.

Forty-fourth Street Station, Consolidated Gas Company.—The Tessie Du Motay process. Purifying material, lime. Seven holders.

Total number of Consolidated holders at the works is forty-six. Outside of their works they have six holders at Sixty-fifth street and Amsterdam avenue, three at Sixty-third street, between First avenue and Avenue A, and one at Inwood. Total number of holders, fifty-six—seven hundred and ninety miles of mains.

The Pintsch and Compressing Gas-light Company, One Hundred and Fifty-fourth street, near Railroad avenue.—This company manufactures a gas from petroleum of very high candle power. The gas is used exclusively for lighting cars. The process is the heating of retorts to a very high temperature, injecting a constant stream of oil into said retorts where it is vaporized; the gases from the retorts pass down into a small square iron box, which contains a water seal, from thence through a main to condensers and washers, to purifiers, to meters, to holders. From holders it is compressed into cylinders on flat cars for distribution to wherever required. This gas is too expensive for ordinary lighting purposes, there being a large amount of residuum in the shape of drips, tar, etc. The holder capacity of works is: one ordinary holder, capacity of two thousand feet; four cylinders with a capacity of two hundred and sixty-five feet each; total storage capacity, three thousand and sixty cubic feet. Consumes eight thousand pounds of coke per day. Average daily output, thirty-seven thousand cubic feet. Purifying material, lime. C. F. Jewell, superintendent.

Central Gas-light Company of New York City, One Hundred and Thirty-eighth street and East river.—This company manufactures pure coal gas. Capacity of works about eight hundred thousand feet per day; average output four hundred and eleven thousand feet per day. Three holders with a capacity of six hundred thousand cubic feet. Sixty miles of mains. Purifying materials, lime and oxide of iron. President and superintendent, William R. Beal.

Northern Gas-light Company of New York, works at West Farms and Bronx river.—Pure coal-gas process. Three holders. Thirty-five miles of mains.

Slaughter-houses and Allied Industries.—During the past year the general condition of the slaughter-houses has been excellent, and upon the east side a great improvement is contemplated, viz.: the tearing down of the old slaughter-houses between Forty-third and Forty-fourth streets, and the erection of a new abattoir on the site of the old ones. Mr. Jacob Fleischauer has rebuilt the abattoirs between Forty-fourth and Forty-fifth streets, on First avenue. By the summer of 1892, therefore, nearly all of the abattoirs on the east side will be of the most approved style, and furnished with all of the modern improvements, thereby reducing possible sources of nuisance to a minimum.

During April of this year the factory of Schwartzchild & Sulzberger, for working up and disposing of the offal, etc., was burnt down. In the building were six thousand green hides, besides many tons of dried blood. This necessitated the daily removal of nearly fifty barrels of offal and blood by the offal contractors, White & Sons. This would have proved a source of dangerous and intolerable nuisance if it had not been for the hearty co-operation of the butchers and the offal contractors. Officer Phillips, Police Inspector of Offensive Trades, deserves especial mention, for during a period of nearly three weeks either he or I were on duty night and day, and only the most careful attention to the constant disinfection of the ruins, and the daily disinfection and removal of the offal and blood, prevented the odors from spreading over that portion of the city near the place. Bromine was found to be the best disinfectant and deodorizer. The result of this fire proves conclusively the necessity of disposing of the offal and blood at or very near the place where the animals are killed; any system of removal to a distance will create a nuisance from time to time, no matter what care is exercised. A new factory is nearly completed. It will be in operation by March 1, 1892, and will be furnished with all of the best and improved means for disposing of the offal and blood. The slaughter-houses and allied industries are inspected daily, and the same system is in force as during the past year, viz.: constant disinfection with bromine and by whitewashing; cleaning up as soon as killing is over; daily removal of all blood, offal, hides, heads and hoofs, and the condensation and burning of all gases and vapors arising from their disposition. During this year the amount of blood and offal produced was about the same as last year, viz.: blood, 22,000,000 pounds; offal, 112,000,000 pounds.

The smoke nuisance is becoming a very serious matter in the city, as increase in the number of factories keeps pace with the growth of the city.

The following table shows the amounts of anthracite and bituminous coal consumed in this city yearly from 1888 to 1892:

YEAR.	CHARACTER OF COAL.	TONS.	YEAR.	CHARACTER OF COAL.	TONS.
1888	Anthracite	3,700,000	1890	Anthracite	3,750,000
1888	Bituminous	800,000	1890	Bituminous	900,000
1889	Anthracite	3,500,000	1891	Anthracite	4,000,000
1889	Bituminous	800,000	1891	Bituminous	1,000,000

The necessity of some means of consuming the smoke, resulting from the burning of this amount of coal, seems clearly indicated. It has been found that careful firing does much to abate the smoke nuisance. The Hudson River Railroad Company have abated in a great measure the nuisance from smoke at or near the depot at Forty-second street, on the line of the Fourth Avenue Tunnel, and on Eleventh and Twelfth avenues, by substituting coke as a fuel on the yard engines, hard coal for soft on many of the local trains, and careful firing when using either hard or soft coal.

The use of shavings and sawdust as a fuel is a constant source of nuisance; yet here, again, care in their use has done much to abate the nuisance.

Offensive odors from Hunter's Point have only been noticed at rare intervals, and have only lasted a short time. There appears to have been more care used in and about the Standard Oil Company's works than formerly. The distilling of bones at Hunter's Point, to produce animal charcoal, is no longer a source of nuisance, owing to the fact that the gases which formerly escaped are now treated for the purpose of saving the ammonia contained.

It has been found, as in former years, that many nuisances can be abated by explaining to those causing such nuisance the danger and discomfort they are producing, and it is gratifying to state that we have received, in most cases, the hearty co-operation of the parties complained of.

In conclusion, it gives me much pleasure to state that, without exception, the Assistant Chemists and Inspectors in this Division have performed their duties in a most creditable manner, and that the amount of work performed by each one of them is much in excess over that of any preceding year. It must be said that the amount of work performed by the Inspectors has reached its maximum.

Respectfully submitted,
EDWARD W. MARTIN, Chemist.

To the Board of Health, City of New York:

GENTLEMEN—I have the honor to submit the following report of the Willard Parker and Reception Hospitals for the year ending December 31, 1891:

WILLARD PARKER HOSPITAL.

General Statement.

1891.	MALES.	FEMALES.	NATIVE.	FOREIGN.	TOTAL.	MOTHERS.
Remaining in Hospital December 31, 1890	17	17	31	3	34	2
Admitted	269	324	409	184	593	94
Total	286	341	440	187	627	96
Discharged	188	230	281	137	418	92
Died	80	85	127	38	165	..
Total	268	315	408	175	583	92
Remaining in Hospital December 31, 1891	18	26	32	12	44	4

Total number of cases treated	627
Mothers accompanying	96
Total number of patients and mothers	723
Scarlet fever, mortality per cent	24.69
Diphtheria, mortality per cent	28.05

REMAINING IN HOSPITAL DECEMBER 31, 1890.

	CLASS.				MALES.			FEMALES.				
	City.	Public Institutions.	Walked in.	Quarantine.	Native.	Foreign.	Total.	Native.	Foreign.	Total.	Total Males and Females.	Mothers.
Scarlet fever	7	10	2	1	9	1	10	10	..	10	20	..
Diphtheria	6	4	4	..	6	1	7	6	1	7	14	2
Total	13	14	6	1	15	2	17	16	1	17	34	2

ADMISSIONS.

Scarlatina	189	72	29	14	113	35	148	110	46	156	304	44
Diphtheria	144	55	83	7	77	44	121	109	59	168	289	50
Total	333	127	112	21	190	79	269	219	105	324	593	94

DISCHARGES.

Scarlatina	119	63	25	9	85	21	106	79	31	110	216	40
Diphtheria	94	46	58	4	49	33	82	68	52	120	202	52
Total	213	109	83	13	134	54	188	147	83	230	418	92

DEATHS.

Scarlet fever	61	8	5	6	23	15	38	35	7	42	80	..
Diphtheria	47	10	26	2	31	11	42	38	5	43	85	..
Total	108	18	31	8	54	26	80	73	12	85	165	..

REMAINING IN HOSPITAL DECEMBER 31, 1891.

	Class.				Males.			Females.			Total Males and Females.	Mothers.
	City.	Public Institutions.	Walked in.	Quarantine.	Native.	Foreign.	Total.	Native.	Foreign.	Total.		
Scarlet fever	16	11	1	..	14	..	14	6	8	14	28	4
Diphtheria	9	3	3	1	3	1	4	9	3	12	16	..
Total	25	14	4	1	17	1	18	15	11	26	44	4

RECAPITULATION OF REPORT FOR THE YEAR ENDING DECEMBER 31, 1891.

	Remaining in Hospital December 31, 1890.		Admitted during the Year.		Discharged during the Year.		Died during the Year.		Remaining in Hospital December 31, 1891.			
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Native.	Foreign.	Total.
Scarlet fever	10	10	148	156	106	110	38	42	14	14	20	8	28
Diphtheria	7	7	121	168	82	120	42	43	4	12	12	4	16
Total	17	17	269	324	188	230	80	85	18	26	32	12	44

SCARLET FEVER.

	Remaining in Hospital December 31, 1890.			Admitted during the Year.			Discharged during the Year.			Died during the Year.			Remaining in Hospital December 31, 1891.			Mortality per centum.
	Native.	Foreign.	Total.	Native.	Foreign.	Total.	Native.	Foreign.	Total.	Native.	Foreign.	Total.	Native.	Foreign.	Total.	
Under 5 years	15	..	15	133	34	167	90	20	110	47	14	61	11	..	11	33.5
5 years and under 16 years	3	1	4	87	40	127	71	29	100	10	8	18	9	4	13	13.74
16 years to 21 years	1	..	1	2	5	7	2	2	4	1	..	1	..	3	3	12.5
Over 21 years	..	..	..	1	2	3	1	1	2	..	..	..	..	1	1	....
Total	19	1	20	223	81	304	164	52	216	58	22	80	20	8	28	24.7

DIPHTHERIA.

	Remaining in Hospital December 31, 1890.			Admitted during the Year.			Discharged during the Year.			Died during the Year.			Remaining in Hospital December 31, 1891.			Mortality per centum.
	Native.	Foreign.	Total.	Native.	Foreign.	Total.	Native.	Foreign.	Total.	Native.	Foreign.	Total.	Native.	Foreign.	Total.	
Under 5 years	3	..	3	112	12	124	60	4	64	53	8	61	2	..	2	48.
5 years and under 16 years	6	1	7	46	16	62	33	11	44	11	5	16	8	1	9	23.2
16 years to 21 years	1	..	1	12	32	44	8	30	38	4	1	5	1	1	2	12.
Over 21 years	2	1	3	17	42	59	17	39	56	1	2	3	1	2	3	4.84
Total	12	2	14	187	102	289	118	84	202	69	16	85	12	4	16	28.

RECEPTION HOSPITAL.

General Statement.

1891.	Male.	Female.	Native.	Foreign.	Total.	Mothers.
Remaining in Hospital December 31, 1890	..	1	..	1	1	..
Admitted	464	440	443	461	904	150
Total	464	441	443	462	905	150
Discharged	15	5	7	13	20	5
Transferred	445	435	433	447	880	145
Died	4	1	3	2	5	..
Total	464	441	443	462	905	150
Remaining in Hospital December 31, 1891	..	..	..	..	..	..

REMAINING IN HOSPITAL DECEMBER 31, 1890.

	Class.			Males.			Females.			Total Male and Female.	Mothers.
	City.	Public Institutions.	Quarantine.	Native.	Foreign.	Total.	Native.	Foreign.	Total.		
Observation	1	..	..	..	..	..	..	1	1	1	..
Total	1	..	..	..	..	..	..	1	1	1	..

ADMISSIONS.

	Class.			Males.			Females.			Total Male and Female.	Mothers.
	City.	Public Institutions.	Quarantine.	Native.	Foreign.	Total.	Native.	Foreign.	Total.		
Variola	6	..	15	2	13	15	..	6	6	21	18
Typhus fever	6	1	1	..	5	5	..	3	3	8	1
Scarlatina	166	64	11	63	49	112	74	55	129	241	7
Scarlatina and diphtheria	1	1	..	..	..	..	1	1	2	2	..
Scarlatina and ophthalmia	1	..	..	..	..	..	1	..	1	1	..
Measles	220	119	205	131	146	277	122	145	267	544	110
Measles and diphtheria	10	1	6	2	8	10	6	1	7	17	5
Pertussis	5	5	..	6	..	6	4	..	4	10	1
Varicella	4	7	4	7	3	10	4	1	5	15	5
Diphtheria	3	1	..	..	..	..	2	2	4	4	..
Leprosy	2	..	..	..	2	2	..	..	..	2	..
Mumps	1	..	..	..	..	..	1	..	1	1	..
Observation	29	5	4	14	13	27	3	8	11	38	3
Total	454	204	246	225	239	464	218	222	440	904	150

DISCHARGES.

Variola	..	..	..	..	..	..	..	..	..	..	2
Measles	..	..	..	..	..	..	..	..	..	..	2
Leprosy	2	..	..	..	2	2	..	..	..	2	..
Mumps	1	..	..	..	..	..	1	..	1	1	..
Observation.											
Varicella	..	..	1	..	1	1	..	..	..	1	1
Mumps	1	..	..	1	..	1	..	..	..	1	..
Tonsilitis	1	..	..	..	1	1	..	..	..	1	..
Tonsilitis and specific urethritis, epididymitis	1	..	..	..	1	1	..	..	..	1	..
No case	8	3	2	4	5	9	1	3	4	13	..
Total	14	3	3	5	10	15	2	3	5	20	5

TRANSFERRED TO NORTH BROTHER ISLAND.

Variola	6	..	15	2	13	15	..	6	6	21	16
Typhus fever	6	1	1	..	5	5	..	3	3	8	1
Scarlatina	154	59	9	57	44	101	69	52	121	222	7
Scarlatina*	11	5	2	5	5	10	5	3	8	18	..
Scarlatina and diphtheria	1	1	..	..	..	..	1	1	2	2	..
Scarlatina and ophthalmia	1	..	..	..	..	..	1	..	1	1	..
Measles	219	119	205	130	146	276	122	145	267	543	108
Measles and diphtheria	10	1	4	2	6	8	6	1	7	15	5
Pertussis	5	5	..	6	..	6	4	..	4	10	1
Varicella	4	7	4	7	3	10	4	1	5	15	5
Diphtheria	3	..	..	..	..	..	1	2	3	3	..
Observation.											
Variola	1	..	..	..	1	1	..	..	..	1	..
Scarlatina	3	1	..	1	1	2	..	2	2	4	..
Scarlatina and measles	..	..	1	..	1	1	..	..	..	1	2
Measles	10	..	..	4	1	5	1	4	5	10	..
Diphtheria*	4	1	..	3	1	4	1	..	1	5	..
Diphtheria and mumps	1	..	..	1	..	1	..	..	..	1	..
Total	439	200	241	213	227	445	215	220	435	880	145

*To Willard Parker Hospital.

DEATHS.

Scarlatina	1	..	..	1	..	1	..	..	..	1	..
Measles	1	..	..	1	..	1	..	..	..	1	..
Measles and diphtheria	..	..	2	..	2	2	..	..	..	2	..
Diphtheria	..	1	..	..	..	..	1	..	1	1	..
Total	2	1	2	2	2	4	1	..	1	5	..

Dead bodies received, 88.
Remaining in hospital December 31. 1891, nil.

RECAPITULATION OF REPORT FOR THE YEAR ENDING DECEMBER 31, 1891.

	Remaining in Hospital December 31, 1890.		Admitted during the Year.		Discharged during the Year.		Transferred during the Year.		Died during the Year.		Remaining in Hospital December 31, 1891.					
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Native.	Foreign.	Total.	Mothers.
Variola	..	..	15	6	..	..	15	6	..	..	..	..	..	..	..	..
Typhus fever	..	..	5	3	..	..	5	3	..	..	..	..	..	..	..	..
Scarlatina	..	..	112	129	..	..	101	121	1	..	..	..	..	..	..	..
Scarlatina*	..	..	..	..	..	..	10	8	..	..	..	..	..	..	..	..
Scarlatina and diphtheria*	..	..	..	2	..	..	..	2	..	..	..	..	..	..	..	..

	Remaining in Hospital December 31, 1890.		Admitted during the Year.		Discharged during the Year.		Transferred during the Year.		Died during the Year.		Remaining in Hospital December 31, 1891.					
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Native.	Foreign.	Total.	Mothers.
Scarlatina and ophthalmia	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..
Measles	..	..	277	267	..	..	276	267	1	..	..	..	..	..	..	..
Measles and diphtheria	..	..	10	7	..	..	8	7	2	..	..	..	..	..	..	..
Pertussis	..	..	6	4	..	..	6	4	..	..	..	..	..	..	..	..
Varicella	..	..	10	5	..	..	10	5	..	..	..	..	..	..	..	..
Diphtheria*	..	..	..	4	..	..	..	3	..	1	..	..	..	..	..	..
Leprosy	..	..	2	..	2	..	..	..	..	..	..	..	..	..	..	..
Mumps	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..
Observation	..	1	27	11	..	..	..	..	..	..	..	..	..	..	..	..
Variola	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Scarlatina	..	..	..	..	..	..	2	2	..	..	..	..	..	..	..	..
Scarlatina and measles	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Measles	..	..	..	..	..	..	5	5	..	..	..	..	..	..	..	..
Varicella	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Diphtheria*	..	..	..	..	..	..	4	1	..	..	..	..	..	..	..	..
Diphtheria and mumps	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Mumps	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Tonsilitis	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Tonsilitis and specific urethritis, epididymitis	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
No case	..	..	..	..	9	4	..	..	..	..	..	..	..	..	..	..
Total	..	1	434	409	15	5	445	435	4	1	..	..	..	..	..	..

*To Willard Parker Hospital.

As compared with the report for the year 1890, the preceding tables show an increase in the number of admissions of scarlatina of 149, and a decrease of diphtheria of 3, a total increase of 146; and as compared with the year 1889, which is credited with 588 admissions, the largest number previously admitted to this hospital, the tables show also an increase in the number of admissions of scarlatina of 99, and of diphtheria a decrease of 94, a total increase of 5.

Number of operations performed for laryngeal stenosis, 66; per cent. of recoveries, 35 per cent., as against 44 operations in 1890 and 36.36 of recoveries. Average age of cases operated on, 3 years, as against average age of cases operated on in 1890 of 3 years and 3 months. Of those who died after operation the immediate cause of death was: Asphyxia, 18; acute nephritis, 2; paralysis of the heart, 14; exhaustion, 7; and acute nephritis and paralysis of the heart, 2.

Total number of deaths from diphtheria, 85, or 25 per cent., of which 43, or 14 per cent., were intubated for laryngeal stenosis.

Respectfully submitted,
F. W. LESTER, Resident Physician.

RIVERSIDE HOSPITAL.

Table Showing Number of Patients Admitted each Month, 1891.

Disease.	Remaining Jan. 1, 1891.		Jan.		Feb.		March.		April.		May.		June.		July.		August.		Sept.		Oct.		Nov.		Dec.		Total Admitted.		Total Treated.		Remaining Dec. 31, 1891.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Small-pox	..	..	..	..	3	..	2	..	2	2	1	..	..	..	3	..	1	..	3	3	1	..	..	..	..	..	16	5	16	5	..	..
Chicken-pox	1	..	4	3	..	..	2	1	3	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	10	6	11	6	..	..
Leprosy	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	2	..	2	..	..	..
Typhus fever	..	..	..	..	..	..	..	..	2	1	1	..	1	..	1	2	..	..	..	..	..	..	..	..	..	..	5	3	5	3	..	..
Scarlet fever	6	..	6	11	8	7	13	3	22	43	22	27	17	23	4	3	1	2	1	1	3	2	18	9	7	11	122	142	128	142	7	10
Measles	5	5	25	19	28	22	19	20	37	35	26	34	37	25	46	30	6	19	10	13	10	12	20	18	19	22	284	269	289	274	7	7
Whooping-cough	2	5	..	1	..	..	2	3	2	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	6	5	8	10	..	..
Total by sexes	14	10	35	34	39	29	38	27	68	84	50	61	51	48	54	35	10	21	14	17	14	14	38	27	27	33	445	430	459	440	14	17
Total	24		69		68		65		152		111		105		89		31		31		28		65		60		875		899		31	

SMALL-POX.

Classes.	City.		Quarantine.		Public Hospitals.		Other Places.		White.		Colored.		Adults.		Minors.		Native.		Foreign.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Remaining Jan. 1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Admitted	3	2	13	3	..	..	..	..	16	5	..	..	14	4	2	1	3	..	13	5	21
Total treated	3	2	13	3	..	..	..	..	16	5	..	..	14	4	2	1	3	..	13	5	21
Died	..	..	1	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	1	..	1
Discharged	3	2	12	3	..	..	..	..	15	..	..	..	13	4	2	1	3	..	12	5	20
Remaining Dec. 31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Mortality, per cent., 4 16-21.

LEPROSY.

Remaining Jan. 1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Admitted	2	..	..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..	2	..	2
Total treated	2	..	..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..	2	..	2
Died	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Discharged	2	..	..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..	2	..	2
Remaining Dec. 31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

TYPHUS FEVER.

Remaining Jan. 1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Admitted	3	3	1	..	1	..	..	..	5	3	..	..	4	2	1	1	..	..	5	3	8
Total treated	3	3	1	..	1	..	..	..	5	3	..	..	4	2	1	1	..	..	5	3	8
Died	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Discharged	3	3	1	..	1	..	..	..	5	3	..	..	4	2	1	1	..	..	5	3	8
Remaining Dec. 31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

SCARLET FEVER.

Classes.	City.		Quarantine.		Public Hospitals.		Other Places.		White.		Colored.		Adults.		Minors.		Native.		Foreign.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Remaining Jan. 1	3	..	..	..	3	..	..	..	6	..	..	..	4	..	2	..	..	..	6	..	6
Admitted	59	82	9	3	52	56	2	1	121	137	1	5	60	67	62	75	73	82	49	60	264
Total treated	62	82	9	3	55	56	2	1	127	137	1	5	64	67	64	75	73	82	55	60	270
Died	11	11	3	2	18	10	..	..	32	23	..	..	7	1	25	22	24	19	8	4	55
Discharged	47	69	6	1	34	33	2	..	88	104	1	5	55	62	34	47	43	56	46	53	198
Remaining Dec. 31	4	2	..	..	3	7		1	7	10	..	..	2	4	5	6	6	7	1	3	17

Mortality, per cent., 20 10-27.

MEASLES.

Remaining Jan. 1	2	2	1	5	2	..	..	..	5	4	..	1	3	1	2	4	1	2	4	3	10
Admitted	67	98	124	102	91	69	2	..	282	265	2	4	65	64	219	205	119	116	165	153	553
Total treated	69	100	125	105	93	69	2	..	287	269	2	5	68	65	221	209	120	118	169	156	563
Died	13	11	13	12	19	11	..	..	45	34	..	..	3	1	42	33	29	19	16	15	79
Discharged	51	86	111	90	73	57	2	..	235	228	2	5	63	63	174	170	89	98	148	135	470
Remaining Dec. 31	5	3	1	3	1	1	..	..	7	7	..	..	2	1	5	6	2	1	5	6	14

Mortality, per cent., 14+.

WHOOPING-COUGH.

Remaining Jan. 1	..	5	..	..	2	..	..	..	2	5	..	..	..	..	2	5	2	5	..	..	7
Admitted	3	1	..	..	3	4	..	..	6	5	..	..	..	1	6	4	6	4	..	1	11
Total treated	3	6	..	..	5	4	..	..	8	10	..	..	..	1	8	9	8	9	..	1	18
Died	1	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	..	..	..	1
Discharged	2	6	..	..	5	4	..	..	7	10	..	..	..	1	7	9	7	9	..	1	17
Remaining Dec. 31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Mortality, per cent., 6—.

CHICKEN-POX.

CLASSES.	City.		Quarantine.		Public Hospitals.		Other Places.		White.		Colored.		Adults.		Minors.		Native.		Foreign.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Remaining Jan. 1....	..	..	..	..	1	..	..	..	1	..	..	..	..	..	1	..	1	..	.	..	1
Admitted.....	2	..	3	2	5	4	..	..	10	6	..	..	1	..	9	6	7	4	3	2	16
Total treated.	2	..	3	2	6	4	..	..	11	6	..	..	1	..	10	6	8	4	3	2	17
Died.....	1	..	..	1	2	..	..	..	3	1	..	..	1	..	2	1	3	..	..	1	4
Discharged.....	1	..	3	1	4	4	..	..	8	5	..	..	..	..	8	5	5	4	3	1	13
Remaining Dec. 31..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Mortality, per cent., 23 9-17.

TOTAL CASES.

Remaining Jan. 1...	5	7	1	3	8	..	..	..	14	9	..	1	7	1	7	9	4	7	10	3	24
Admitted.....	139	186	150	110	152	133	4	1	440	421	5	9	146	138	299	292	208	206	237	224	875
Total treated.	144	193	151	113	160	133	4	1	454	430	5	10	153	139	306	301	212	213	247	227	899

CLASSES.	City.		Quarantine.		Public Hospitals.		Other Places.		White.		Colored.		Adults.		Minors.		Native.		Foreign.		Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Died.....	26	22	17	15	39	21	..	..	82	58	..	..	12	2	70	56	57	38	25	20	140
Discharged.....	109	166	133	95	117	104	4	..	358	355	5	10	137	132	226	233	147	167	296	198	728
Remaining Dec. 31..	9	5	1	3	4	8	..	1	14	17	..	..	4	5	10	12	8	8	6	9	31

Mortality, per cent., 16.

MOTHERS AND CHILDREN ACCOMPANYING.

Remaining Jan. 1....	..	1	..	1	..	..	..	..	..	2	..	..	..	2	..	..	..	..	..	2	2
Admitted	4	25	5	103	..	6	..	..	9	139	..	..	4	137	5	2	..	8	9	131	148
Total.....	4	26	5	109	..	6	..	..	9	141	..	..	4	139	5	2	..	8	9	133	150
Discharged.....	4	25	5	108	..	5	..	..	9	138	..	..	4	136	5	2	..	7	9	131	147
Remaining Dec. 31..	..	1	..	1	..	1	..	..	..	3	..	..	..	3	..	..	..	1	..	2	3

Table Showing Cases Treated for the United States Immigration Service, 1891, Received from Barge Office, New York City.

DISEASES.	REMAINING DEC. 31, 1890.		JAN.		FEB.		MARCH.		APRIL.		MAY.		JUNE.		JULY.		AUGUST.		SEPT.		OCT.		NOV.		DEC.		TOTAL TREATED.		DIED.		REMAINING DEC. 31, 1891.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Measles.....	1	3	2	3	12	10	6	2	12	9	4	4	19	13	20	16	3	6	7	7	8	5	14	14	12	12	120	104	13	12	1	3
Scarlet fever.....	..	..	..	..	..	..	3	..	1	2	..	..	..	1	..	..	..	..	1	..	..	..	..	..	1	..	6	3	3	2	..	..
Chicken-pox	..	..	..	..	..	..	1	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	..	1	..	..
Mothers accompanying	..	1	..	2	..	10	..	5	..	14	..	4	..	21	..	18	..	4	..	3	..	4	..	8	..	10	..	104	..	..	..	1
Children accompanying.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	2	..	..	..	..
Total by sexes.....	1	4	2	5	12	20	10	7	14	27	4	8	19	35	20	35	3	10	8	10	8	9	14	22	13	23	128	215	16	15	1	4
Total	5		7		32		17		41		12		54		55		13		18		17		36		36		343		31		5	

Mortality, per cent., 13+.

Table Showing Number of Deaths from Various Causes, Year 1891.

DISEASES.	Total.	Scarlatina (malignant).	Rubeola (hæmorrhagic).	Diphtheria.	Bronchitis.	Broncho-pneumonia.	Pneumonia.	Enteritis.	Gastro-enteritis.	Croupous Laryngitis.	Croup.	Acarus Lumb.	Nephritis.	Cancrum Oris.	Peritonitis.	Laryngeal Diphtheria.	Cholera Infantum.	Pyæmia.	Heart Failure.	Marasmus.	Dentition.	Syphilis.	Otitis Media.	Tuberculosis.	Asthenia.	General Adenitis.	Meningitis, with Fracture of Base of Skull.	Cerebral Hæmorrhage.	Phthisis Pulmonalis.	Cellulitis.	Hæmorrhagic.	Malignant.
Small-pox.....	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scarlet fever.....	55	..	3	21	3	5	3	2	..	5	..	1	1	3	1	..	..	1	1	..	..	..	1	1	1	1	1	1	..	..	..	6
Measles	79	2	..	20	16	13	4	14	1	7	1	2	..	2	2	2	1	1	..	4	2	1	..	..	..	..	..	..	1	1	3	..
Whooping-cough.....	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chicken-pox	4	..	..	2	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..
Total.....	140	2	3	43	22	18	8	17	1	12	1	3	1	5	3	2	1	2	1	4	3	2	1	1	1	1	1	1	1	3	6

Table Showing Complications of Total Cases Treated.

NOTE.—In two cases of leprosy and two cases of typhus fever treated no complications occurred.

DISEASES.	TOTAL CASES TREATED.	SCARLATINA.		RUBEOLA.		WHOOPING-COUGH.		CHICKEN-POX.		DIPHTHERIA.		BRONCHITIS.		BRONCHO-PNEUMONIA.		PNEUMONIA.		ENTERITIS.		GASTRO-ENTERITIS.		CROUPOUS LARYNGITIS.		CROUP.		ACARUS LUMB.		NEPHRITIS.		CANCRUM ORIS.		PERITONITIS.	
		Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.
Small-pox	21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scarlet fever.....	270	..	..	85	3	1	..	2	..	2	21	..	3	..	5	1	3	..	2	..	..	..	5	..	..	..	1	14	1	..	3	..	1
Measles.....	563	23	2	..	..	1	..	1	..	9	20	20	16	3	13	..	4	5	14	..	1	5	7	3	1	..	2	4	..	5	2	..	2
Whooping-cough.....	18	1	..	1	..	..	..	..	..	3	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chicken-pox.....	17	1	..	1	..	..	..	..	..	..	2	..	2	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	899	25	2	87	3	2	..	3	..	14	43	20	22	3	18	1	8	5	17	..	1	5	12	3	1	..	3	18	1	5	5	..	3

DISEASES.	LARYNGEAL DIPHTHERIA.		CHOLERA INFANTUM.		PYÆMIA.		HEART FAILURE.		MARASMUS.		DENTITION.		SYPHILIS.		OTITIS.		OTITIS MEDIA.		TUBERCULOSIS.		ASTHENIA.		GENERAL ADENITIS		MENINGITIS WITH FRACTURE OF BASE OF SKULL.		CEREBRAL HÆMORRHAGE.		PHTHISIS PULMONALIS.		CELLULITIS.		RHEUMATISM.	
	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.
Small-pox.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scarlet fever.....	..	..	..	..	..	1	..	1	..	..	..	..	..	1	2	..	..	1	1	1	..	1	..	1	..	1	..	..	..	..	5	..
Measles.....	..	2	..	1	..	1	..	..	2	4	2	2	..	1	10	..	..	..	2	..	..	..	..	..	..	..	..	..	..	1	..	..
Whooping-cough.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chicken-pox.....	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total.....	..	2	..	1	..	2	..	1	2	4	2	3	..	2	12	..	..	1	3	1	..	1	..	1	..	1	..	1	..	1	5	..

Diseases.	Miscarriage.		Scrofula.		Eczema.		Opthalmia.		Potts' Disease.		Tonsilitis.		Favus.		Malaria.		Talipes Equinus.		Mastoid Disease.		Stomatitis.		Tubercular Synovitis.		Hæmatophilia.		Rötheln.		Acne.		Hæmorrhagic.		Malignant.	
	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.	Recovered.	Died.
Small-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scarlet fever	1	..	1	..	1	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..	6
Measles	..	..	1	..	2	..	1	..	1	..	1	..	2	..	1	..	..	..	1	..	..	..	..	..	..	..	18	..	1	..	1	3	..	..
Whooping-cough	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chicken-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	1	..	2	..	3	..	2	..	1	..	2	..	2	..	1	..	1	..	1	..	1	..	1	..	1	..	18	..	1	..	1	3	..	6

Table Showing Ratio of Mortality at Various Ages During Year 1891.

	Sexes.	Ages. Under 1 Year.							1 to 3 Years.						
		Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	Mortality.	Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	Mortality.
Small-pox	Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Leprosy	Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Typhus fever	Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scarlet fever	Males	..	1	1	1	..	..	..	..	13	13	6	7	..	54
	Females	..	1	1	1	..	..	..	..	17	17	5	8	4	47—
Measles	Males	..	18	18	10	6	2	33+	..	77	77	60	17	..	21+
	Females	..	21	21	14	7	..	33+	..	77	77	54	19	4	26—
Whooping-cough	Males	..	1	1	1	..	..	..	1	1	2	1	1	..	50
	Females	..	..	..	..	..	..	..	2	..	2	2	..	..	..
Chicken-pox	Males	..	..	..	..	..	..	..	..	4	4	4	..	..	..
	Females	..	1	1	1	..	..	..	..	4	4	3	1	..	25
By sexes	Males	..	20	20	12	6	2	30	1	95	96	71	25	..	26+
	Females	..	23	23	16	7	..	30+	2	98	100	64	28	8	28
Total		..	43	43	28	13	2	30+	3	193	196	135	53	8	27+

	Sexes.	Ages. 3 to 5 Years.							5 to 10 Years.						
		Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	Mortality.	Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	Mortality.
Small-pox	Males	..	1	1	1	..	..	..	..	..	..	..	..	..	..
	Females	..	..	..	..	..	..	..	..	1	1	1	..	..	..
Leprosy	Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Typhus fever	Males	..	..	..	..	..	..	..	..	1	1	1	..	..	..
	Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scarlet fever	Males	1	30	31	16	12	3	39—	1	17	18	10	6	2	33⅓
	Females	..	30	30	17	11	2	37—	..	18	18	15	3	..	17—
Measles	Males	1	26+	27	17	9	2	33⅓	2	54	56	50	4	2	7+
	Females	2	54	56	51	5	..	9—	2	48	50	46	2	2	4
Whooping-cough	Males	..	1	1	1	..	..	..	..	4	4	4	..	..	..
	Females	2	4	4	4	..	..	..	1	2	3	3	..	..	..
Chicken-pox	Males	..	3	3	1	2	..	66⅔	1	2	3	3	..	..	..
	Females	..	1	1	1	..	..	..	..	..	..	..	..	..	..
By sexes	Males	2	91	93	60	29	4	31+	4	78	82	68	10	4	12+
	Females	4	87	91	73	16	2	18—	3	69	72	65	5	2	7—
Total		6	178	184	133	45	6	24+	7	147	154	133	15	6	10—

	Sexes.	Ages. 10 to 15 Years.							15 to 25 Years.						
		Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	Mortality.	Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	Mortality.
Small-pox	Males	..	2	2	2	..	..	..	..	5	5	5	..	..	..
	Females	..	..	..	..	..	..	..	..	1	1	1	..	..	..
Leprosy	Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Typhus fever	Males	..	..	..	..	..	..	..	..	2	2	2	..	..	..
	Females	..	1	1	1	..	..	..	..	1	1	1	..	..	..
Scarlet fever	Males	..	2	2	1	1	..	50	3	40	43	36	5	2	12—
	Females	..	13	13	12	1	..	8—	..	43	43	40	..	3	..
Measles	Males	..	15	15	15	..	..	..	3	48	51	47	2	2	4—
	Females	..	9	9	9	..	..	..	1	45	46	44	1	1	2+
Whooping-cough	Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chicken-pox	Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..
By sexes	Males	..	19	19	18	1	..	5+	6	95	101	90	7	4	7—
	Females	..	23	23	22	1	..	4+	1	90	91	86	1	4	1+
Total		..	42	42	40	2	..	5—	7	185	192	176	8	8	4+

	Sexes.	Ages. 25 to 40 Years.							40 Years and Over.						
		Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	Mortality.	Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	Mortality.
Small-pox	Males	..	5	5	4	1	..	20	..	3	3	3	..	..	..
	Females	..	1	1	1	..	..	..	..	2	2	2	..	..	..
Leprosy	Males	..	2	2	2	..	..	..	..	..	..	..	..	..	..
	Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Typhus fever	Males	..	2	2	2	..	..	..	..	..	..	..	..	..	..
	Females	..	..	..	..	..	..	..	..	1	1	1	..	..	..
Scarlet fever	Males	1	17	18	17	1	..	6	..	2	2	2	..	..	..
	Females	..	18	18	17	..	1	..	..	2	2	2	..	..	..
Measles	Males	1	14	14	13	1	..	7+	..	1	1	1	..	..	..
	Females	..	13	13	13	..	..	..	..	2	2	2	..	..	..
Whooping-cough	Males	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Females	..	1	1	1	..	..	..	..	..	..	..	..	..	..
Chicken-pox	Males	..	1	1	..	1	..	100	..	..	..	..	..	..	..
	Females	..	..	..	..	..	..	..	..	..	..	..	..	..	..
By sexes	Males	2	41	42	38	4	..	10—	..	6	6	6	..	..	..
	Females	2	33	33	32	..	1	..	..	7	7	7	..	..	..
Total		4	74	75	70	4	1	5+	..	13	13	13	..	..	..

	Sexes.	Total.						
		Remaining.	Admitted.	Total.	Discharged.	Died.	Remaining.	Mortality.
Small-pox	Males	..	16	16	15	1	..	6⅔
	Females	..	5	5	5	..	..	..
Leprosy	Males	..	2	2	2	..	..	..
	Females	..	..	..	..	..	..	..
Typhus fever	Males	..	5	5	5	..	..	..
	Females	..	3	3	3	..	..	..
Scarlet fever	Males	6	122	128	89	32	7	25
	Females	..	142	142	109	23	10	16+
Measles	Males	5	284	289	237	45	7	16—
	Females	5	269	274	233	34	7	12+
Whooping-cough	Males	2	6	8	7	1	..	12½
	Females	5	5	10	10	..	..	..
Chicken-pox	Males	1	10	11	8	3	..	27 3/11
	Females	6	6	6	5	1	..	16⅔
By sexes	Males	14	445	459	363	82	14	18+
	Females	10	430	440	365	58	17	13+
Total		24	875	899	728	140	31	16—

Recapitulation.

Diseases.	Remaining January 1.		Admitted.		Total Treated.		Died.		Discharged.		Remaining December 31.		Mortality, Per Cent.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Small-pox	..	..	16	5	16	5	1	..	15	5	..	..	.05—
Chicken-pox	1	..	10	6	11	6	3	1	8	5	..	..	.24—
Leprosy	..	..	2	..	2	..	..	..	2	..	..	..	....
Typhus fever	..	..	5	3	5	3	..	..	5	3	..	..	....
Scarlet fever	6	..	122	142	128	142	32	23	89	109	7	10	.20+

Diseases.	Remaining January 1.		Admitted.		Total Treated.		Died.		Discharged.		Remaining December 31.		Mortality, Per Cent.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Measles	5	5	284	269	289	274	45	34	237	233	7	7	.14+
Whooping-cough	2	5	6	5	8	10	1	..	7	10	..	..	.06—
By Sexes	14	10	445	430	459	440	82	58	363	365	14	17	.18— .13+
Total	24		875		899		140		728		31		.16—

Average daily census for the year—	
Patients	50.56
Help	42.11
Total	92.67
Number of trips steamer "Franklin Edson"	436
Total number of dead bodies received during year	42

As compared with last year, we find a large increase in the census. In 1890, 494 cases were treated, while the number in 1891 is 899, an increase of 405, which has been largely among the measles cases. Just about one-half of the cases of measles treated were received from the U. S. Immigration Service. These patients had accompanying them mothers and children to the number of 106.

Among the scarlet fever patients treated about 15 per cent. have been children, the overflow from the children's wards at the Willard Parker Hospital. Of 113 cases of scarlet fever and measles combined that were treated, 70 were admitted with that diagnosis, 10 as measles, 20 as scarlet fever exposed to measles, and 13 as measles exposed to scarlet fever. The complications accompanying these cases were remarkably numerous and severe. The mortality table shows a marked decrease of the ratio of death in all cases treated, as the age of the patient increases. The largest number of patients treated under any one class as tabulated was 196 at ages from one to three years, the mortality was 27 per cent. The next largest class was in age fifteen to twenty-five years, having 192 cases with a mortality of only 4 per cent.

Looking for the actual causes of death, we find that diphtheria infection in its various forms heads the list as a complication, closely followed by diseases of the respiratory organs, bronchitis, bronchopneumonia or pneumonia, while inflammations of the digestive tract are third. Fifty different complications have been noted in the treatment of the cases, several of them occurring many times, others only once. These fifty complications have occurred among about one-half of the total number of cases treated, leaving the disease to run its normal course in the other half.

The total cases treated are divided as follows: Small-pox, 21; scarlet fever, 270; measles, 563; whooping-cough, 18; chicken-pox, 17; total, 899. Mothers and children accompanying, 150. Grand total of 1,049 cases.

Respectfully submitted,
F. R. PERCIVAL, M. D., Resident Physician.

EMMONS CLARK, *Secretary:*

SIR—I have the honor to submit the following report relating to the tenement-house population of the city.

A preliminary statement is necessary, to indicate the material and the methods used in the preparation of the accompanying tables.

THE TENEMENT-HOUSE CENSUS.

With the beginning of the year 1891, the Sanitary Police began the semi-annual inspection of tenement-houses required by the tenement-house act. As they visited each house, they made memoranda, in books provided for the purpose, of the number of persons living in the house, enumerating separately those who were five years of age and upwards and those who were under five, the number of families, the number of vacant apartments, and if any tenants were engaged in any regular occupation at home (so-called home-workers), the character of the occupation, the number of persons in such family, and the number of cases of sickness.

This census included every dwelling-house in the City of New York, occupied by more than two families living independently of each other, with the exception of certain first-class apartment-houses, which were noted separately. The large number of persons living in private houses, hotels, boarding-houses, lodging-houses and public institutions were, of course, not included.

The general result of this census was as follows:

Total number of tenement-houses	37,358
Total number of vacant apartments	32,166
Total number of families	276,565
Total population	1,225,421
Total population, 5 years of age and over	1,064,713
Total population, under 5 years of age	160,708

In addition to the houses included in the foregoing table, were found:

First-class apartment-houses	149
Total number of vacant apartments	537
Number of families living in them	2,474
Total population	9,793
Total population, 5 years of age and over	9,292
Total population, under 5 years of age	501

These houses are not included among those considered in this report.

As the particulars regarding each house were reported by street and number, and the deaths occurring in the city are also kept by street and number, it required only time and patience to prepare tables combining the population and the corresponding deaths, so as to show the comparative mortality in different parts of the city.

As the officers began their work in January and did not finish until September, it might, without explanation, be inferred that the census was practically worthless, as extending over a period of eight months and no attempt being made to ascertain the population at any given date. And this opinion is, to a certain extent, true if the census is looked upon merely as a census of the tenement-house population. The total population of all the tenement-houses in the city must have increased a good deal during the progress of this work, and if the annual increase of population in the city as a whole is taken at fifty thousand, and three-quarters of this is given to the tenement-houses, the figures given may be fifteen thousand or twenty thousand out of the way, probably too small. But the value of the following tables does not depend upon the enumeration of the entire tenement-house population accurately at any fixed date; it depends upon the fact that for the population given in the tables, the comparison of deaths with population has been made house by house, and it is a matter of experience with the Department that the population of any particular house does not vary very much within a few months, unless very exceptional circumstances arise. As one family moves out, another moves in, and even the moving takes place largely within a restricted neighborhood, to which tenants become attached and which they are often disinclined to leave. So the increase of the tenement-house population comes about rather by the overflow into new houses than by overcrowding of the old.

Therefore, although the census, as it stands, probably gives the entire tenement-house population on September 1, within a few thousands, I prefer to consider the following tables, not as showing the actual death-rates among the tenement-house population, but the death-rates in 37,538 particular houses, sheltering 1,225,421 persons.

DISTRICTS.

In order to ascertain local sanitary conditions it was necessary to divide the city into districts, and as this had already been done in connection with the United States census of 1890, it was decided to adopt the subdivisions of the wards made at that time.

These small districts, one hundred and eleven in number, were located with a view to have each one, so far as possible, represent some peculiar condition which might affect its healthfulness, e. g., some districts include slaughter-houses, others gas-houses, others large areas of former marshy land or land reclaimed from the rivers, some a large negro population, or German, or Italian, or Russian Jewish, some a wholly tenement-house population, others largely private houses, and others chiefly business property.

The following table gives the boundaries of the wards and the districts, the latter being indicated by capital letters, and the leading characteristic of each district being briefly stated:

WARD.	DISTRICT.	BOUNDARIES.	PREDOMINATING CHARACTERISTIC.
First	....	South of Liberty street and Maiden Lane:	
	A	West of Broadway and State street	Made land.
	B	East of Broadway and State street	"
Second	....	Between Liberty street and Maiden Lane on the south, and Spruce street, Ferry street and Peck Slip on the north, east of Broadway and Park Row	Business; made land.
Third	....	Between Liberty and Reade streets, west of Broadway	Business.
Fourth	....	Between Spruce street, Ferry street and Peck Slip on the southwest, and Catharine street on the northeast, southerly of Park Row:	
	A	South of New Chambers street and James Slip	Made land.
	B	North of New Chambers street and James Slip	Marsh land; Italians.
Fifth	....	Reade to Canal street, west of Broadway:	
	A	West of Hudson street	Marsh land.
	B	East of Hudson street	"
Sixth	....	Below Canal street, between Bowery, Park Row and Broadway:	
	A	West of Centre street	Business.
	B	Between Centre and Baxter streets	Made land; Italians, Jews.
	C	East of Baxter street	Italians, Chinese.
Seventh	....	Between Catharine and Grand streets, Division street and East river:	
	A	Between Catharine and Jefferson streets, south of Monroe street	Marsh land.
	B	Between Jefferson and Grand streets, south of Monroe street	"
	C	Between Catharine and Jefferson streets, north of Monroe street	Jews.
	D	Between Jefferson and Grand streets, north of Monroe street	"
Eighth	....	Between Canal and Houston streets, west of Broadway:	
	A	West of Varick street	Marsh land.
	B	East of Varick street, south of Spring street	Marsh land; Italians, negroes.
	C	East of Varick street, north of Spring street	French, Italians.
Ninth	....	Between Houston and Fourteenth streets, west of Sixth avenue, Carmine street, Bleecker street, Cottage place:	
	A	West of Hudson street, below West Eleventh street	
	B	East of Hudson street, below Charles street and Greenwich avenue	
	C	West of Hudson street, above West Eleventh street	Made land.
	D	East of Hudson street, above Charles street and Greenwich avenue	
Tenth	....	Between Division and Rivington streets, Norfolk street and Bowery:	
	A	South of Grand street	Russian Jews.
	B	North of Grand street	Russian Jews and Germans.
Eleventh	....	Between Rivington and Fourteenth streets, east of Avenue B and Clinton street:	
	A	Between Avenues B and D, south of Second street	Germans, Bohemians.
	B	Between Avenues B and D, Second and Eighth streets	Marsh land.
	C	Between Rivington and Eighth streets, east of Avenue D.	"
	D	Between Eighth and Fourteenth streets, east of Avenue B.	Marsh land; gas-houses.
Twelfth	....	Manhattan Island, north of Eighty-sixth street:	
	A	West Eighty-sixth to Ninety-fourth street	
	B	Between Eighty-sixth and Ninety-fifth streets, Fifth and Third avenues	
	C	Between Eighty-sixth and Ninety-fifth streets, Third and First avenues	Marsh land.
	D	Between Eighty-sixth and Ninety-fifth streets, east of First avenue	"
	E	Between West Ninety-fourth and One Hundred and Second streets	
	F	Between Ninety-fifth and One Hundred and Fifth streets, Fifth and Third avenues	
	G	Between Ninety-fifth and One Hundred and Fifth streets, east of Third avenue	Marsh land; gas-houses.
	H	Between West One Hundred and Second and One Hundred and Tenth streets	
	I	Between East One Hundred and Fifth and One Hundred and Tenth streets	Marsh land.
	K	Between One Hundred and Tenth and One Hundred and Twentieth streets, west of Seventh avenue	Suburban.
	L	Between One Hundred and Tenth and One Hundred and Twentieth streets, Seventh and Fourth avenues	
	M	Between One Hundred and Tenth and One Hundred and Twentieth streets, east of Fourth avenue	Gas-houses; Italians.
	N	Between One Hundred and Twentieth and One Hundred and Thirtieth streets, west of Fifth avenue	Suburban.
	O	Between One Hundred and Twentieth and One Hundred and Thirtieth streets, east of Fifth avenue	
	P	Between One Hundred and Thirtieth and One Hundred and Fortieth streets, west of Eighth avenue	Suburban.
	R	Between One Hundred and Thirtieth and One Hundred and Fortieth streets, east of Eighth avenue	
	S	North of One Hundred and Fortieth street	Suburban.
Thirteenth	....	Between Division, Grand and Rivington streets, east of Norfolk street:	
	A	West of Willett street	
	B	East of Willett street	
Fourteenth	....	Between Canal and Houston streets, Broadway and Bowery:	
	A	West of Mulberry street	Italians.
	B	East of Mulberry street	"
Fifteenth	....	Houston to Fourteenth street, between Fourth avenue and the Bowery on the east, and Sixth avenue, Carmine and Bleecker streets, and Cottage place on the west:	
	A	West of Wooster street, south of Fourth street	Italians, French, negroes.
	B	East of Wooster street, south of Fourth street	French.
	C	West of University place, north of Fourth street	
	D	East of University place, north of Fourth street	Business.
Sixteenth	....	Between Fourteenth and Twenty-sixth streets, west of Sixth avenue:	
	A	Between Fourteenth and Twentieth streets, west of Ninth avenue	Made land; gas-houses.
	B	Between Fourteenth and Twentieth streets, east of Ninth avenue	
	C	Between Twentieth and Twenty-sixth streets, west of Ninth avenue	Made land.
	D	Between Twentieth and Twenty-sixth streets, east of Ninth avenue	
Seventeenth	....	Between Rivington and Fourteenth streets, Fourth avenue and Bowery, and Avenue B and Clinton street:	
	A	Between Rivington and Fourth streets, west of First avenue	Germans.
	B	Between Rivington and Fourth streets, east of First avenue	"
	C	Between Fourth and Ninth streets, west of First avenue	"
	D	Between Fourth and Ninth streets, east of First avenue	"
	E	Between Ninth and Fourteenth streets, west of First avenue	
	F	Between Ninth and Fourteenth streets, east of First avenue	Germans.
Eighteenth	....	Fourteenth to Twenty-sixth streets, east of Sixth avenue:	
	A	Between Fourteenth and Twentieth streets, Sixth and Fourth avenues	
	B	Between Fourteenth and Twentieth streets, Fourth and First avenues	
	C	Between Fourteenth and Twenty-sixth streets, east of First avenue	Made land; gas-houses.
	D	Between Twentieth and Twenty-sixth streets, Sixth and Fourth avenues	
	E	Between Twentieth and Twenty-sixth streets, Fourth and First avenues	

WARD.	DISTRICT.	BOUNDARIES.	PREDOMINATING CHARACTERISTIC.
Nineteenth.....	....	Between Fortieth and Eighty-sixth streets, east of Sixth avenue:	
	A	Between Fortieth and Fiftieth streets, Sixth and Fourth avenues.....	Fine residences.
	B	Between Fortieth and Fiftieth streets, Fourth and Second avenues.....	
	C	Between Fortieth and Fiftieth streets, east of Second avenue.....	Slaughter-houses.
	D	Between Fiftieth and Fifty-ninth streets, Sixth and Fourth avenues.....	Fine residences.
	E	Between Fiftieth and Fifty-ninth streets, Fourth and Second avenues.....	
	F	Between Fiftieth and Fifty-ninth streets, east of Second avenue.....	
	G	Between Fifty-ninth and Seventieth streets, Fifth and Third avenues.....	Fine residences.
	H	Between Fifty-ninth and Seventieth streets, Third and First avenues.....	
	I	Between Fifty-ninth and Seventieth streets, east of First avenue.....	
	K	Between Seventieth and Seventy-sixth streets, Fifth and Third avenues.....	Fine residences.
	L	Between Seventieth and Seventy-sixth streets, Third and First avenues.....	
	M	Between Seventieth and Seventy-sixth streets, east of First avenue.....	
	N	Between Seventy-sixth and Eighty-sixth streets, Fifth and Third avenues.....	Fine residences.
	O	Between Seventy-sixth and Eighty-sixth streets, Third and First avenues.....	
	P	Between Seventy-sixth and Eighty-sixth streets, east of First avenue.....	
Twentieth.....	....	Between Twenty-sixth and Fortieth streets, west of Sixth avenue:	
	A	Between Twenty-sixth and Thirty-first streets, west of Ninth avenue.....	
	B	Between Twenty-sixth and Thirty-first streets, east of Ninth avenue.....	
	C	Between Thirty-first and Thirty-sixth streets, west of Ninth avenue.....	
	D	Between Thirty-first and Thirty-sixth streets, east of Ninth avenue.....	
	E	Between Thirty-sixth and Fortieth streets, west of Ninth avenue.....	Slaughter-houses.
	F	Between Thirty-sixth and Fortith streets, east of Ninth avenue.....	
Twenty-first....	....	Between Twenty-sixth and Fortieth streets, east of Sixth avenue:	
	A	Between Twenty-sixth and Thirty-first streets, Sixth and Fourth avenues.....	Fine residences.
	B	Between Twenty-sixth and Thirty-first streets, Fourth and Second avenues.....	
	C	Between Twenty-sixth and Thirty-third streets, east of Second avenue.....	
	D	Between Thirty-first and Thirty-sixth streets, Sixth and Fourth avenues.....	Fine residences.
	E	Between Thirty-first and Thirty-sixth streets, Fourth and Second avenues.....	
	F	Between Thirty-sixth and Fortieth streets, Sixth and Fourth avenues.....	
	G	Between Thirty-sixth and Fortieth streets, Fourth and Second avenues.....	
	H	Between Thirty-third and Fortieth streets, east of Second avenue.....	Made land.
Twenty-second .	....	Between Fortieth and Eighty-sixth streets, west of Sixth avenue:	
	A	Between Fortieth and Fiftieth streets, west of Tenth avenue.....	Gas-houses; slaughter-houses.
	B	Between Fortieth and Fiftieth streets, Tenth and Eighth avenues.....	
	C	Between Fortieth and Fiftieth streets, Eighth and Sixth avenues.....	
	D	Between Fiftieth and Fifty-seventh streets, west of Tenth avenue.....	
	E	Between Fiftieth and Fifty-ninth streets, Tenth and Eighth avenues.....	
	F	Between Fiftieth and Fifty-ninth streets, Eighth and Sixth avenues.....	
	G	Between Fifty-seventh and Sixty-fourth streets, west of Tenth avenue.....	Slaughter-houses.
	H	Between Sixty-fourth and Seventy-fourth streets, west of Tenth avenue.....	
	I	Between Fifty-ninth and Sixty-eighth streets, Tenth and Eighth avenues.....	
	K	Between Sixty-eighth and Seventy-seventh streets, Tenth and Eighth avenues.....	
	L	Between Seventy-fourth and Eighty-sixth streets, west of Tenth avenue.....	
	M	Between Seventy-seventh and Eighty-sixth streets, Tenth and Eighth avenues.....	
Twenty-third....	....	North of Harlem river, below One Hundred and Fifty-fifth street.....	Suburban.
Twenty-fourth..	....	North of Harlem river, above One Hundred and Fifty-fifth street.....	Suburban.

The Twenty-third and Twenty-fourth Wards are really divided by a straight line from High Bridge to the Bronx river, at about One Hundred and Seventieth street, but as the police districts were divided at One Hundred and Fifty-fifth street, that division has been retained for these tables, although what are given as Wards 23 and 24 in the list just completed do not correspond exactly with Wards 23 and 24 on the map of the city.

It will, of course, be understood that the actual boundaries of districts are along the centre of the streets given above as the dividing lines.

As the police inspection was made by only thirty-three officers, the city was divided for that inspection into only thirty-three districts, and the time required for the redistribution of the population and the deaths according to the boundaries of the sanitary districts, as given above, accounts for the somewhat tardy appearance of this report.

RESULTS OF THE TABULATION.

In the houses under consideration there were in 1891, 29,123 deaths, giving a death-rate per 1,000 living of 23.77. The number of deaths in tenement-houses given in the annual report is 28,215, but this total represents the deaths that actually occurred in the houses, while the former number represents the deaths that occurred in the houses plus deaths redistributed to the houses which actually occured in hospitals and other public institutions. The 28,215 deaths also include many deaths in the large apartment-houses, which are expressly excluded from consideration in this report. Out of the total of 9,377 deaths in institutions, there were 3,426 that could not be referred to the residence before admission, no street address being given on the certificate of death. A large proportion of these, like the deaths in the foundling and maternity asylums, are deaths of persons who were born in the institutions, and therefore had no other address. If, however, we assume that the entire number of undistributed deaths belong to the tenement-houses, we should have a total of 32,549, which would give us a tenement death-rate of 26.56. An exhaustive analysis of the tables would require more time and space than are now available, but the following points of interest lie upon the surface.

1. The highest death-rates are in districts largely inhabited by Italians, and this is true not only of the children but of the adults (Table I.).

2. The lowest death-rate of the thickly populated districts, and one of the lowest in the city, there being but seventeen lower, and those mostly in surburban districts, is in the lower part of the Tenth Ward, the poor Jewish district. The comparatively low death-rate of this district has been noticed for many years, and is probably due to the frugality and temperate habits of these Jews, as well as to the native vigor of the race (Table I.).

3. The highest ward death-rate was in the Fourteenth and the next highest in the Fourth, both Italian wards, while the lowest rate was in the Third, where the tenements are scattered and the population is small, the next lowest being in the Twenty-fourth, a suburban ward (Table II.).

4. The highest death-rate from diarrhœal diseases was in the Fifth Ward, from diphtheria and croup in the Twenty-third Ward, from malarial fevers in the Fourteenth Ward, from phthisis in the Fifth Ward, from pneumonia in the First Ward, and from typhoid fever in the Twenty-first Ward (see Tables V. and VI.).

5. As regards density of population, the death-rate is highest in the class of houses occupied by less than twenty tenants and lowest in those occupied by one hundred and upwards, as appeared also in a similar report in 1889. This may perhaps be accounted for by assuming that the sick are more likely to be removed to the hospital from the larger houses than from the smaller ones, and that from the occupants of the latter the residence before admission is more likely to be correctly obtained, as they are presumably more intelligent and better conversant with the English language. The death-rates from bronchitis, diarrhœal diseases, diphtheria and croup, measles, pneumonia and scarlet fever increase as the number of tenants increases, while Bright's disease, heart diseases, influenza, malarial fevers, phthisis and typhoid fever show a tendency to decrease in the larger houses. These, it is worthy of notice, are most of them diseases which are likely to be removed to a hospital, because they run a more protracted course and constitute a greater drain upon the resources of the family (see Tables VIII. and IX.).

6. The results obtained by comparing certain special localities described in the tables are complicated somewhat by the fact that the same district may be included under two different headings, e. g., Eighteenth Ward, District C, comprises a large amount of made land and contains two gas-works. Without any attempt to eliminate the effects of such complications, attention may be called to the following points:

(a) The death-rate is much higher in districts bordering on the North river than along the East river, and this is true not only of the general rate but of the rates from particular diseases, the only ones showing a higher death-rate along the East river being malarial fevers, tuberculous diseases other than phthisis, and scarlet fever (see Tables X. and XII.).

(b) With regard to localities selected on account of the existence of conditions assumed to be unhealthy, the highest general death-rate and the highest rate among persons five years of age and over, were in the districts consisting largely of made land, while the highest rate among children under five years of age was in districts containing slaughter-houses. The lowest general death-rate and the lowest for persons five years of age and over, were in districts containing gas-houses, and the lowest for children under five was in districts comprising much land formerly marshy (see Tables X. and XII.).

(c) As regards particular diseases, the following table will show the relations of the localities in question to each other, No. 1 indicating the highest death-rate and No. 4 the lowest from each disease:

CAUSE OF DEATH.	RELATIVE MORTALITY FROM EACH DISEASE			
	Marsh-land Districts.	Made-land Districts.	Slaughter-house Districts.	Gas-house Districts.
Bright's disease	3	1	2	4
Bronchitis	2	1	4	3
Diarrhœal diseases	2	4	3	1
Diphtheria and croup	2	3	1	4
Heart disease	3	1	2	3
Influenza	4	3	1	2
Malarial fevers	3	2	4	1
Measles	4	1	3	2
Phthisis	3	1	2	4
Other tuberculous diseases	3	1	3	2
Pneumonia	1	2	3	4
Scarlet fever	1	4	2	3
Typhoid fever	4	1	2	3

(See Table XII.)

Home-workers.

In the tables relating to home-workers, the numbers involved, when a proper division is made, are not large enough to justify the drawing of any conclusions with certainty. Home-workers were counted wherever they were found, and in by far the larger number of instances, there were only one or two families so employed out of a large houseful. Probably most of these occupied small stores, cigar shops or tailor shops, and lived in the rear room. All such cases being grouped together under the heading "partly occupied" by tailors, etc., there are left only 2,495 tenants living in houses occupied solely by tailors, and only 1,817 in houses occupied solely by cigar-makers. Only 926 houses are included in these tables altogether.

With these precautionary remarks, the following points may be noted in the tables:

1. The highest death-rate was among the cigar-makers, and the lowest in houses partly occupied by dressmakers (see Table XIII.).

2. The death-rate from phthisis was highest in houses entirely occupied by cigar-makers, and lowest in those entirely occupied by tailors. On the other hand, the death-rates from diphtheria and croup and measles were highest in houses entirely occupied by tailors (see Table XIV.).

With regard to these death-rates, it should be remarked that nationality and race may have something to do with causing the marked difference, the cigar-makers being mostly Bohemians, and the tailors mostly Jews, whose death-rate under all circumstances is comparatively low.

Respectfully submitted,

ROGER S. TRACY, M. D., Register of Records.

MARCH 1, 1892.

TABLE I.—*Population, Deaths and Death-rates by District and Age.*

WARD.	District.	POPULATION.			DEATHS.			DEATH-RATE.		
		Total.	5 Years and Over.	Under 5 Years.	Total.	5 Years and Over.	Under 5 Years.	General.	5 Years and Over.	Under 5 Years.
First	A	7,504	6,811	693	273	159	114	36.38	23.35	164.52
	B	663	589	74	13	7	6	19.61	11.88	81.08
Second	..	144	127	17	...	...	...	.....	.....	.....
Third	..	1,357	1,244	113	23	17	6	16.95	13.66	53.10
Fourth	A	5,232	4,733	499	212	124	83	40.52	26.21	176.35
	B	10,092	8,689	1,403	352	185	167	34.88	21.29	119.02
Fifth	A	4,997	4,351	646	139	87	52	27.82	20.00	80.45
	B	3,171	2,692	479	119	60	59	37.52	22.29	123.20
Sixth	A	1,208	1,130	78	23	15	8	19.04	13.27	102.57
	B	6,008	5,441	567	154	75	79	25.63	13.78	139.32
	C	15,925	14,168	1,757	445	216	229	27.94	15.24	130.33
Seventh	A	9,569	7,666	1,903	267	162	105	27.90	21.13	55.18
	B	9,678	8,392	1,286	350	171	179	36.17	20.37	139.18
	C	27,175	21,130	6,045	536	274	262	19.72	12.97	43.35
	D	11,898	10,187	1,711	300	148	152	25.21	14.53	88.84
Eighth	A	7,064	6,069	995	201	128	73	28.45	21.09	73.37
	B	7,444	6,383	1,061	246	116	130	33.05	18.17	122.52
	C	8,020	6,872	1,148	239	121	118	29.80	17.61	102.79
Ninth	A	7,274	6,277	997	205	136	69	28.18	21.66	69.20
	B	16,975	15,072	1,903	422	247	175	24.86	16.39	91.96
	C	7,604	6,611	993	167	95	72	21.96	14.37	72.50
	D	8,165	7,147	1,018	140	88	52	17.15	12.31	51.08
Tenth	A	35,190	29,515	5,675	571	224	347	16.23	7.59	61.15
	B	26,324	22,062	4,262	581	251	330	22.07	11.38	77.44
Eleventh	A	23,845	19,439	4,406	561	228	333	23.53	11.73	75.58
	B	18,801	16,323	2,478	381	178	203	20.26	10.90	81.92
	C	10,406	8,928	1,478	288	132	156	27.67	14.78	105.54
	D	17,928	15,331	2,597	510	261	249	28.45	17.02	95.88

Ward.	District.	Population. Total.	Population. 5 Years and Over.	Population. Under 5 Years.	Deaths. Total.	Deaths. 5 Years and Over.	Deaths. Under 5 Years.	Death-rate. General.	Death-rate. 5 Years and Over.	Death-rate. Under 5 Years.
	A	3,882	3,418	464	56	36	20	14.43	10.53	43.10
	B	10,205	8,950	1,255	203	137	66	19.89	15.31	52.78
	C	15,436	13,185	2,251	316	146	170	20.47	11.07	75.54
	D	4,910	4,257	653	84	48	36	17.10	11.28	55.13
	E	10,518	9,190	1,328	178	108	70	16.92	11.75	52.71
	F	8,394	7,401	993	173	93	80	20.61	12.57	80.56
	G	18,170	15,634	2,536	555	211	344	30.54	13.50	135.63
	H	6,033	5,357	676	71	36	35	11.77	6.72	51.78
Twelfth	I	23,628	20,864	2,764	494	239	255	20.91	11.45	92.27
	K	3,457	3,081	376	58	31	27	16.78	10.06	71.81
	L	7,896	7,008	888	119	74	45	15.07	10.56	50.67
	M	38,865	34,357	4,508	778	353	425	20.02	10.27	94.27
	N	15,602	14,280	1,322	279	164	115	17.88	11.48	86.99
	O	26,072	23,172	2,900	409	237	172	15.69	10.23	59.31
	P	3,416	3,070	346	77	42	35	22.54	13.68	101.17
	R	8,263	7,261	1,002	127	76	51	15.37	10.47	50.90
	S	7,148	6,126	1,022	88	40	48	12.31	6.53	46.96
Thirteenth	A	30,090	24,433	5,657	673	233	440	22.37	9.54	77.78
	B	14,319	12,150	2,169	424	193	231	29.61	15.88	106.50
Fourteenth	A	9,578	8,349	1,229	321	136	185	33.52	16.29	150.52
	B	17,785	14,912	2,873	687	290	397	38.62	19.45	138.18
Fifteenth	A	8,892	7,516	1,376	208	130	78	23.39	17.30	56.69
	B	2,057	1,689	368	74	41	33	35.98	24.27	89.67
	C	2,295	2,025	270	45	30	15	19.61	14.81	55.56
	D	609	522	87	7	7	....	11.50	13.41	.....
Sixteenth	A	6,957	6,051	906	248	128	120	35.65	21.15	132.44
	B	13,741	12,433	1,308	345	225	120	25.10	18.10	91.74
	C	5,216	4,543	673	108	60	48	20.70	13.21	71.32
	D	10,755	9,459	1,296	221	136	85	20.55	14.38	65.58
Seventeenth	A	16,362	13,865	2,497	375	196	179	22.92	14.13	71.68
	B	31,044	26,373	4,671	679	326	353	21.87	12.36	75.57
	C	9,967	9,178	789	216	133	83	21.67	14.49	105.20
	D	16,171	14,623	1,548	314	182	132	19.42	12.44	85.28
	E	7,006	6,247	759	222	127	95	31.69	20.33	125.17
	F	15,540	13,493	2,047	476	256	220	30.63	18.97	107.47
Eighteenth	A	218	202	16	2	2	....	9.17	9.90	.....
	B	5,111	4,666	445	95	65	30	18.59	13.93	67.42
	C	24,700	21,610	3,090	719	400	319	29.11	18.51	103.22
	D	113	104	9	2	2	....	17.70	19.23	.....
	E	12,797	11,145	1,652	312	200	112	24.38	17.95	67.79
Nineteenth	A	888	810	78	12	10	2	13.51	12.35	25.64
	B	16,165	14,073	2,092	367	231	136	22.70	16.41	61.01
	C	15,899	13,640	2,259	402	200	202	25.28	14.66	89.44
	D	711	625	86	12	10	2	16.88	16.00	23.26
	E	11,831	10,550	1,281	233	145	88	19.69	13.74	68.70
	F	15,619	13,483	2,136	369	202	167	23.62	14.98	78.19
	G	3,092	2,665	427	44	33	11	14.23	12.38	25.76
	H	16,110	13,862	2,248	380	185	195	23.59	13.35	86.74
	I	5,277	4,455	822	135	53	82	25.58	11.90	99.76
	K	2,500	2,228	272	34	23	11	13.60	10.32	40.45
	L	20,464	17,783	2,681	501	231	270	24.48	12.99	100.71
	M	11,339	9,525	1,814	311	118	193	27.43	12.39	106.40
	N	7,336	6,633	703	100	63	37	13.63	9.50	52.63
	O	24,632	21,703	2,929	511	276	235	20.74	12.72	80.23
	P	26,246	22,729	3,517	477	248	229	18.17	10.91	65.11
Twentieth	A	11,449	10,239	1,210	450	240	210	39.30	23.44	173.56
	B	15,197	13,748	1,449	396	251	145	26.06	18.26	100.08
	C	10,830	9,636	1,194	320	183	137	29.55	18.99	114.73
	D	11,294	10,196	1,098	253	157	96	22.40	15.40	87.43
	E	14,081	12,212	1,869	431	220	211	30.60	18.02	112.89
	F	10,148	9,083	1,065	230	128	102	22.66	14.09	95.78
Twenty-first	A	366	340	26	11	9	2	30.05	26.50	76.92
	B	7,044	6,133	911	140	91	49	19.88	14.84	53.78
	C	10,868	9,259	1,609	336	196	140	30.92	21.17	87.01
	D	151	135	16	3	2	1	19.87	14.81	62.50
	E	5,480	4,902	578	106	67	39	19.35	13.67	67.48
	F	195	188	7	4	4	...	20.51	21.28	.....
	G	4,085	3,633	452	105	64	41	25.70	17.62	90.71
	H	12,758	11,261	1,497	384	229	155	30.10	20.34	103.53
Twenty-second	A	20,672	18,326	2,346	571	296	275	27.62	16.15	117.50
	B	33,082	29,742	3,340	741	412	329	22.39	13.85	98.49
	C	7,273	6,657	616	131	92	39	18.01	13.82	63.32
	D	7,584	6,858	726	247	117	130	32.57	17.06	179.08
	E	20,415	18,659	1,756	467	263	204	22.87	14.09	116.18
	F	5,366	4,876	490	83	56	27	15.47	11.48	55.10
	G	13,101	11,291	1,810	360	152	208	27.48	13.46	114.92
	H	6,828	5,817	1,011	205	86	119	30.03	14.78	117.70
	I	10,987	9,900	1,087	170	90	80	15.47	9.09	73.60
	K	955	849	106	13	9	4	13.61	10.60	37.74
Twenty-second	L	1,045	907	138	5	3	2	4.78	3.31	14.49
	M	2,735	2,446	289	29	17	12	10.60	6.95	41.52
Twenty-third	....	16,506	13,850	2,656	416	202	214	25.20	14.59	80.57
Twenty-fourth	....	3,938	3,228	710	72	35	37	18.28	10.84	52.11

TABLE II.—*Population, Deaths and Death-rates by Wards and Ages.*

Ward.	Population. Total.	Population. 5 Years and Over.	Population. Under 5 Years.	Deaths. Total.	Deaths. 5 Years and Over.	Deaths. Under 5 Years.	Death-rate. General.	Death-rate. 5 Years and Over.	Death-rate. Under 5 Years.
First	8,167	7,400	767	286	166	120	35.02	22.43	156.45
Second	144	127	17	.....	.....	.....	.....	.....	.....
Third	1,357	1,244	113	23	17	6	16.95	13.66	53.10
Fourth	15,324	13,422	1,902	564	309	255	36.80	23.02	134.08
Fifth	8,168	7,043	1,125	258	147	111	31.59	20.87	98.67
Sixth	23,141	20,739	2,402	622	306	316	26.88	14.75	131.56
Seventh	58,320	47,375	10,945	1,453	755	698	24.91	15.94	63.84
Eighth	22,528	19,324	3,204	686	365	321	30.45	18.89	100.18
Ninth	40,018	35,107	4,911	934	566	368	23.34	16.12	74.94
Tenth	61,514	51,577	9,937	1,152	475	677	18.73	9.21	68.11
Eleventh	70,980	60,021	10,959	1,740	799	941	24.51	13.31	85.88
Twelfth	211,895	186,611	25,284	4,065	2,071	1,994	19.18	11.10	78.86
Thirteenth	44,409	36,583	7,826	1,097	426	671	24.70	11.64	85.74
Fourteenth	27,363	23,261	4,102	1,008	426	582	36.84	18.31	141.88
Fifteenth	13,853	11,752	2,101	334	208	126	24.11	17.70	60.00
Sixteenth	36,669	32,486	4,183	922	549	373	25.14	16.90	89.17
Seventeenth	96,090	83,779	12,311	2,282	1,220	1,062	23.75	14.56	86.26
Eighteenth	42,939	37,727	5,212	1,130	669	461	26.32	17.73	88.44
Nineteenth	178,109	154,764	23,345	3,888	2,028	1,860	21.82	13.10	79.67
Twentieth	72,999	65,114	7,885	2,080	1,179	901	28.49	18.10	114.28
Twenty-first	40,947	35,851	5,096	1,089	662	427	26.60	18.46	83.79
Twenty-second	130,043	116,328	13,715	3,022	1,593	1,429	23.24	13.69	104.20
Twenty-third	16,506	13,850	2,656	416	202	214	25.20	14.58	80.58
Twenty-fourth	3,938	3,228	710	72	35	37	18.28	10.84	52.11
Total	1,225,421	1,064,713	160,708	29,123	15,173	13,950	23.77	14.25	86.67

TABLE III.—*Deaths by Particular Diseases by Districts.*

Ward.	District.	Bright's Disease.	Bronchitis.	Diarrhœal Diseases.	Diphtheria and Croup.	Heart Diseases.	Influenza.	Malarial Fevers.	Measles.	Phthisis.	Other Tuberculous Diseases.	Pneumonia.	Scarlet Fever.	Typhoid Fever.	All Other Causes.	Total.
First	A	21	14	20	4	13	2	..	9	43	7	45	6	1	88	273
	B	..	..	2	1	..	..	..	..	2	..	4	..	..	4	13
Second	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Third	..	..	1	1	..	..	..	..	..	6	..	3	..	..	12	23
Fourth	A	8	15	18	15	6	2	2	3	33	1	25	6	1	77	212
	B	20	29	38	10	12	3	..	3	45	3	58	15	..	116	352
Fifth	A	10	8	15	3	7	2	..	..	26	4	13	1	..	50	139
	B	7	6	17	8	5	1	1	1	15	3	19	1	2	33	119
Sixth	A	..	2	1	..	2	..	1	1	2	..	5	..	1	8	23
	B	6	15	6	5	5	1	..	4	24	2	23	4	1	58	154
	C	20	47	26	13	19	5	2	8	60	11	88	8	2	136	445
Seventh	A	25	16	19	11	8	2	..	3	35	8	48	5	1	86	267
	B	19	14	30	9	11	1	..	3	43	10	79	28	1	102	350
	C	31	15	58	27	22	7	3	7	51	10	101	21	2	181	536
	D	22	10	26	8	14	6	1	5	29	7	61	14	4	93	300
Eighth	A	15	8	25	8	7	3	1	1	21	1	29	6	1	75	201
	B	9	28	12	11	8	3	..	5	31	4	35	5	3	92	246
	C	6	21	13	21	10	4	2	4	29	6	31	8	3	81	239
Ninth	A	10	12	7	4	17	2	2	1	30	5	32	4	1	76	205
	B	19	35	33	14	23	7	2	9	44	5	47	9	2	173	422
	C	9	11	11	10	11	2	..	6	19	3	21	4	4	56	167
	D	10	7	10	3	3	5	1	2	22	4	17	2	1	53	140
Tenth	A	16	18	57	37	17	5	1	9	42	12	101	38	2	216	571
	B	32	16	67	37	21	4	1	9	56	19	97	27	5	190	581
Eleventh	A	21	33	68	26	14	5	..	9	55	19	96	38	1	176	561
	B	15	15	33	19	13	8	1	7	32	13	57	21	3	144	381
	C	16	12	27	9	8	2	2	3	28	17	49	15	2	98	288
	D	22	31	49	25	17	10	1	8	63	16	63	33	6	166	510
Twelfth	A	1	2	9	3	6	1	..	1	5	1	5	1	1	20	56
	B	14	4	8	10	15	5	2	1	27	3	36	8	1	69	203
	C	14	9	30	33	12	7	..	7	30	5	46	15	2	106	316
	D	7	3	6	6	3	4	..	1	10	1	12	1	2	28	84
	E	12	9	8	11	9	2	3	..	26	3	20	6	2	67	178
	F	12	8	23	14	1	6	..	..	18	..	25	4	..	62	173

Ward.	District.	Bright's Disease.	Bronchitis.	Diarrhœal Diseases.	Diphtheria and Croup.	Heart Diseases.	Influenza.	Malarial Fevers.	Measles.	Phthisis.	Other Tuberculous Diseases.	Pneumonia.	Scarlet Fever.	Typhoid Fever.	All Other Causes.	Total.
Twelfth	G	17	23	86	39	13	5	5	11	42	10	88	17	4	195	555
	H	6	1	6	7	2	2	..	..	7	1	10	3	..	26	71
	I	16	30	60	33	18	6	7	10	40	8	71	11	4	180	494
	K	5	4	9	..	3	1	..	..	8	..	9	2	2	15	58
	L	9	3	10	8	8	1	1	1	16	1	11	5	3	42	119
	M	31	31	97	39	23	18	22	18	67	18	104	22	4	284	778
	N	10	11	23	14	21	5	2	5	28	7	29	7	3	114	279
	O	24	21	40	22	20	5	1	14	57	5	55	8	5	132	409
	P	4	3	5	5	5	1	..	1	8	3	11	1	..	30	77
	R	9	4	14	9	8	4	1	2	17	3	17	1	2	36	127
	S	2	6	10	10	7	1	..	3	11	1	10	1	..	26	88
Thirteenth	A	26	23	64	54	19	4	1	15	47	15	133	54	1	217	673
	B	26	26	47	22	11	3	1	7	43	19	72	16	1	130	424
Fourteenth	A	13	42	17	11	13	8	4	6	33	13	46	4	1	110	321
	B	31	98	58	38	27	9	2	18	51	14	113	13	3	212	687
Fifteenth	A	19	13	13	7	13	2	2	2	42	3	21	3	3	65	208
	B	6	5	6	3	4	..	..	..	10	2	12	..	1	25	74
	C	5	..	3	1	7	1	..	1	5	..	5	2	1	14	45
	D	1	..	..	..	1	..	..	..	1	..	..	..	..	4	7
Sixteenth	A	14	15	14	10	10	7	..	10	26	6	36	4	4	92	248
	B	33	14	22	13	30	14	1	2	41	10	41	4	2	118	345
	C	3	6	8	9	6	..	..	1	15	1	16	2	..	41	108
	D	15	4	18	7	9	6	1	3	35	8	34	5	2	74	221
Seventeenth	A	19	14	38	14	24	4	2	4	43	11	33	19	3	147	375
	B	25	30	77	36	33	12	2	7	83	21	99	34	4	216	679
	C	10	9	18	16	14	4	1	3	26	9	40	7	1	58	216
	D	14	9	24	15	28	6	2	6	38	5	41	18	5	103	314
	E	13	15	17	12	14	8	1	1	28	7	23	12	2	69	222
	F	25	27	55	33	19	9	1	6	47	8	47	27	1	171	476
Eighteenth	A	..	..	..	..	..	..	..	..	..	..	1	..	..	1	2
	B	4	5	6	3	6	..	1	1	17	2	11	3	2	34	95
	C	44	34	83	28	31	10	2	9	88	26	78	20	7	259	719
	D	..	..	..	..	..	1	..	..	1	..	..	..	..	..	2
	E	31	11	28	10	20	6	1	2	40	4	36	12	4	107	312
Nineteenth	A	2	..	..	..	1	..	..	..	2	..	1	..	..	6	12
	B	26	9	24	16	21	10	3	6	52	12	41	10	1	136	367
	C	17	12	29	26	18	7	1	11	46	9	44	28	6	148	402
	D	1	..	..	..	2	1	..	..	2	..	2	..	..	4	12
	E	12	8	14	9	22	7	..	2	33	1	26	13	4	82	233
	F	21	14	37	9	20	6	1	4	50	13	42	12	10	130	369
	G	1	1	2	2	5	2	..	2	4	1	6	..	..	18	44
	H	20	10	41	17	15	4	2	13	40	9	61	15	..	133	380
	I	5	5	13	7	4	2	..	2	14	3	26	10	..	44	135
	K	3	1	3	2	1	1	..	..	1	1	7	..	..	14	34
	L	23	18	52	26	23	8	1	5	51	15	67	13	4	195	501
	M	8	14	44	27	8	4	1	9	39	10	26	6	5	110	311
	N	7	..	7	4	6	3	1	1	14	2	13	2	..	40	100
	O	27	13	38	35	31	14	2	4	52	13	67	10	5	200	511
	P	17	10	51	27	25	5	2	9	44	19	64	18	6	180	477
Twentieth	A	28	23	31	40	15	3	1	8	48	13	60	13	6	161	450
	B	31	19	25	15	29	6	2	6	66	9	48	7	5	128	396
	C	22	16	21	32	15	8	..	12	42	6	48	6	5	87	320
	D	16	10	21	10	21	3	..	2	22	8	31	3	2	104	253
	E	34	19	42	30	22	9	1	5	47	5	58	21	1	137	431
	F	15	11	24	9	9	3	..	4	34	6	30	6	3	76	230
Twenty-first	A	..	..	..	1	1	1	..	..	1	..	3	1	..	3	11
	B	7	6	12	4	9	4	1	..	28	3	15	..	2	49	140
	C	23	15	20	28	14	7	..	6	48	12	36	7	4	116	336
	D	..	..	..	..	..	..	..	..	..	..	1	..	1	1	3
	E	3	3	11	4	6	1	..	..	16	4	14	5	1	38	106
	F	..	..	..	..	..	1	..	..	1	..	..	..	..	2	4
	G	2	6	6	3	7	1	..	..	11	1	14	7	4	43	105
	H	21	19	31	17	22	9	5	5	49	7	51	11	6	131	384
Twenty-second	A	37	23	56	27	24	12	3	7	60	16	84	11	5	206	571
	B	45	36	68	38	36	23	4	9	92	18	87	15	6	264	741
	C	6	5	10	4	8	5	1	..	17	5	18	2	..	50	131
	D	8	9	35	17	7	5	..	4	16	3	29	2	6	106	247
	E	27	22	48	14	31	8	1	7	52	8	57	11	11	170	467
	F	5	4	9	4	6	5	..	3	9	3	11	..	..	24	83
	G	13	17	49	18	18	3	..	7	34	11	53	8	4	125	360
	H	5	13	22	14	8	3	3	12	23	1	16	1	1	83	205
	I	14	6	12	7	11	4	1	..	15	5	23	4	1	67	170
	K	2	..	2	..	..	..	..	..	2	..	2	..	..	5	13
	L	..	..	1	..	..	..	..	..	1	..	2	..	..	1	5
	M	1	1	4	2	1	1	..	..	2	..	3	..	3	11	29
Twenty-third	..	23	21	56	43	11	2	2	5	53	8	43	8	2	139	416
Twenty-fourth	..	8	7	7	10	1	1	..	1	8	..	6	1	..	22	72

TABLE IV.—*Deaths by Particular Diseases, by Wards.*

Ward.	Bright's Disease.	Bronchitis.	Diarrhœal Diseases.	Diphtheria and Croup.	Heart Disease.	Influenza.	Malarial Fevers.	Measles.	Phthisis.	Other Tuberculous Diseases.	Pneumonia.	Scarlet Fever.	Typhoid Fever.	All Other Causes.	Total.
First	21	14	22	5	13	2	..	9	45	7	49	6	1	92	286
Second	..	..	..	..	..	..	..	..	..	..	..	..	..	....	....
Third	1	1	..	..	..	..	..	..	6	..	3	..	..	12	23
Fourth	28	44	56	25	18	5	2	6	78	4	83	21	1	193	564
Fifth	17	14	32	11	12	3	1	1	41	7	32	2	2	83	258
Sixth	26	64	33	18	26	6	3	13	86	13	116	12	4	202	622
Seventh	97	55	133	55	55	16	4	18	158	35	289	68	8	462	1,453
Eighth	30	57	50	40	25	10	3	10	81	11	95	19	7	248	686
Ninth	48	65	61	31	54	16	5	18	115	17	117	19	8	360	934
Tenth	48	34	124	74	38	9	2	18	98	31	198	65	7	406	1,152
Eleventh	74	91	177	79	52	25	4	27	178	65	265	107	12	584	1,740
Twelfth	193	172	444	263	174	74	44	75	417	70	559	113	35	1,432	4,065
Thirteenth	52	49	111	76	30	7	2	22	90	34	205	70	2	347	1,097
Fourteenth	44	140	75	49	40	17	6	24	84	27	159	17	4	322	1,008
Fifteenth	31	18	22	11	25	3	2	3	58	5	38	5	5	108	334
Sixteenth	65	39	62	39	55	27	2	16	117	25	127	15	8	325	922
Seventeenth	106	104	229	126	132	43	9	27	265	61	283	117	16	764	2,282
Eighteenth	79	50	117	41	57	17	4	12	146	32	126	35	13	401	1,130
Nineteenth	190	115	355	207	202	74	14	68	444	108	493	137	41	1,440	3,888
Twentieth	146	98	164	136	111	32	4	37	259	47	275	56	22	693	2,080
Twenty-first	56	49	80	57	59	24	6	11	154	27	134	31	18	383	1,089
Twenty-second	163	136	316	145	150	69	13	49	323	70	385	54	37	1,112	3,022
Twenty-third	23	21	56	43	11	2	2	5	53	8	43	8	2	139	416
Twenty-fourth	8	7	7	10	1	1	..	1	8	..	6	1	..	22	72
Total	1,545	1,437	2,727	1,541	1,340	482	132	470	3,304	704	4,080	978	253	10,130	29,123

TABLE V.—*Death-rates by Particular Diseases by Districts.*

Ward.	District.	Bright's Disease.	Bronchitis.	Diarrhœal Diseases.	Diphtheria and Croup.	Heart Disease.	Influenza.	Malarial Fevers.	Measles.	Phthisis.	Other Tuberculous Diseases.	Pneumonia.	Scarlet Fever.	Typhoid Fever.	All Other Causes.	General Rate.
First	A	2.80	1.87	2.67	.53	1.73	.27	..	1.20	5.73	.93	6.00	.80	.13	11.73	36.38
	B	...	...	3.02	1.51	...	...	..	...	3.02	...	6.03	...	...	6.03	19.61
Second	..	...	...	...	...	...	...	..	...	...	...	...	...	...	....	....
Third	..	...	.74	.74	...	...	...	..	...	4.42	...	2.21	...	...	8.84	16.95
Fourth	A	1.53	2.87	3.44	2.87	1.15	.38	.38	.57	6.31	.19	4.78	1.15	.19	14.71	40.52
	B	1.98	2.87	3.76	.99	1.19	.30	..	.30	4.46	.30	5.75	1.49	...	11.49	34.88
Fifth	A	2.00	1.60	3.00	.60	1.40	.40	..	...	5.20	.80	2.60	.20	...	10.00	27.82
	B	2.21	1.89	5.36	2.52	1.58	.32	.32	.32	4.73	.95	5.99	.32	.63	10.41	37.52
Sixth	A	...	1.66	.83	...	1.66	..	.83	.83	1.66	...	4.14	...	.83	6.62	19.04
	B	1.00	2.50	1.00	.83	.83	.17	..	.67	3.99	.33	3.83	.67	.17	9.65	25.63
	C	1.26	2.95	1.63	.82	1.19	.31	.13	.50	3.77	.69	5.53	.50	.13	8.54	27.94
Seventh	A	2.61	1.67	1.99	1.15	.84	.21	..	.31	3.66	.84	5.02	.52	.10	8.99	27.90
	B	1.96	1.45	3.10	.93	1.14	.10	..	.31	4.44	1.03	8.16	2.89	.10	10.54	36.17
	C	1.14	.55	2.13	.99	.81	.26	.11	.26	1.88	.37	3.72	.77	.07	6.66	19.72
	D	1.85	.85	2.19	.67	1.18	.50	.03	.42	2.44	.53	5.13	1.18	.34	7.82	25.21
Eighth	A	2.12	1.13	3.54	1.13	.99	.42	.14	.14	2.97	.14	4.10	.85	.14	10.62	28.45
	B	1.21	3.76	1.61	1.48	1.07	.40	..	.67	4 16	.54	4.70	.67	.40	12.36	33.05
	C	.75	2.62	1.62	2.62	1.25	.50	.25	.50	3.62	.75	3 87	1.00	.37	10.10	29.80
Ninth	A	1.37	1.65	.97	.55	2.34	.27	.27	.14	4 12	.69	4.40	.55	.14	10.72	28.18
	B	1.12	2.06	1.94	.82	1.35	.41	.12	.53	2.59	.29	2.77	.53	.12	10.19	24.86
	C	1.18	1.45	1.45	1.32	1.45	.26	..	.79	2.50	.39	2.76	.53	.53	7.36	21.96
	D	1.22	.86	1.22	.37	.37	.61	.12	.24	2.69	.49	2.08	.24	.12	6.49	17.15
Tenth	A	.45	.51	1.02	1.05	.48	.14	.03	.26	1.19	.34	2.87	1.08	.06	6.14	16.23
	B	1.22	.61	2 54	1.41	.80	.15	.04	.34	2.13	.72	3.68	1.03	.19	7 22	22.07
Eleventh	A	.88	1.38	2.85	1.09	.59	.21	..	.38	2.31	.80	4.03	1.59	.04	7.38	23.53
	B	.80	.80	1.76	1.01	.69	.43	.05	.37	1.70	.69	3.03	1.12	.16	7.66	20.26
	C	1.54	1.15	2.59	.86	.77	.19	.19	.29	2.69	1.63	4.71	1.44	.19	9.42	27.67
	D	1.23	1.73	2.73	1.39	.95	.56	.06	.45	3.51	.89	3.51	1.84	.33	9.26	28.45
Twelfth	A	.26	.52	2.32	.77	1.55	.26	..	.26	1.29	.26	1.29	.26	.26	5.15	14.43
	B	1.37	.39	.78	.98	1.47	.49	.20	.10	2.65	.29	3.53	.78	.10	6.76	19.89
	C	.91	.58	1.94	2.14	.78	.45	..	.45	1.94	.32	2.98	.97	.13	6.87	20.47
	D	1.43	.61	1.22	1.22	.61	.82	..	.20	2.04	.20	2.44	.20	.41	5.70	17.10
	E	1.14	.86	.76	1.05	.86	.19	.29	...	2.47	.29	1.90	.57	.19	6.37	16.92
	F	1.43	.95	2.74	1.67	.12	.71	..	...	2.14	...	2.98	.48	...	7.39	20.61
	G	.94	1.27	4.73	2.15	.72	.28	.28	.61	2.31	.55	4.84	.94	.22	10.73	30.54
	H	.99	.17	.99	1.16	.33	.33	..	...	1.16	.17	1.66	.49	...	4.31	11.77
	I	.68	1.27	2.54	1.40	.76	.25	.30	.42	1.69	.34	3.00	.47	.17	7.62	20.91
	K	1.45	1.16	2.60	...	.86	.29	..	...	2.32	...	2.60	.58	.58	4.34	16.78
	L	1.14	.38	1.27	1.01	1.01	.13	.13	.13	2.03	.13	1.39	.63	.38	5.32	15.07
	M	.80	.80	2.50	1.00	.59	.46	.57	.46	1.72	.46	2.68	.57	.10	7.31	20.02
	N	.64	.71	1.47	.90	1.35	.32	.13	.32	1.79	.45	1.86	.45	.19	7.31	17.88
	O	.92	.81	1.53	.84	.77	.19	.04	.54	2.19	.19	2.11	.31	.19	5.06	15.69

Ward.	District.	Bright's Disease.	Bronchitis.	Diarrhœal Diseases.	Diphtheria and Croup.	Heart Disease.	Influenza.	Malarial Fevers.	Measles.	Phthisis.	Other Tuberculous Diseases.	Pneumonia.	Scarlet Fever.	Typhoid Fever.	All Other Causes.	General Rate.
Twelfth	P	1.17	.88	1.46	1.46	1.46	.23	..	.29	2.34	.88	3.25	.29	...	8.78	22.54
	R	1.09	.48	1.69	1.09	.97	.48	.12	.24	2.06	.36	2.06	.12	.24	4.36	15.37
	S	.28	.84	1.40	1.40	.98	.14	..	.42	1.54	.14	1.40	.14	..	3.64	12.31
Thirteenth	A	.86	.76	2.13	1.79	.63	.13	.03	.50	1.56	.50	4.42	1.79	.03	7.21	22.37
	B	1.82	1.82	3.28	1.54	.77	.21	.07	.49	3.00	1.33	5.03	1.12	.07	9.08	29 61
Fourteenth	A	1.36	4.39	1.77	1.15	1.36	.84	.42	.63	3.45	1.36	4.80	.42	.10	11.49	33.52
	B	1.74	5.51	3.26	2.14	1.52	.51	.11	1.01	2.87	.79	6.35	.73	.17	11.92	38.62
Fifteenth	A	2.14	1.46	1.46	.79	1.46	.22	.22	.22	4.72	.34	2.36	.34	.34	7.31	23.39
	B	2.92	2.43	2.92	1.46	1.94	...	..	...	4.86	.97	5.83	...	.49	12.15	35.98
	C	2.18	...	1.31	.44	3.05	.44	..	.44	2.18	...	2.18	.88	.44	6.10	19.61
	D	1.64	...	...	...	1.64	...	..	...	1.64	...	...	...	...	6.57	11.50
Sixteenth	A	2.01	2.16	2.01	1.44	1.44	1.01	..	1.44	3.74	.86	5.17	.58	.58	13.22	35.65
	B	2.40	1.02	1.60	.95	2.18	1.02	.07	.15	2.98	.73	2.98	.29	.15	8.59	25.10
	C	.57	1.15	1.53	1.73	1.15	...	..	.19	2.88	.19	3.07	.38	...	7.86	20.70
	D	1.39	.37	1.67	.65	.84	.56	.09	.28	3.25	.74	3.16	.46	.19	6.88	20.55
Seventeenth	A	1.16	.86	2.32	.86	1.47	.24	.12	.24	2.63	.67	2.07	1.16	.18	8.98	22.92
	B	.81	.97	2.48	1.16	1.06	.39	.06	.23	2.67	.68	3.19	1.10	.13	6.96	21.87
	C	1.00	.90	1.81	1.65	1.40	.40	.10	.30	2.61	.90	4.01	.70	.10	5.82	21.67
	D	.87	.56	1.48	.93	1.73	.37	.12	.37	2.35	.31	2.54	1.11	.31	6.37	19.42
	E	1.86	2.14	2.43	1.71	2.00	1.14	.14	.14	4.00	1.00	3.28	1.71	.29	9.85	31.69
	F	1.61	1.74	3.54	2.12	1.22	.58	.06	.39	3.02	.51	3.02	1.74	.06	11.00	30.63
Eighteenth	A	...	...	...	...	...	...	..	...	...	...	4.59	...	...	4.59	9.17
	B	.78	.98	1.17	.59	1.17	...	.20	.20	3.33	.39	2.15	.59	.39	6.65	18.59
	C	1.78	1.38	3.36	1.13	1.26	.40	.08	.36	3.56	1.05	3.16	.81	.28	10.48	29.11
	D	...	...	...	...	...	8.85	..	...	8.85	...	...	...	...	....	17.70
	E	2.42	.86	2.19	.78	1.56	.47	.08	.16	3.13	.31	2.81	94	.31	8.36	24.38
Nineteenth	A	2.25	...	...	...	1.13	...	..	...	2.25	...	1.13	...	...	6.76	13.51
	B	1.61	.56	1.48	.99	1.30	.62	.19	.37	3.22	.74	2.54	.62	.06	8.41	22.70
	C	1.07	.76	1.82	1.64	1.13	.44	.06	.69	2.89	.57	2.77	1.76	.38	9.31	25.28
	D	1.41	...	...	...	2.81	1.41	..	...	2.81	...	2.81	...	...	5.63	16.88
	E	1.01	.68	1.18	.76	1.86	.59	..	.17	2.79	.08	2.20	1.10	.34	6.93	19.69
	F	1.34	.90	2.37	.58	1.28	.38	.06	.26	3.20	.83	2.69	.77	.64	8.32	23.62
	G	.32	.32	.65	.65	1.62	.65	..	.65	1.29	.32	1.94	...	...	5.82	14.23
	H	1.24	.62	2.55	1.06	.93	.25	.12	.81	2.48	.56	3.79	.93	...	8.26	23.59
	I	.95	.95	2.46	1.33	.76	.38	..	.38	2.65	.57	4.93	1.89	...	8.34	25.58
	K	1.20	.40	1.20	.80	.40	.40	..	...	.40	.40	2.80	...	...	5.60	13.60
	L	1.12	.88	2.54	1.27	1.12	.39	.05	.24	2.49	.73	3.27	.64	.20	9.53	24.48
	M	.71	1.23	3.88	2.38	.71	.35	.09	.79	3.44	.88	2.29	.53	.44	9.70	27.43
	N	.95	...	.95	.55	.82	.41	.14	.14	1.91	.27	1.77	.27	...	5.45	13.63
	O	1.10	.53	1.54	1.42	1.26	.57	.08	.16	2.11	.53	2.72	.41	.20	8.12	20.74
	P	.65	.38	1.94	1.03	.95	.19	.08	.34	1.68	.72	2.44	.69	.23	6.86	18.17
Twentieth	A	2.45	2.01	2.71	3.49	1.31	.26	.09	.70	4.19	1.14	5.24	1.14	.52	14.06	39.30
	B	2.04	1.25	1.64	.99	1.91	.39	.13	.39	4 34	.59	3.16	.46	.33	8.42	26.06
	C	2.03	1.48	1.94	2.95	1.39	.74	..	1.11	3.88	.55	4.43	.55	.46	8.03	29.55
	D	1.42	.89	1.86	.89	1.86	.27	..	.18	1.95	.71	2.74	.27	.18	9.21	22.40
	E	2.41	1.35	2.98	2.13	1.56	.64	.07	.36	3.34	.36	4.12	1.49	.07	9.73	30.60
	F	1.48	1.08	2.36	.89	.89	.30	..	.39	3.35	.59	2.96	.59	.30	7.49	22.66
Twenty-first	A	...	...	...	2.73	2.73	2.73	..	...	2.73	...	8.20	2.73	...	8.20	30.05
	B	.99	.85	1.70	.57	1.28	.57	.14	...	3.97	.43	2.13	...	.28	6.96	19.88
	C	2.12	1.38	1.84	2.58	1.29	.64	..	.55	4.42	1.10	3.31	.64	.37	10 67	30.92
	D	...	...	...	...	...	...	..	...	...	...	6.62	...	6.62	6.62	19 87
	E	.55	.55	2.01	.73	1.09	.18	..	...	2.92	.73	2.56	.91	.18	6.93	19.35
	F	...	...	...	...	...	5.13	..	...	5.13	...	...	...	...	10.26	20.51
	G	.49	1.47	1.47	.73	1.71	.24	..	...	2.69	.24	3.43	1.71	.98	10 52	25.70
	H	1.65	1.49	2.43	1.33	1.72	.71	.39	.39	3.84	.55	4.00	.86	.47	10 27	30.10
Twenty-second	A	1.79	1.11	2.71	1.31	1.16	.58	.15	.34	2.90	.77	4.06	.53	.24	9 96	27.62
	B	1.36	1.09	2.06	1.15	1.09	.70	.12	.27	2.78	.54	2.63	.45	.18	7.98	22.39
	C	.82	.69	1.37	.55	1.10	.69	.14	...	2.34	.69	2.47	.28	...	6.87	18.01
	D	1.05	1.19	4.61	2.24	.92	.66	..	.53	2.11	.40	3.82	.26	.79	13.98	32.57
	E	1.32	1.08	2.35	.69	1.52	.39	.05	.34	2.55	.39	2.79	.54	.54	8.33	22.87
	F	.93	.75	1.68	.75	1.12	.93	..	.56	1.68	.56	2.05	...	...	4.48	15.47
	G	.99	1.30	3.74	1.37	1.37	.23	..	.53	2.59	.84	4.04	.61	.31	9.54	27.48
	H	.73	1.90	3.22	2.05	1.17	.44	.44	1.76	3.37	.15	2.34	.15	.15	12.16	30.03
	I	1.27	.55	1.09	.64	1.00	.36	.09	...	1.37	.46	2.09	.36	.09	6.10	15.47
	K	2.09	...	2.09	...	...	...	..	...	2.09	...	2.09	...	...	5.24	13.61
	L	...	...	.96	...	...	...	..	...	.96	...	1.91	...	...	.96	4.78
	M	.37	.37	1.46	.73	.37	.37	..	...	.73	...	1.10	...	1 10	4.02	10.60
Twenty-third	...	1.39	1.27	3.39	2.60	.67	.12	.12	.30	3.21	.48	2.60	.48	.12	8.42	25.20
Twenty-fourth	....	2.03	1.78	1.78	2.54	.25	.25	..	.25	2.03	...	1.52	.25	...	5.59	18.28

TABLE VI.—*Death-rates by Particular Diseases by Wards.*

Ward.	Bright's Disease.	Bronchitis.	Diarrhœal Diseases.	Diphtheria and Croup.	Heart Diseases.	Influenza.	Malarial Fevers.	Measles.	Phthisis.	Other Tuberculous Diseases.	Pneumonia.	Scarlet Fever.	Typhoid Fever.	All Other Causes.	General Rate.
First	2.57	1.71	2.69	.61	1.59	.24	...	1.10	5.51	.86	6.00	.73	.12	11.26	35.02
Second	....	....	....	....	....	...	...	...	....	...	....	...	...	....	....
Third	.74	.74	....	....	....	...	...	...	4.42	...	2.21	...	...	8.84	16.95
Fourth	1.83	2.87	3.65	1.63	1.17	.33	.13	.39	5.09	.26	5.42	1.37	.07	12.59	36.80
Fifth	2.08	1.71	3.92	1.35	1.47	.37	.12	.12	5.02	.86	3.92	.24	.24	10.16	31.59
Sixth	1.12	2.77	1.43	.78	1.12	.26	.13	.56	3.72	.56	5.01	.52	.17	8.73	26.88
Seventh	1.66	.94	2.28	.94	.94	.27	.07	.31	2.71	.60	4.96	1.17	.14	7.92	24.91
Eighth	1.33	2.53	2.22	1.78	1.11	.44	.13	.44	3.60	.49	4.22	.84	.31	11.01	30.45
Ninth	1.20	1.62	1.52	.77	1.35	.40	.12	.45	2.87	.42	2.92	.47	.20	9.00	23.34
Tenth	.78	.55	2.02	1.20	.62	.15	.03	.29	1.59	.50	3.22	1.06	.11	6.60	18.73
Eleventh	1.04	1.28	2.49	1.11	.73	.35	.06	.38	2.51	.92	3.73	1.51	.17	8.23	24.51
Twelfth	.91	.81	2.10	1.24	.83	.35	.21	.35	1.97	.33	2.64	.53	.17	6.76	19.18
Thirteenth	1.17	1.10	2.50	1.71	.68	.16	.05	.50	2.03	.77	4.62	1.58	.05	7.81	24.70
Fourteenth	1.61	5.12	2.74	1.79	1.46	.62	.22	.88	3.07	.99	5.81	.62	.15	11.77	36.84
Fifteenth	2.24	1.30	1.59	.80	1.80	.23	.14	.22	4.19	.36	2.74	.36	.36	7.80	24.11
Sixteenth	1.77	1.06	1.69	1.06	1.50	.74	.05	.44	3.19	.68	3.46	.41	.22	8.86	25.14
Seventeenth	1.10	1.08	2.38	1.31	1.37	.45	.09	.28	2.76	.63	2.95	1.22	.17	7.95	23.75
Eighteenth	1.84	1.16	2.73	.96	1.33	.40	.09	.28	3.40	.75	2.93	.82	.30	9.36	26.32
Nineteenth	1.07	.65	1.99	1.16	1.13	.42	.08	.38	2.49	.61	2.77	.77	.23	8.08	21.82
Twentieth	2.00	1.34	2.25	1.86	1.52	.44	.05	.51	3.55	.64	3.77	.77	.30	9.49	28.49
Twenty-first	1.37	1.20	1.95	1.39	1.44	.59	.15	.27	3.76	.66	3.27	.76	.44	9.35	26.60
Twenty-second	1.25	1.05	2.43	1.12	1.15	.53	.10	.38	2.48	.54	2.96	.42	.28	8.55	23.24
Twenty-third	1.39	1.27	3.39	2.60	.67	.12	.12	.30	3.21	.48	2.60	.48	.12	8.42	25.20
Twenty-fourth	2.03	1.78	1.78	2.54	.25	.25	...	.25	2.03	...	1.52	.25	...	5.59	18.28
Total	1.26	1.17	2.23	1.26	1.09	.39	.11	.38	2.70	.57	3.33	.80	.21	8.27	23.77

TABLE VII.—*Deaths according to Cause and Density of Population.*

Houses Containing	Bright's Disease.	Bronchitis.	Diarrhœal Diseases.	Diphtheria and Croup.	Heart Disease.	Influenza.	Malarial Fevers.	Measles.	Phthisis.	Other Tuberculous Diseases.	Pneumonia.	Scarlet Fever.	Typhoid Fever.	All Other Causes.	Total.
Less than 20 tenants	258	154	274	161	245	70	17	36	469	73	486	105	42	1,250	3,640
20 and less than 40	493	346	684	463	445	154	36	104	1,036	184	1,044	229	70	2,918	8,206
40 and less than 60	394	346	761	385	317	139	28	138	856	191	1,064	246	80	2,634	7,579
60 and less than 80	238	282	555	284	197	70	35	97	521	143	753	211	32	1,846	5,264
80 and less than 100	99	164	291	160	89	28	9	55	264	68	429	105	23	886	2,670
100 and over	63	145	162	88	47	21	7	40	158	45	304	82	6	596	1,764
Total	1,545	1,437	2,727	1,541	1,340	482	132	470	3,304	704	4,080	978	253	10,130	29,123

TABLE VIII.—*Death-rates, according to Cause and Density of Population.*

Houses Containing	Bright's Disease.	Bronchitis.	Diarrhœal Diseases.	Diphtheria and Croup.	Heart Disease.	Influenza.	Malarial Fevers.	Measles.	Phthisis.	Other Tuberculous Diseases.	Pneumonia.	Scarlet Fever.	Typhoid Fever.	All Other Causes.	Total.
Less than 20 tenants	1.86	1.11	1.97	1.16	1.76	.50	.12	.26	3.38	.53	3.50	.76	.30	9.00	26.20
20 and less than 40	1.36	.95	1.89	1.28	1.23	.42	.10	.29	2.86	.51	2.88	.63	.19	8.04	22.62
40 and less than 60	1.25	1.10	2.41	1.22	1.00	.44	.09	.44	2.71	.61	3.37	.78	.25	8.35	24.02
60 and less than 80	1.10	1.31	2.57	1.32	.91	.32	.16	.45	2.41	.66	3.49	.98	.15	8.55	24.39
80 and less than 100	.89	1.47	2.62	1.44	.80	.25	.08	.49	2.37	.61	3.86	.94	.21	7.97	24.00
100 and over	.78	1.79	2.00	1.08	.58	.26	.09	.49	1.95	.55	3.75	1.01	.07	7.34	21.74
General Death-rate	1.26	1.17	2.23	1.26	1.09	.39	.11	.38	2.70	.57	3.33	.80	.21	8.27	23.77

TABLE IX.—*Population, Deaths and Death-rates by Age and Density of Population.*

Houses Containing	Population.			Deaths.			Death-rates.		
	Total.	5 Years and Over.	Under 5 Years.	Total.	5 Years and Over.	Under 5 Years.	General.	5 Years and Over.	Under 5 Years
Less than 20 tenants	138,949	122,215	16,734	3,640	2,336	1,304	26.20	19.11	77.91
20 and less than 40	362,753	318,237	44,516	8,206	4,792	3,414	22.62	15.06	76.67
40 and less than 60	315,479	274,067	41,412	7,579	3,913	3,666	24.02	14.28	88.53
60 and less than 80	215,875	186,960	28,915	5,264	2,357	2,907	24.39	12.61	100.55
80 and less than 100	111,220	94,859	16,361	2,670	1,103	1,567	24.00	11.63	95.78
100 and over	81,145	68,375	12,770	1,764	672	1,092	21.74	9.83	85.51
Total	1,225,421	1,064,713	160,708	29,123	15,173	13,950	23.77	14.25	86.80

TABLE X.—*Population, Deaths and Death-rates in Certain Special Localities.*

LOCALITY.	POPULATION.			DEATHS.			DEATH-RATES.		
	Total.	5 Years and Over.	Under 5 Years.	Total.	5 Years and Over.	Under 5 Years.	General.	5 Years and Over.	Under 5 Years
a. Bordering on East river, below Eighty-sixth street	200,737	172,567	28,170	5,549	2,881	2,668	27.64	16.70	94.70
b. Bordering on North river, below Eighty-sixth street	129,630	114,114	15,516	3,953	2,107	1,846	30.49	18.46	118.60
c. Former marsh land	161,294	138,764	22,530	4,302	2,124	2,178	26.66	15.31	96.67
d. Made land	73,865	65,259	8,606	2,175	1,249	926	30.84	19.14	107.60
e. Vicinity of slaughter-houses	63,753	55,469	8,284	1,764	868	896	27.67	15.65	108.15
f. Vicinity of gas-houses	106,620	92,983	13,637	2,810	1,353	1,457	26.36	14.55	106.86

a. Comprising First Ward, District B; Second Ward; Fourth Ward, Districts A and B; Seventh Ward, Districts A and B; Thirteenth Ward, District B; Eleventh Ward, Districts C and D; Eighteenth Ward, District C; Twenty-first Ward, Districts C and H; Nineteenth Ward, Districts C, F, I, M and P.

b. Comprising First Ward, District A; Third Ward; Fifth Ward, District A; Eighth Ward, District A; Ninth Ward, Districts A and C; Sixteenth Ward, Districts A and C; Twentieth Ward, Districts A, C and E; Twenty-second Ward, Districts A, D, G, H and L.

c. Comprising Fourth Ward, District B; Seventh Ward, Districts A and B; Eleventh Ward, Districts B, C and D; Twelfth Ward, Districts C, D, G and I; Fifth Ward, Districts A and B; Eighth Ward, Districts A and B.

d. Comprising First Ward, Districts A and B; Second Ward; Fourth Ward, District A; Sixth Ward, District B; Eighteenth Ward, District C; Twenty-first Ward, District H; Ninth Ward, District C; Sixteenth Ward, Districts A and C.

e. Comprising Nineteenth Ward, District C; Twentieth Ward, District E; Twenty-second Ward, Districts A and G.

f. Comprising Eighteenth Ward, District C; Sixteenth Ward, District A; Eleventh Ward, District D; Twelfth Ward, Districts G and M.

TABLE XI.—*Deaths by Particular Diseases in Certain Special Localities.*

LOCALITY. See Table X.	Bright's Disease.	Bronchitis.	Diarrhœal Diseases.	Diphtheria and Croup.	Heart Disease.	Influenza.	Malarial Fevers.	Measles.	Phthisis.	Other Tuberculous Diseases.	Pneumonia.	Scarlet Fever.	Typhoid Fever.	All Other Causes.	Total.
a. Bordering East river	292	266	538	271	215	73	18	85	670	173	765	280	56	1,897	5,549
b. Bordering North river	229	195	358	226	180	61	11	83	457	82	545	89	39	1,398	3,953
c. Marsh land	212	232	447	224	142	57	18	63	461	103	667	174	31	1,471	4,302
d. Made land	126	129	193	99	104	33	9	47	299	53	299	57	24	806	2,278
e. Near slaughter-houses	101	71	176	101	82	31	5	30	187	41	239	68	16	616	1,764
f. Near gas-houses	128	134	329	141	94	50	30	56	286	76	369	96	25	996	2,810

TABLE XII.—*Death-rates by Particular Diseases in Certain Localities.*

LOCALITY.	Bright's Disease.	Bronchitis.	Diarrhœal Diseases.	Diphtheria and Croup.	Heart Disease.	Influenza.	Malarial Fevers.	Measles.	Phthisis.	Other Tuberculous Diseases.	Pneumonia.	Scarlet Fever.	Typhoid Fever.	All Other Causes.	General Death-rate.
a. On East river	1.45	1.32	2.68	1.35	1.07	.36	.09	.42	3.34	.86	3.81	1.15	.28	9.45	27.64
b. On North river	1.77	1.50	2.76	1.74	1.39	.47	.08	.64	3.52	.63	4.20	.69	.30	10.78	30.49
c. Marsh land	1.31	1.44	2.77	1.39	.88	.35	.11	.39	2.86	.64	4.14	1.08	.19	9.12	26.66
d. Made land	1.71	1.75	2.61	1.34	1.41	.45	.12	.64	4.05	.72	4.05	.77	.32	10.91	30.84
e. Near slaughter-houses	1.58	1.11	2.76	1.58	1.29	.49	.08	.47	2.93	.64	3.75	1.07	.25	9.66	27.67
f. Near gas-houses	1.20	1.26	3.02	1.32	.88	.47	.28	.53	2.68	.71	3.46	.90	.23	9.34	26.36

TABLE XIII.—*Population, Deaths and Death-rates in Houses Occupied Wholly or Partly by Home-workers.*

HOUSES OCCUPIED BY	POPULATION.			DEATHS.			DEATH-RATES.		
	Total.	5 Years and Over.	Under 5 Years.	Total.	5 Years and Over.	Under 5 Years.	General.	5 Years and Over.	Under 5 Years.
Tailors only	2,495	2,011	484	61	19	42	24.45	9.45	86.79
Tailors partly	20,558	17,003	3,555	471	202	269	22.91	11.88	75.77
Dressmakers partly	3,869	3,370	499	86	35	51	22.23	10.39	102.20
Total	26,922	22,384	4,538	618	256	362	22.95	11.44	79.77
Cigar-makers only	1,817	1,456	361	48	20	28	26.41	13.74	77.56
Cigar-makers partly	2,968	2,510	458	86	35	51	28.97	13.94	111.35
Total	4,785	3,966	819	134	55	79	28.01	13.87	96.45
Other artisans	14,149	11,962	2,187	380	189	191	26.85	15.72	87.33
Grand total	45,856	38,312	7,544	1,132	500	632	24.69	13.05	83.77

TABLE XIV.—*Deaths and Death-rates by Certain Diseases in Houses Occupied Wholly or Partly by Home-workers.*

HOUSES OCCUPIED BY	DEATHS.								DEATH-RATES.							
	Diarrhœal Diseases	Diphtheria and Croup.	Measles.	Scarlet Fever.	Phthisis.	Other Tuberculous Diseases.	All Other Causes.	Total.	Diarrhœal Diseases.	Diphtheria and Croup.	Measles.	Scarlet Fever.	Phthisis.	Other Tuberculous Diseases.	All Other Causes.	General Death-rate.
Tailors only	7	5	3	1	2	1	42	61	2.81	2.00	1.20	.40	.80	.40	16.83	24.45
Tailors partly	38	33	13	23	47	13	304	471	1.85	1.61	.63	1.12	2.29	.63	14.79	22.91
Dressmakers partly	13	5	1	7	9	4	47	86	3.36	1.29	.26	1.81	2.33	1.03	12.15	22.23
Total	58	43	17	31	58	18	393	618	2.15	1.60	.63	1.15	2.15	.67	14.60	22.95
Cigar-makers only	7	1	1	1	8	2	29	48	3.85	...	.55	.55	4.40	1.10	15.96	26.41
Cigar-makers partly	10	5	2	3	6	4	56	86	3.37	1.68	.67	1.01	2.02	1.35	18.87	28.97
Total	17	5	3	4	14	6	85	134	3.55	1.05	.63	.84	2.93	1.25	17.77	28.01
Other artisans	31	19	8	9	39	9	265	380	2.19	1.34	.57	.64	2.76	.64	18.73	26.85
Grand total	106	67	28	44	111	33	743	1,132	2.31	1.46	.61	.96	2.42	.72	16.20	24.69

EMMONS CLARK, *Secretary:*

SIR—I have the honor to submit the annual report of the Bureau of Records for the year 1891.

There were reported during the year 43,634 deaths, 46,904 births and 15,764 marriages, an increase of 3,404 deaths, 7,654 births and 772 marriages over the number reported in 1890. For the first time since the organization of the Health Department, the number of births reported exceeded that of the deaths, notwithstanding the unusually high mortality of the year.

DEATHS.

The actual number of deaths occurring during the year was 43,659, an increase over the previous year of 3,556. This increase of about eight per cent. was probably due to the prevalence of the influenza, which, after causing a few isolated deaths during the remainder of the year 1890, after the subsidence of the severe epidemic of January in that year, gradually increased toward the end of March, 1891, and culminated in an epidemic much more severe than the one of 1889-90, and much more lasting in its effects. I say, probably due, because the deaths directly attributable to influenza were not sufficiently numerous to account alone for this increase, which, although heaviest in diseases of the respiratory organs, was quite generally distributed over the whole list of diseases. This is shown by the following table:

Comparative Table of Deaths by Classes, for 1890 *and* 1891.

CLASS OF DISEASE.	NUMBER OF DEATHS.		COMPARISON	
	1890.	1891.	Increase.	Decrease.
Miasmatic	3,701	5,037	1,336	....
Diarrhœal	3,346	3,587	241	....
Malarial	176	185	9	....
Zoögenous	5	1	....	4
Venereal	161	105	....	56
Septic	366	425	59	....
Other Zymotic	1	3	2	....
Parasitic	24	25	1	....
Dietetic	279	290	11	....
Constitutional	7,735	7,404	....	331
Developmental	1,689	1,801	112	....
Nervous	3,210	3,342	132	....
Eye and Ear	60	63	3	....
Circulatory	2,139	2,454	315	....
Respiratory	8,353	9,283	930	...
Digestive	2,549	2,741	192	....
Lymphatic	18	20	2	....
Urinary	2,592	2,696	104	....
Generative	164	188	24	....
Puerperal	175	171	....	4
Locomotory	114	108	....	6
Integumentary	96	128	32	....
Accidents	1,449	1,597	148	....
Homicide	61	56	....	5
Suicide	239	300	61	....
Ill-defined*	1,401	1,649	248	....
	40,103	43,659	3,962	406

* Includes inanition, atrophy, malnutrition, marasmus, etc.

The decrease of 331 in the deaths from constitutional diseases was due to the decrease in deaths from phthisis, as will be seen from the next table, in which are compared the deaths in 1890 and 1891 from particular diseases, comprising about 88 per cent. of the whole number of deaths.

Comparative Table of Deaths in 1890 *and* 1891 *from Particular Diseases.*

CAUSE OF DEATH.	1890.	1891.	INCREASE.	DECREASE
Measles	730	663	....	67
Scarlet fever	408	1,220	812	....
Diphtheria	1,262	1,361	99	....
Whooping-cough	487	352	....	135
Typhoid fever	352	384	32	....
Influenza	314	854	540	....
Diarrhoeal diseases	3,346	3,587	241	....
Cancer	954	902	....	52
Tubercular meningitis	598	614	16	....
Phthisis	5,492	5,160	....	332
Premature birth	744	799	55	....
Old age	571	515	....	56
Meningitis	856	932	76	....
Apoplexy	931	960	29	....
Convulsions	493	494	1	....

CAUSE OF DEATH.	1890.	1891.	INCREASE.	DECREASE.
Heart disease	1,978	2,285	307	....
Croup	521	609	88	....
Bronchitis	1,987	1,836	....	151
Pneumonia	4,989	5,818	829	....
Chronic bronchitis	302	447	145	....
Disease of digestive organs	2,549	2,741	192	....
Acute nephritis	386	385	....	1
Bright's disease	2,021	2,116	92	....
Accident	1,419	1,597	148	....
Suicide	239	300	61	....
Marasmus, atrophy, etc.	1,280	1,530	250	....
Total	35,242	38,461	4,013	794

This table comprises all of the diseases that caused 300 or more deaths during the year. It accounts for 3,219 deaths out of the total excess of 3,556 for 1891 over 1890, curiously enough about 88 per cent. of that total, leaving 12 per cent. of the increase to be distributed over the remaining 12 per cent. of causes of death.

AGES.

The deaths of children under five years of age numbered 18,224, against 16,305 in 1890 and 17,152 in 1889, so that of the total increase of 3,556 deaths for the year, 1,919, or more than half, were caused by the increased mortality among children. To a considerable extent this was due to the increased prevalence of the exanthemata, but the children also suffered severely from epidemic influenza, as will be made to appear subsequently.

It is noticeable that the children and youth who passed almost unaffected through the epidemic of 1890 gave way before it in 1891, while persons in the prime of life, who suffered most severely in 1890, showed no increased susceptibility to the disease. This is made evident in the following table.

Comparative Mortality by Age and Sex in 1889, 1890 *and* 1891.

YEAR.	UNDER 5 YEARS.		5 AND UNDER 25 YEARS.		25 AND UNDER 45 YEARS.		45 AND UNDER 65 YEARS.		65 YEARS AND OVER.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1889	9,165	7,987	2,135	2,155	4,555	3,371	3,692	2,879	1,742	1,998
1890	8,659	7,646	2,015	1,954	4,947	3,699	3,935	3,197	1,879	2,172
1891	9,732	8,492	2,309	2,288	4,977	3,799	4,014	3,427	2,072	2,549

This comparison brings out very clearly the fact that in 1890 the epidemic fell most heavily on persons between 25 and 65 years of age, those under 25 being apparently unaffected, while in 1891 the mortality of persons between 25 and 65 varied little from that of 1890, and there was a marked increase of mortality at ages above and below those figures.

INFLUENZA.

The influenza, which made such havoc in January, 1890, paid another visit in April, 1891, with results still more disastrous. Its presence was first indicated during the week ending March 28, by the increased number of deaths, and by the report of ten deaths due to influenza.

The course of the epidemic, as indicated by the daily reports of deaths, is shown in the following table:

Deaths Reported Daily during the Epidemic of Influenza in 1891.

DATE	DEATHS REPORTED.	DEATHS FOR WEEK.	DATE.	DEATHS REPORTED.	DEATHS FOR WEEK.
Week ending March 21	....	840	April 19	183	
March 22	125		" 20	136	
" 23	116		" 21	251	
" 24	143		" 22	165	
" 25	133		" 23	144	
" 26	151		" 24	149	
" 27	105		" 25	180	
" 28	121				1,208
" 29	175	895	" 26	128	
" 30	122		" 27	121	
" 31	146		" 28	150	
April 1	200		" 29	127	
" 2	168		" 30	191	
" 3	146		May 1	129	
" 4	143		" 2	115	
		1,100			961
" 5	150		" 3	120	
" 6	142		" 4	116	
" 7	195		" 5	171	
" 8	178		" 6	125	
" 9	206		" 7	126	
" 10	171		" 8	120	
" 11	174		" 9	132	
		1,216			910
" 12	185		" 10	142	
" 13	153		" 11	126	
" 14	215		" 12	142	
" 15	203		" 13	146	
" 16	227		" 14	103	
" 17	183		" 15	124	
" 18	181		" 16	90	
		1,347			873

The rise, culmination and decline of the epidemic were much more protracted than in 1890. The latter epidemic was fierce in its onset, reached its highest point in the second week, and in six weeks was virtually over, while that of 1891 was four weeks in reaching its culmination, and dragged along for four or five weeks more before its energy could be said to be exhausted. This appears clearly from the following table:

Comparison of the Number of Deaths Reported Weekly during the Epidemics of Influenza in 1890 *and* 1891.

1889-1890.

WEEK ENDING	NUMBER OF DEATHS REPORTED.	DEATHS FROM INFLUENZA.	WEEK ENDING	NUMBER OF DEATHS REPORTED.	DEATHS FROM INFLUENZA.
December 28	762	..	January 25	872	52
January 4	1,202	19	February 1	782	18
" 11	1,424	93	" 8	765	11
" 18	1,151	88			

1891.

WEEK ENDING	NUMBER OF DEATHS REPORTED.	DEATHS FROM INFLUENZA.	WEEK ENDING	NUMBER OF DEATHS REPORTED.	DEATHS FROM INFLUENZA.
March 7	735	....	April 25	1,208	136
" 14	813	....	May 2	961	72
" 21	840	....	" 9	910	44
" 28	895	10	" 16	873	28
April 4	1,100	48	" 23	777	25
" 11	1,216	108	" 30	799	13
" 18	1,347	179			

The number of deaths reported in any one week during the epidemic of 1891 was not as large as in that of 1890, but the slower course of the disease resulted in a greater mortality. The deaths attributed to influenza alone, or to bronchitis or pneumonia as its sequelæ, were 854 in 1891, against 314 in 1890, while the total number of deaths during the months when the disease was most destructive was only 4,745 in January, 1890, against 5,048 in April, 1891.

In 1890, after the epidemic was over, the general mortality decreased as compared with 1889, so that, although at the end of January there had been already an excess of 1,370 deaths, the diminished mortality for the remainder of the year reduced this number to only 424. In 1891, on the other hand, April closed with an excess of 960 deaths since the beginning of the year, as compared with 1890, and May, with an excess of 1,464, and this increase was not only maintained, but added to, until the year closed with an excess of 3,556.

Moreover, the excess of deaths in January, 1890, was more than accounted for by the excess in the deaths from bronchitis, pneumonia, phthisis and influenza, showing that aside from those four causes, the mortality was less than usual, while in April, 1891, the deaths from those four causes account for only two-thirds of the total excess for the month, showing that the mortality from other causes was largely in excess of the normal rate. This will appear from the following table:

CAUSE OF DEATH.	NUMBER OF DEATHS.		CAUSE OF DEATH.	NUMBER OF DEATHS.	
	January, 1889.	January, 1890.		April, 1890.	April, 1891
Bronchitis	182	391	Bronchitis	201	333
Pneumonia	405	1,111	Pneumonia	465	1,112
Phthisis	445	797	Phthisis	418	508
Influenza	....	264	Influenza	3	507
Total	1,032	2,563	Total	1,087	2,460

Total excess of deaths in January, 1890	1,370
Total excess of deaths from said four causes	1,531
Total excess of deaths in April, 1891	1,818
Total excess of deaths from said four causes	1,373

In 1890, the deaths from phthisis were increased considerably above the normal rate during the epidemic of influenza, there having been 797 deaths in January attributed to that disease against a January average for ten years previous of only 457. But in 1891 only a slight increase was noted in the deaths from phthisis, the total for the year being less than for any year since 1880. The following table may be compared with a similar one in the annual report of 1890.

Deaths in April.

YEAR.	BRONCHITIS.	PNEUMONIA.	PHTHISIS.
1881	159	393	484
1882	152	393	491
1883	174	472	493
1884	137	304	447
1885	163	512	475
1886	127	374	511
1887	180	466	504
1888	181	426	520
1889	159	508	426
1890	201	465	418
Average for ten years	163	431	477
Corrected, for increase of population (average population, 1,430,934)	183	483	535
1891	333	1,112	508

With regard to the ages of those who died during the height of the epidemic, the following table is of interest:

Comparison of Deaths by Age and Sex in April, 1890 *and* 1891.

YEAR.	UNDER 5 YEARS.		5 AND UNDER 25 YEARS		25 AND UNDER 45 YEARS.		45 AND UNDER 65 YEARS.		65 YEARS AND OVER.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
1890	692	618	176	117	384	296	315	278	209	183
1891	961	828	221	256	578	441	493	470	397	526

It will be seen that the mortality was increased at all ages, but especially in females of 65 years of age and upwards, upon whom the force of the epidemic seems to have fallen with crushing effect.

Toward the end of the year there was a return of the influenza, but, although this third epidemic appears to have been severe in neighboring towns, the visitation in this city must be considered a light one. Its course up to the close of the last week of the year is shown in the following table:

DATE.	DEATHS REPORTED.	TOTAL FOR WEEK.	DEATHS FROM INFLUENZA.	DATE.	DEATHS REPORTED.	TOTAL FOR WEEK.	DEATHS FROM INFLUENZA.
December 6....	104			December 20..	103		
" 7....	82			" 21..	110		
" 8....	109			" 22..	127		
" 9....	117			" 23..	144		
" 10....	115			" 24..	150		
" 11....	103			" 25..	156		
" 12....	104			" 26..	99		
		734	3			889	38
" 13....	122			" 27..	150		
" 14....	93			" 28..	97		
" 15....	133			" 29..	177		
" 16....	113			" 30..	160		
" 17....	126			" 31..	170		
" 18....	98			January 1.....	107		
" 19....	115			" 2.....	108		
		800	7			969	86

The following week marked the culmination of the epidemic with 972 deaths, including 89 from influenza. But the death-rate has remained steadily high, as it did throughout the year 1891.

INFECTIOUS AND CONTAGIOUS DISEASES.

There was an increase in the prevalence of these diseases as a whole, the deaths from diphtheria, scarlet fever and measles, the most common ones, having been respectively 1,361, 1,220 and 663 against 1,262, 408 and 730 for 1890, a total of 3,244 as compared with 2,400, the increase of 844 being due, as will be seen, almost entirely to the increase of scarlet fever. The tendency of this disease to become more prevalent at stated periods, has thus again manifested itself, the years of greatest prevalence since 1870, having been 1870, 1873, 1879, 1882, 1888 and 1891, showing intervals of 3, 6, 3, 6 and 3 years.

OTHER CAUSES.

Among the more uncommon causes of death during the year were one from hydrophobia and two by the electric current. Two persons broke their necks while diving and one in turning a somersault.

The suicides numbered 300, of whom 239 were males and 61 females. The Germans, as usual, led the list, furnishing 106 out of the total of 300, while there were 9 of German parentage, making 115 of German blood. Next on the list were natives of the United States, 84 of whom committed suicide, though only 30 of these were of native parentage. Third on the list come the Irish born, but the suicides of Irish parentage were 40 in number.

The most common means of suicide was the firearm, 104 persons, or more than one-third of the whole, having chosen this way of leaving the world. Hanging caused 50 deaths and poison 88.

NATIVITY.

Of the total of 43,659 persons who died during the year, 27,300 were natives of the United States, 6,860 natives of Ireland, and 4,311 natives of Germany. On the other hand, only 7,883 were of native parentage, while 11,453 were of Irish parentage, and 7,594 of German. These proportions do not differ much from those of 1890. But an indication of the great increase in the number of Russian Jews in the city lies in the fact that 515 natives of Russia died during the year, against 341 in 1890, an increase of almost exactly 50 per cent.

Pneumonia caused the greatest number of deaths among natives of the United States or of native parentage, while among those of Irish and German nativity or parentage the most fatal disease was phthisis. The deaths from cirrhosis of the liver and hepatitis, usually attributed to intemperate habits, numbered only 45 among persons of native parentage, against 380 of foreign parentage, including 109 of German and 166 of Irish parentage.

DEATHS IN INSTITUTIONS.

Of the 9,377 deaths in institutions, 4,015 were natives of the United States, 2,138 of Ireland, and 1,196 of Germany, while 1,080 were of native parentage, 2,828 of Irish parentage, and 1,221 of German.

BIRTHS AND MARRIAGES.

The total number of births reported during the year was 46,904, the increase of 7,654 over the number reported in 1890 being due to the vigor and persistence with which delinquent physicians and midwives were followed up. A search of the records early in the year brought to light several hundred deaths of children under six months of age, whose birth had not been reported to the Health Department, as required by law. The prosecutions in these cases began late in the month of June, and the effect was immediately perceptible in the reports of births, which rose suddenly from 697 in the week ending June 27, to 1,288 in the week ending July 4.

The births reported during the first half of the year numbered 20,389, and during the last half 26,515. Even the latter number, representing a total of 53,000 in a year, probably does not represent the true total, although it gives a birth-rate of about 31 in a 1,000.

The records of marriages, it is believed, are now more complete than of the births. There were 15,764 marriages reported during the year, giving a marriage-rate of 18.75, which is much higher than that of any country in Europe, although the birth-rate is lower than in most of them. In every European country excepting France, the birth-rate is considerably more than twice the marriage-rate. If we suppose the rate to be only double in this city, the annual number of births should be at least 63,000.

Among matters of interest in the table of births may be mentioned the report of 1,104 illegitimate, 361 pairs of twins, and one set of triplets.

In the table of marriages it is worthy of notice that one man under 35 years of age took unto himself a bride who was over 80, and one young woman of 20 also married an octogenarian. 5 colored men during the year married white wives.

SEARCHES AND TRANSCRIPTS.

The work of the searcher has increased materially when compared with previous years. The number of searches made and transcripts issued during the year 1891 were 12,638 and 9,804, respectively, against 10,709 and 8,558 during 1890, an increase of 14 to 18 per cent.

Respectfully submitted,

ROGER S. TRACY, M. D., Register of Records.

March 21, 1892.

REPORT OF VITAL STATISTICS.

YEAR ENDING DECEMBER 31, 1891.	CERTIFICATES RECEIVED AND TABULATED.	INCREASE OVER PREVIOUS YEAR.	DECREASE FROM PREVIOUS YEAR.	RATE PER 1,000, POPULATION ESTIMATED AT 1,680,796.	BURIAL PERMITS ISSUED.	TRANSIT PERMITS ISSUED.	CORONERS' CASES.	SEARCHES MADE.	TRANSCRIPTS ISSUED.	INDEXED.
Marriages	15,764	772	....	9.38	....	....	....	2,145	1,040	15,764
Births	46,904	7,654	....	27.91	....	....	....	1,722	926	46,904
Deaths	43,634	3,404	....	25.96	43,634	745	4,825	8,771	7,858	43,634
Still-births	3,414	99	....	2.03	3,414	....		....	....	3,414

Particulars Regarding Births, Deaths, Marriages and Still-births Reported during Year ending December 31, 1891.

	TOTAL.	WHITE.		COLORED.		NATIVE PARENTS.		FOREIGN PARENTS.		PARENTAGE OF MIXED NATIVITY.		PARENTAGE UNKNOWN OR NOT STATED.		SINGLE.		MARRIED.		WIDOWED.		NOT STATED.		NON-RESIDENTS.	The Returns of Births, Marriages and Still-births are Incomplete.										
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		MONTH OF UTERO-GESTATION.										
																							1	2	3	4	5	6	7	8	9	10	Not Stated.
Marriages....	15,764	15,480	15,485	284	279	....	....	....	....	....	....	....	....	13,877	14,084	.....	.....	1,887	1,680	....	....	..											
Births.....	46,904	23,719	22,612	274	299	6,078	5,774	13,698	13,139	3,689	3,494	528	504	.....	.....	.....	.....	....	....	....	....	....											
Deaths.....	43,634	22,606	20,053	485	490	4,062	3,798	14,586	13,020	2,666	2,492	1,777	1,233	14,792	11,693	6,087	5,027	1,865	3,726	347	97	649	..	7	69	142	264	422	487	507	1,508	6	2
Still-births*..	3,414	1,908	1,359	41	46	490	366	1,052	757	253	159	156	123	.....	.....	....	....	....	....	....	....	....											

* 18, sex not stated; 2, color not stated.

Places where Deaths Occurred during Year 1891 (*Actual Number of Deaths*).

Institutions	9,377	Hotels and boarding-houses	503
Tenement-houses, three families or more	28,215	Elsewhere	710
Dwellings, with less than three families	4,854	Total	43,659

Deaths of Males, by Age and Cause of Death, Year ending December 31, 1891, *with Total of both Sexes.*

CAUSE OF DEATH.	TOTAL OF BOTH SEXES.	ALL AGES.	0	1	2	3	4	TOTAL UNDER 5.	5	10	15	20	25	35	45	55	65	75	85	Colored.
I.—SPECIFIC FEBRILE (ZYMOTIC) DISEASES.																				
Miasmatic.																				
Small-pox	2	2	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..
Chicken-pox	6	3	2	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	..	..
Measles	663	316	82	116	42	28	25	293	18	..	2	1	2	..	..	..	..	..	..	2
Scarlet fever	1,220	616	40	105	133	116	70	464	120	16	4	7	4	1	..	..	..	..	..	3
Diphtheria	1,361	691	63	148	145	115	78	552	117	7	2	4	4	3	1	1	..	..	..	5
Mumps	5	2	1	..	..	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..
Whooping-cough	352	168	95	42	16	8	4	165	3	..	..	..	..	..	..	..	..	..	..	6
Fever, typhoid	384	221	1	3	1	5	3	13	12	9	30	45	47	35	15	4	9	2	..	4
Fever, typhus	1	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Influenza	854	396	25	16	3	1	3	48	8	4	5	20	54	53	63	46	59	26	10	10
Fever, cerebro-spinal	189	98	27	14	18	6	4	69	12	6	1	2	..	4	1	3	..	..	..	..
Total miasmatic diseases	5,037	2,514	339	444	358	279	188	1,608	290	42	44	79	113	98	80	54	68	28	10	30

CAUSE OF DEATH.	TOTAL OF BOTH SEXES.	ALL AGES.	0	1	2	3	4	TOTAL UNDER 5.	5	10	15	20	25	35	45	55	65	75	85	Colored.
Diarrhœal.																				
Cholera morbus	64	20	1	2	..	..	..	3	1	..	..	2	1	4	3	4	1	1	..	1
Cholera infantum	1,524	806	694	103	5	1	..	803	3	..	..	..	..	..	..	..	..	..	..	23
Diarrhœa, enterocolitis	1,850	920	678	107	15	3	2	805	7	1	4	4	14	13	15	18	15	17	7	19
Dysentery	149	87	35	12	..	1	..	48	4	..	..	1	5	4	10	5	6	4	..	3
Total diarrhœal diseases	3,587	1,833	1,408	224	20	5	2	1,639	15	1	4	7	20	21	28	27	22	22	7	46
Malarial fevers	185	89	12	9	8	5	2	36	3	2	..	5	11	8	8	8	5	3	..	1
Zoogenous.																				
Hydrophobia	1	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Total zoögenous diseases	1	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Syphilis	105	63	45	4	..	..	..	49	..	..	1	1	6	4	1	1	..	..	..	..
Spic.																				
Erysipelas	162	84	44	2	2	..	..	48	..	..	..	2	7	8	7	6	4	2	..	1
Pyæmia, septicæmia	14	7	2	..	..	..	..	2	..	1	..	..	2	..	1	1	..	..	..	..
Puerperal fever	249	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total septic diseases	425	91	46	2	2	..	..	50	..	1	..	2	9	8	8	7	4	2	..	1
Other zymotic diseases	3	2	..	1	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..
Total zymotic diseases	9,343	4,593	1,850	684	388	289	192	3,403	308	46	49	94	160	140	125	97	99	55	17	78
II.—PARASITIC DISEASES.																				
Aphthæ (thrush)	19	10	9	1	..	..	..	10	..	..	..	..	..	..	..	..	..	..	..	..
Trichinosis	3	2	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..
Other parasitic diseases	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total parasitic diseases	25	12	9	1	..	..	..	10	..	..	..	..	2	..	..	..	..	..	..	..
III.—DIETETIC DISEASES.																				
Starvation, want of breast milk	13	6	5	..	..	..	..	5	..	..	..	..	..	1	..	..	..	..	..	..
Scurvy	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Intemperance—Alcoholism	275	199	..	..	..	..	1	1	..	..	1	5	67	65	45	12	3	..	..	..
Total dietetic diseases	290	205	5	..	..	..	1	6	..	..	1	5	67	66	45	12	3	..	..	..
IV.—CONSTITUTIONAL DISEASES.																				
Acute rheumatism (rheumatism of the heart)	147	55	2	..	2	..	..	4	2	1	1	2	8	7	4	9	9	7	1	2
Gout	8	6	..	..	..	..	..	..	..	..	..	..	1	1	3	1	..	..	..	..
Rickets	29	12	6	4	2	..	..	12	..	..	..	..	..	..	..	..	..	..	..	..
Cancer	902	318	1	1	1	..	..	3	2	2	..	2	18	52	88	84	51	12	4	5
Tabes mesenterica	39	23	16	3	1	1	..	21	1	..	..	..	1	..	..	..	..	..	..	1
Tubercular meningitis	614	319	118	88	26	19	12	263	24	8	3	5	8	1	6	..	1	..	..	11
Phthisis	5,160	2,994	27	15	7	7	5	61	13	17	133	356	909	726	451	189	113	22	4	97
Other forms of tuberculosis, scrofula	240	137	30	21	4	3	3	61	5	5	5	11	24	14	7	3	2	..	..	5
Purpura, hæmophilia	19	12	5	..	..	..	..	5	1	1	..	..	1	1	1	2	..	..	..	..
Anæmia, chlorosis, leucocythæmia	58	25	2	3	..	1	1	7	1	..	..	1	3	2	4	4	3	..	..	..
Diabetes	130	64	..	..	..	..	..	..	..	..	2	2	4	4	17	15	15	4	1	1
Other constitutional diseases	58	31	5	2	..	..	1	8	1	..	3	2	1	12	3	1	..	..	..	..
Total constitutional diseases	7,404	3,996	212	137	43	31	22	445	50	34	147	381	978	820	584	308	194	45	10	122
V.—DEVELOPMENTAL DISEASES.																				
Premature birth	799	436	436	..	..	..	..	436	..	..	..	..	..	..	..	..	..	..	..	5
Atelectasis	204	121	121	..	..	..	..	121	..	..	..	..	..	..	..	..	..	..	..	3
Cyanosis	98	64	64	..	..	..	..	64	..	..	..	..	..	..	..	..	..	..	..	1
Umbilical hæmorrhage	20	13	13	..	..	..	..	13	..	..	..	..	..	..	..	..	..	..	..	3
Spina bifida	42	26	26	..	..	..	..	26	..	..	..	..	..	..	..	..	..	..	..	1
Imperforate anus	8	7	7	..	..	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..
Cleft palate, hare lip	7	3	3	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..
Other congenital defects	108	56	52	1	..	..	3	56	..	..	..	..	..	1	..	13	57	79	45	3
Old age	515	195	..	..	..	..	..	..	..	..	..	..	..	1	..	13	57	79	45	16
Total developmental diseases	1,801	921	722	1	..	..	3	726	..	..	..	..	..	1	..	13	57	79	45	16
VI.—LOCAL DISEASES.																				
Diseases of Nervous System.																				
Meningitis, encephalitis	932	487	168	98	36	23	12	337	25	9	9	7	32	24	16	23	4	1	..	9
Chronic hydrocephalus	42	25	13	6	3	2	1	25	..	..	..	..	..	..	..	..	..	..	..	2
Apoplexy	960	475	8	..	2	..	1	11	1	..	2	2	31	51	96	133	95	42	11	11
Softening of brain	75	42	1	..	..	..	..	1	..	..	..	1	2	5	2	11	9	8	3	..
Hemiplegia, brain paralysis	176	79	..	..	..	..	..	..	..	..	..	2	..	7	18	20	18	13	1	4
Insanity, general paresis	219	142	..	..	..	..	..	..	..	..	..	..	22	46	42	16	11	1	4	..
Epilepsy	105	58	11	6	4	3	1	25	3	1	5	1	8	8	4	1	2	..	..	2
Convulsions	494	276	215	44	7	5	1	272	3	..	..	..	1	..	..	..	..	..	..	6
Congestion of brain	113	61	37	10	2	3	2	54	1	..	1	..	1	..	2	..	1	1	..	..
Laryngismus stridulus	11	6	2	1	..	1	..	4	..	1	..	..	..	1	..	..	..	..	..	1
Idiopathic tetanus, trismus	48	31	24	..	..	..	1	25	..	..	1	1	1	2	..	..	1	..	..	..
Paraplegia, myelitis	65	37	..	2	..	..	..	2	..	..	..	2	6	8	7	7	4	1	..	..
Locomotor ataxy	23	16	..	..	..	..	..	..	..	..	..	..	1	5	4	5	1	..	..	..
Other diseases of nervous system	79	34	1	..	..	1	..	2	2	..	1	2	4	2	6	5	6	2	2	..
Total diseases of nervous system	3,342	1,769	480	167	54	38	19	758	35	11	19	18	109	159	197	221	152	69	21	35

CAUSE OF DEATH.	TOTAL OF BOTH SEXES.	ALL AGES.	0	1	2	3	4	TOTAL UNDER 5.	5	10	15	20	25	35	45	55	65	75	85	Colored.
Diseases of Organs of Special Sense.																				
Otitis, otorrhœa, mastoid abscess	59	31	7	2	2	2	..	13	1	..	2	1	8	3	1	2	..	..	..	..
Other diseases of eye, ear and nose	4	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Total diseases of organs of special sense	63	32	7	2	2	2	..	13	1	..	2	1	9	3	1	2	..	..	..	..
Diseases of Circulatory System.																				
Endocarditis, valvular disease of heart	1,526	754	12	2	1	2	2	19	19	24	39	43	79	118	124	143	111	29	6	25
Pericarditis	92	48	..	1	1	..	..	2	..	2	4	1	13	8	4	8	3	3	..	1
Hypertrophy of heart	98	52	..	..	..	1	..	1	..	1	1	1	4	..	10	17	12	5	..	..
Fatty degeneration of heart	213	97	..	..	..	..	..	..	..	..	..	..	5	6	20	36	25	5	..	1
Heart disease	305	167	2	3	..	..	2	7	2	5	3	1	22	17	32	38	33	5	2	3
Angina pectoris	51	27	1	..	..	..	..	1	..	..	..	..	..	4	4	5	9	3	1	..
Aneurism	49	30	..	..	..	..	..	..	1	..	..	..	4	7	17	1	..	..	..	7
Senile gangrene	29	6	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	1	2	..
Embolism, thrombosis	56	24	..	..	..	..	..	..	1	..	..	..	2	4	7	5	2	3	..	1
Phlebitis	10	3	1	..	..	..	..	1	..	..	..	1	..	..	..	1	..	..	..	..
Other diseases of circulatory system	26	9	1	..	..	..	..	1	..	..	..	..	..	..	3	4	1	..	..	1
Total diseases of circulatory system	2,454	1,217	17	6	2	3	4	32	23	32	47	47	129	164	221	260	197	54	11	39
Diseases of Respiratory System.																				
Croup	609	326	45	84	65	38	33	285	38	1	..	..	..	1	1	..	..	..	..	1
Laryngitis	83	46	8	14	3	5	4	34	3	..	..	..	4	3	..	1	1	..	..	..
Other diseases of larynx and trachea	9	6	1	1	..	..	..	2	..	..	1	..	1	..	1	..	..	1	..	..
Emphysema, asthma	69	36	..	..	..	..	..	..	..	..	..	1	4	..	10	8	7	5	1	1
Bronchitis	1,836	924	494	147	36	12	11	700	13	2	3	5	20	26	33	41	40	31	10	23
Chronic bronchitis	447	195	14	8	..	1	..	23	..	1	2	4	16	8	26	39	48	23	5	2
Pneumonia	5,818	3,258	739	384	160	90	37	1,410	99	22	58	124	349	370	330	222	175	83	16	66
Pleurisy	149	83	5	2	2	..	..	9	1	..	3	8	19	12	16	8	5	2	..	1
Hydrothorax, empyema	60	39	4	8	3	2	..	17	1	..	1	1	6	4	6	2	1	..	..	..
Congestion of lungs	110	56	21	3	..	..	..	24	3	1	1	..	3	6	5	6	4	3	..	1
Hæmorrhage of lungs	31	23	2	..	..	..	..	2	..	..	..	3	5	5	6	1	1	..	..	2
Other diseases of respiratory system	62	35	4	1	..	1	..	6	..	..	..	2	8	3	5	3	6	1	1	..
Total diseases of respiratory system	9,283	5,027	1,337	652	270	170	83	2,512	158	27	69	148	435	438	439	331	288	149	33	97
Diseases of Digestive System.																				
Stomatitis	21	10	8	2	..	..	..	10	..	..	..	..	..	..	..	..	..	..	..	..
Dentition	151	85	56	24	5	..	..	85	..	..	..	..	..	..	..	..	..	..	..	3
Tonsilitis, quinsy	17	9	1	..	1	1	1	4	2	..	..	..	..	..	2	1	..	..	..	..
Gastritis	217	84	25	6	1	1	1	34	2	1	..	1	5	12	12	7	5	5	..	2
Gastro-enteritis	752	404	298	52	10	6	..	366	3	..	1	5	5	5	4	5	4	4	2	7
Ulcer of stomach	49	20	1	..	1	..	..	2	..	..	1	..	1	2	9	1	3	1	..	1
Enteritis	190	102	71	11	3	1	1	87	2	..	2	1	1	1	1	1	3	2	1	3
Ulcer of intestine, chronic diarrhœa	100	49	7	6	1	..	..	14	..	..	1	..	1	5	3	10	10	4	1	..
Ileus, obstruction of intestine	90	40	12	2	..	..	1	15	..	2	1	2	5	3	6	2	4	..	..	..
Stricture or strangulation of intestine	11	7	4	..	1	..	..	5	..	..	1	..	..	1	..	..	..	..	..	..
Typhlitis, perityphlitis, per. vermiform appendix	83	52	..	..	..	..	1	1	3	8	6	7	10	8	6	..	3	..	..	1
Hernia	108	46	2	1	3	..	..	6	..	..	..	1	5	8	10	5	8	3	.	2
Peritonitis	251	108	18	1	1	2	..	22	6	13	8	10	16	8	15	6	3	1	..	2
Hepatitis	92	52	2	..	..	..	..	2	..	..	2	1	11	9	12	6	9	..	..	..
Cirrhosis	333	199	1	..	..	..	..	1	..	1	..	3	25	54	46	42	23	4	..	1
Jaundice	36	21	15	..	..	..	..	15	..	1	..	..	1	2	..	1	..	1	..	..
Gall-stones, biliary colic, etc	19	6	..	..	..	..	..	..	..	..	..	1	2	..	1	2	..	..	..	..
Other diseases of liver	47	25	..	..	..	1	..	1	..	1	..	..	3	6	8	5	1	..	..	..
Other diseases of digestive system	174	92	33	9	3	2	..	47	4	..	3	..	11	5	9	7	4	2	..	2
Total diseases of digestive system	2,741	1,411	554	114	30	14	5	717	22	27	26	32	102	129	144	101	80	27	4	24
Diseases of Lymphatic System and Ductless Glands.																				
Lymphadenoma (Hodgkin's disease)	4	4	..	..	..	..	..	..	..	..	..	1	2	1	..	..	..	..	..	..
Exophthalmic goitre (Basedow's disease)	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Addison's disease	5	2	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..
Other diseases of lymphatic system	9	5	2	1	..	..	..	3	..	..	1	..	..	..	1	..	..	..	..	..
Total diseases of lymphatic system	20	11	2	1	..	..	..	3	..	..	1	3	2	1	1	..	..	..	..	..
Diseases of Urinary System.																				
Acute nephritis	385	212	15	9	8	..	6	38	18	3	5	7	30	32	27	22	20	9	1	3
Bright's disease, albuminuria	2,116	1,153	5	2	6	2	4	19	6	8	13	36	128	260	236	232	160	51	4	29
Uræmia, suppression of urine	54	23	3	5	1	..	..	9	..	..	..	..	5	..	5	2	1	1	..	1
Calculus	27	20	2	..	..	..	..	2	2	..	..	2	1	..	3	5	4	1	..	..
Diseases of bladder and prostate gland	90	71	1	..	..	..	..	1	1	..	..	1	..	1	3	14	24	22	4	..
Other diseases of urinary system	24	16	2	..	..	..	..	2	1	..	..	..	3	3	2	3	1	1	..	1
Total diseases of urinary system	2,696	1,495	28	16	15	2	10	71	28	11	18	46	167	296	276	278	210	85	9	34
Diseases of Organs of Generation.																				
Ovarian diseases	48	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diseases of uterus and vagina	93	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pelvic abscess	17	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Perineal abscess	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diseases of penis, testes, scrotum, etc	29	14	2	..	..	..	..	2	..	..	..	..	5	1	5	1	..	..	..	3
Total diseases of organs of generation	188	14	2	..	..	..	..	2	..	..	..	..	5	1	5	1	..	..	..	3

CAUSE OF DEATH.	TOTAL OF BOTH SEXES.	ALL AGES.	0	1	2	3	4	TOTAL UNDER 5.	5	10	15	20	25	35	45	55	65	75	85	Colored.
Diseases of Parturition.																				
Abortion, miscarriage	48	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal convulsions	55	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal mania	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Placenta prævia, flooding	24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Post-partum hæmorrhage	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other diseases of parturition	32	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total diseases of parturition	171	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diseases of Organs of Locomotion.																				
Caries, necrosis	15	8	..	..	..	..	..	..	1	2	1	2	1	1	..	..	..	..	..	..
Arthritis, osteitis, periostitis	21	18	2	..	..	1	..	3	3	2	1	..	7	1	..	1	..	..	..	..
Spinal disease	29	14	..	..	..	..	1	1	3	5	1	..	..	1	3	..	..	..	..	..
Hip disease	27	10	2	..	..	..	2	4	5	3	1	1	..	1	..	1	..	..	..	..
Other diseases of locomotor system	16	5	..	..	..	..	..	..	..	..	..	..	1	1	2	1	..	..	..	..
Total diseases of organs of locomotion	108	61	4	..	..	1	3	8	12	12	4	3	9	5	5	3	..	..	..	..
Diseases of the Integumentary System.																				
Carbuncle	13	8	..	..	..	..	..	..	..	..	..	..	1	3	1	1	1	1	..	..
Phlegmon, cellulitis	10	5	..	..	..	..	1	1	..	..	..	..	..	2	..	1	..	1	..	..
Ulcer, bedsore	19	4	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	1	..	..
Eczema	9	3	3	..	..	..	..	3	..	..	..	..	.	..	..	..	..	..	..	..
Pemphigus	5	3	1	..	..	1	..	2	..	..	..	..	..	..	1	..	..	..	..	1
Other diseases of integumentary system	72	37	18	1	..	..	..	19	2	..	2	..	2	4	3	4	1	..	..	1
Total diseases of integumentary system	128	60	22	1	..	1	1	25	2	..	2	..	3	10	6	7	2	3	..	2
Total local diseases	21,194	11,097	2,453	959	373	231	125	4,141	281	120	188	298	970	1,206	1,295	1,204	929	387	78	234
VII.—VIOLENCE.																				
Accident and Negligence.																				
Fractures, contusions	741	583	1	11	16	12	8	48	43	28	31	45	107	103	90	52	30	4	2	10
Wounds	55	47	1	..	..	..	..	1	2	2	1	5	15	7	5	8	..	1	..	1
Cut, stab	5	5	..	..	3	1	..	4	1	..	..	..	..	..	..	..	..	..	..	..
Burn, scald	172	72	..	5	8	3	4	22	1	4	10	3	12	9	3	4	4	..	..	..
Poison	51	36	3	1	1	1	..	6	..	1	2	4	4	8	6	4	..	1	..	1
Drowning	193	180	1	1	1	..	..	3	18	8	10	14	37	56	22	11	1	..	..	1
Suffocation	136	87	31	..	..	..	..	31	..	..	3	10	21	8	8	4	2	..	..	2
Sunstroke	95	78	13	1	..	..	..	14	2	1	3	4	15	19	11	4	5	..	..	1
Surgical operations	133	42	11	4	..	1	..	16	1	1	1	2	3	2	6	5	4	1	..	..
Electric current	2	2	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..
Other forms	15	8	..	..	..	..	..	..	1	..	..	1	3	1	..	1	1	..	..	..
Total accident and negligence	1,597	1,140	61	23	29	20	12	145	69	45	61	90	217	213	151	93	47	7	2	16
Homicide.																				
Blows	14	12	..	..	..	..	..	..	2	..	1	3	2	4	..	..	..	..	..	
Cut, stab	9	6	..	..	..	..	..	..	..	..	..	1	4	1	..	..	..	..	..	..
Gunshot	25	21	..	..	1	.	..	1	..	..	3	5	6	3	3	..	..	..	..	..
Other methods	8	3	2	..	..	..	..	2	..	..	1	..	..	..	..	..	..	..	..	..
Total homicides	56	42	2	..	1	..	..	3	2	..	5	9	12	8	3	..	..	..	..	1
Suicide.																				
Illuminating gas	16	10	..	..	..	..	..	..	..	..	..	1	4	1	3	1	..	..	..	..
Cut, stab	24	20	..	..	..	..	..	..	..	..	..	..	7	3	4	3	3	..	..	..
Drowning	9	8	..	..	..	..	..	..	..	..	..	1	2	..	3	2	..	..	..	..
Gunshot	104	99	..	..	..	..	..	..	..	..	3	9	28	24	22	8	5	..	..	..
Hanging	49	45	..	..	..	..	..	..	..	..	2	1	6	9	14	10	1	2	..	..
Leaps	21	11	..	..	..	..	..	..	..	..	..	2	5	3	..	..	1	..	..	1
Poison	69	39	..	..	..	..	..	..	..	..	2	2	9	12	9	3	2	..	..	..
Other methods	8	7	..	..	..	..	..	..	..	..	1	..	2	1	..	2	1	..	..	..
Total suicides	300	239	..	..	..	..	..	..	..	..	8	16	63	53	55	29	13	2	..	1
Total violence	1,953	1,421	63	23	30	20	12	148	71	45	74	115	292	274	209	122	60	9	2	18
VIII.—ILL-DEFINED OR NOT SPECIFIED CAUSES.																				
Marasmus, inanition	1,530	796	743	35	9	4	..	791	1	1	..	..	..	..	..	..	1	2	..	16
Injury at birth	118	62	62	..	..	..	..	62	..	..	..	..	..	..	..	..	..	..	..	..
Other ill-defined causes	1	1	..	.	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Total ill-defined causes	1,649	859	805	35	9	4	..	853	1	1	..	..	..	1	..	..	1	2	..	16
I.—Specific febrile diseases	9,343	4,593	1,850	684	388	289	192	3,403	308	46	49	91	160	140	125	97	99	55	17	78
II.—Parasitic diseases	25	12	9	1	..	..	..	10	..	..	..	..	2	..	..	..	..	..	..	..
III.—Dietetic diseases	290	205	5	..	..	..	1	6	..	..	1	5	67	66	45	12	3	..	..	..
IV.—Constitutional diseases	7,404	3,996	212	137	43	31	22	445	50	34	147	381	978	820	584	308	194	45	10	122
V.—Developmental diseases	1,801	921	722	1	..	..	3	726	..	..	..	..	..	1	..	13	57	79	45	16
VI.—Local diseases	21,194	11,097	2,453	959	373	231	125	4,141	281	120	188	298	970	1,206	1,295	1,204	929	387	78	234
VII.—Violence	1,953	1,421	63	23	30	20	12	148	71	45	74	115	292	274	209	122	60	9	2	18
VIII.—Ill-defined causes	1,649	859	805	35	9	4	..	853	1	1	..	..	..	1	..	..	1	2	..	16
Total, all causes	43,659	23,104	6,119	1,840	843	575	355	9,732	711	246	459	893	2,469	2,508	2,258	1,756	1,343	577	152	484

Deaths of Females, by Age and Cause of Death, Year ending December 31, 1891.

CAUSE OF DEATH.	ALL AGES.	0	1	2	3	4	TOTAL UNDER 5.	5	10	15	20	25	35	45	55	65	75	85	Colored.
I.—SPECIFIC FEBRILE (ZYMOTIC) DISEASES.																			
Miasmatic.																			
Chicken-pox	3	2	1	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..
Measles	347	94	138	59	26	17	334	12	..	..	..	1	..	..	..	..	..	..	5
Scarlet fever	604	26	95	124	106	72	423	155	10	6	4	4	1	..	..	..	1	..	..
Diphtheria	670	57	130	142	111	64	504	139	9	3	8	3	..	1	2	1	..	..	5
Mumps	3	1	..	..	..	..	1	..	1	..	..	1	..	..	..	..	..	..	..
Whooping-cough	184	96	44	29	6	4	179	4	..	..	..	..	1	..	..	..	..	..	4
Fever, typhoid	163	1	2	5	2	1	11	14	17	23	27	28	20	13	5	3	2	..	4
Influenza	458	18	10	4	5	1	38	5	4	10	10	53	49	47	71	92	55	24	19
Fever, cerebro-spinal	91	17	19	17	4	4	61	9	4	3	3	5	3	1	2	..	..	..	1
Total miasmatic diseases	2,523	312	439	380	260	163	1,554	338	45	45	52	95	74	62	80	96	58	24	38
Diarrhœal.																			
Cholera morbus	44	4	..	1	..	..	5	1	..	..	2	7	2	8	5	11	2	1	..
Cholera infantum	718	593	116	5	1	..	715	3	..	..	..	..	..	..	..	..	..	..	25
Diarrhœa, enterocolitis	930	653	119	9	3	1	785	5	2	2	4	14	22	15	26	28	17	10	9
Dysentery	62	21	5	1	..	..	27	3	..	1	1	2	4	6	8	8	1	1	2
Total diarrhœal diseases	1,754	1,271	240	16	4	1	1,532	12	2	3	7	23	28	29	39	47	20	12	36
Malarial fevers	96	11	17	6	3	5	42	5	1	1	7	9	7	6	7	7	1	3	1
Syphilis	42	23	3	..	..	..	26	..	..	1	..	9	2	2	1	1	..	..	..
Sep tic.																			
Erysipelas	78	38	3	..	..	..	41	..	..	1	2	4	8	7	4	7	4	"	1
Pyæmia, septicæmia	7	2	..	..	..	..	2	..	..	1	2	2	..	..	..	..	..	..	..
Puerperal fever	249	..	..	..	..	..	..	..	..	13	63	128	44	1	..	..	..	..	8
Total septic diseases	334	40	3	..	..	..	43	..	..	15	67	134	52	8	4	7	4	..	9
Other zymotic diseases	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Total zymotic diseases	4,750	1,657	702	401	267	169	3,197	356	48	65	133	270	163	107	131	158	83	39	84
II.—PARASITIC DISEASES.																			
Aphthæ (thrush)	9	9	..	..	..	..	9	..	..	..	..	..	..	..	..	..	..	..	..
Trichinosis	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Other parasitic diseases	3	1	..	..	..	..	1	1	..	..	..	1	..	..	..	..	..	..	..
Total parasitic diseases	13	10	..	..	..	..	10	1	..	..	..	1	1	..	..	..	..	..	..
III.—DIETETIC DISEASES.																			
Starvation, want of breast milk	7	6	..	..	..	..	6	..	..	..	..	..	..	1	..	..	..	..	1
Scurvy	2	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..
Intemperance—Alcoholism	76	..	..	..	..	..	..	..	..	1	9	25	21	12	6	1	1	..	..
Total dietetic diseases	85	6	..	..	..	..	6	..	1	2	9	25	21	13	6	1	1	..	1
IV.—CONSTITUTIONAL DISEASES.																			
Acute rheumatism (rheumatism of the heart)	92	2	1	3	1	1	8	3	4	4	1	13	15	13	14	12	4	1	2
Gout	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..
Rickets	17	6	7	3	1	..	17	..	..	..	..	..	..	..	..	..	..	..	1
Cancer	584	..	..	..	..	..	..	2	2	4	5	34	114	183	123	86	28	3	11
Tabes mesenterica	16	11	4	..	..	..	15	1	..	..	..	..	..	..	..	..	..	..	1
Tubercular meningitis	295	123	75	29	23	11	261	24	3	1	1	2	..	..	1	1	1	..	2
Phthisis	2,166	25	16	9	3	4	57	16	46	148	333	697	419	222	133	75	17	3	88
Other forms of tuberculosis, scrofula	103	35	12	5	3	2	57	7	3	4	6	16	2	4	1	3	..	..	5
Purpura, hæmophilia	7	2	1	..	..	..	3	..	..	..	1	1	1	..	..	..	1	..	..
Anæmia, chlorosis, leucocythæmia	33	5	..	2	..	..	7	2	4	4	1	4	4	2	2	3	..	..	1
Diabetes	66	1	..	..	..	..	1	1	2	1	1	3	7	12	19	15	4	..	2
Other constitutional diseases	27	3	2	1	1	..	7	..	2	3	1	5	5	1	1	2	..	..	1
Total constitutional diseases	3,408	213	118	52	32	18	433	56	66	169	350	775	567	437	294	198	56	7	114
V.—DEVELOPMENTAL DISEASES.																			
Premature birth	363	362	..	1	..	..	363	..	..	..	..	..	..	..	..	..	..	..	9
Atelectasis	83	83	..	..	..	..	83	..	..	..	..	..	..	..	..	..	..	..	4
Cyanosis	34	33	1	..	..	..	34	..	..	..	..	..	..	..	..	..	..	..	..
Umbilical hæmorrhage	7	7	..	..	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..
Spina bifida	16	15	..	..	..	..	15	..	1	..	..	..	..	..	..	..	..	..	1
Imperforate anus	1	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Cleft palate, hare lip	4	4	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..
Other congenital defects	52	49	..	..	1	..	50	1	1	..	..	..	..	..	..	..	..	..	1
Old age	320	..	..	..	..	..	..	..	..	..	..	..	..	1	25	75	125	94	16
Total developmental diseases	880	554	1	1	1	..	557	1	2	..	..	..	..	1	25	75	125	94	31
VI.—LOCAL DISEASES.																			
Diseases of Nervous System.																			
Meningitis, encephalitis	445	163	84	41	12	13	313	33	14	8	7	12	17	10	11	14	5	1	5
Chronic hydrocephalus	17	10	4	2	..	..	16	..	1	..	..	..	..	..	..	..	..	..	..

CAUSE OF DEATH.	ALL AGES.	0	1	2	3	4	TOTAL UNDER 5.	5	10	15	20	25	35	45	55	65	75	85	Colored.
Apoplexy	485	6	2	1	1	..	10	..	1	1	3	16	43	96	145	102	57	11	13
Softening of brain	33	..	..	..	..	..	..	..	..	..	..	4	1	6	6	6	7	3	1
Hemiplegia, brain paralysis	97	4	1	1	..	1	7	..	1	..	..	1	6	13	21	25	16	7	2
Insanity, general paresis	77	..	..	..	..	..	..	..	..	1	6	11	16	10	11	15	5	2	2
Epilepsy	47	4	3	7	..	1	15	3	3	4	5	5	2	4	4	1	1	..	1
Convulsions	218	178	28	8	1	..	215	2	..	..	..	..	..	..	..	1	.	..	5
Congestion of brain	52	22	15	5	1	..	43	1	..	..	..	3	2	1	2	..	..	..	..
Laryngismus stridulus	5	3	..	..	..	..	3	..	..	..	..	..	1	..	..	1	..	..	..
Idiopathic tetanus, trismus	17	16	..	..	..	..	16	..	..	..	..	1	..	..	..	..	..	..	..
Paraplegia, myelitis	28	1	1	..	..	..	2	..	..	..	1	7	7	3	4	3	1	..	1
Locomotor ataxy	7	..	..	..	..	..	..	..	..	..	..	..	1	4	2	..	..	..	..
Other diseases of nervous system,	45	..	1	..	..	..	1	1	..	3	2	5	10	5	8	7	1	2	..
Total diseases of nervous system	1,573	407	139	65	15	15	641	40	20	17	24	63	107	152	211	179	93	26	30
Diseases of Organs of Special Sense.																			
Otitis, otorrhœa, mastoid abscess	28	9	3	1	2	2	17	2	1	1	3	3	..	1	..	..	..	..	..
Other diseases of eye, ear and nose	3	2	..	..	..	1	3	..	..	..	..	..	..	..	..	..	..	..	1
Total diseases of organs of special sense	31	11	3	1	2	3	20	2	1	1	3	3	..	1	..	..	..	..	1
Diseases of Circulatory System.																			
Endocarditis, valvular disease of heart	772	12	..	..	1	5	18	23	34	34	32	91	106	114	157	112	42	9	25
Pericarditis	43	1	..	1	2	..	4	5	4	4	3	3	5	6	1	5	2	1	1
Hypertrophy of heart	46	..	..	..	..	..	..	..	2	..	2	4	3	7	11	10	7	..	1
Fatty degeneration of heart	116	..	..	..	..	..	..	..	..	..	2	9	11	20	31	31	12	..	3
Heart disease	138	3	..	..	..	1	4	4	5	6	4	10	22	24	29	20	8	2	4
Angina pectoris	24	..	..	..	..	..	..	1	..	..	..	2	4	5	9	3	..	..	..
Aneurism	19	..	..	..	..	..	..	..	..	..	1	..	1	6	6	2	3	..	1
Senile gangrene	23	..	..	..	..	..	..	..	..	..	..	..	..	1	5	8	8	1	1
Embolism, thrombosis	32	1	..	1	..	..	2	..	..	1	1	5	4	6	10	1	2	..	..
Phlebitis	7	1	..	..	..	..	1	..	1	..	1	..	1	2	1	..	..	..	..
Other diseases of circulatory system	17	2	..	..	..	..	2	..	1	..	..	..	2	2	3	3	3	1	..
Total diseases of circulatory system	1,237	20	..	2	3	6	31	33	47	45	46	124	159	193	263	195	87	14	36
Diseases of Respiratory System.																			
Croup	283	28	72	61	56	31	248	33	1	..	..	..	1	..	..	..	..	..	1
Laryngitis	37	3	10	8	2	5	28	4	..	..	1	..	..	1	1	1	..	1	..
Other diseases of larynx and trachea	3	..	..	1	..	..	1	..	..	..	..	1	..	1	..	..	..	..	..
Emphysema, asthma	33	..	..	..	..	..	..	..	..	..	..	1	2	6	6	11	7	..	..
Bronchitis	912	403	122	37	25	5	592	13	4	6	3	16	23	46	65	73	50	21	24
Chronic bronchitis	252	4	7	1	..	..	12	1	1	3	6	7	11	33	52	65	51	10	5
Pneumonia	2,560	504	343	136	70	43	1,096	61	23	56	81	215	201	239	245	196	118	29	71
Pleurisy	66	6	3	3	3	1	16	1	1	1	8	9	2	8	8	8	3	1	..
Hydrothorax, empyema	21	3	3	5	2	..	13	1	..	1	1	1	1	2	1	..	..	..	..
Congestion of lungs	54	18	1	2	1	..	22	3	..	..	1	4	..	7	4	4	5	4	2
Hæmorrhage of lungs	8	..	..	..	..	..	..	..	..	1	1	3	..	1	..	1	1	..	1
Other diseases of respiratory system	27	3	2	2	1	..	8	..	..	2	..	2	1	2	3	4	5	..	2
Total diseases of respiratory system	4,256	972	563	256	160	85	2,036	117	30	70	102	259	242	346	385	363	240	66	106
Diseases of Digestive System.																			
Stomatitis	11	6	2	1	..	..	9	1	..	..	..	..	..	1	..	..	..	..	..
Dentition	66	36	26	4	..	..	66	..	..	..	..	..	..	..	..	..	..	..	3
Tonsilitis, quinsy	8	1	..	1	..	1	3	1	..	..	1	..	1	1	..	1	..	..	..
Gastritis	133	26	4	3	3	..	36	3	2	..	4	13	16	8	21	17	12	1	..
Gastro-enteritis	348	251	42	9	3	4	309	5	2	..	1	5	3	8	4	6	3	2	1
Ulcer of stomach	29	1	..	..	..	..	1	1	..	3	4	8	6	3	1	2	..	..	1
Enteritis	88	55	11	2	1	1	70	1	..	..	2	2	1	4	5	2	..	1	2
Ulcer of intestine, chronic diarrhœa	51	6	1	..	..	..	7	..	..	..	..	1	4	9	11	13	5	1	..
Ileus, obstruction of intestine	50	8	2	2	1	..	13	4	..	..	..	7	6	4	6	9	1	..	..
Stricture or strangulation of intestine	4	1	..	..	..	..	1	2	..	..	..	1	..	..	..	..	..	..	..
Typhlitis, perityphlitis, per. veriform appendix	31	..	..	1	..	..	1	5	3	2	3	2	6	4	3	2	..	..	..
Hernia	62	1	..	..	..	..	1	..	..	..	..	2	13	19	11	14	2	..	..
Peritonitis	143	9	4	4	..	2	19	6	7	8	17	23	25	19	10	8	1	..	2
Hepatitis	40	..	..	..	..	..	..	..	1	..	2	7	12	6	4	7	1	..	..
Cirrhosis	134	1	..	..	..	..	1	..	1	1	1	20	32	38	21	12	6	1	2
Jaundice	15	8	..	..	..	..	8	..	..	..	1	1	1	1	1	2	..	..	1
Gall-stones, biliary colic, etc	13	1	..	..	..	..	1	..	..	..	1	1	2	3	4	..	1	..	..
Other diseases of liver	22	2	..	..	..	..	2	..	..	..	2	3	1	7	4	1	2	..	..
Other diseases of digestive system	82	30	5	3	1	..	39	..	1	2	3	6	5	12	4	6	2	2	1
Total diseases of digestive system	1,330	443	97	30	9	8	587	29	17	16	42	102	134	147	110	100	36	8	15
Diseases of Lymphatic System and Ductless Glands.																			
Exophthalmic goitre (Basedow's disease)	2	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..
Addison's disease	3	..	..	..	..	..	..	..	1	..	1	..	..	1	..	..	..	..	..
Other diseases of lymphatic system	4	3	..	..	..	..	3	..	..	..	..	..	..	1	..	..	..	..	..
Total diseases of lymphatic system	9	3	..	..	..	..	3	..	1	..	1	1	1	2	..	..	..	..	..
Diseases of Urinary System.																			
Acute nephritis	173	10	2	3	3	5	23	11	6	8	13	24	25	30	17	10	3	3	2
Bright's disease, albuminuria	963	2	1	2	4	2	11	10	10	10	28	130	188	204	167	133	63	9	38
Uræmia, suppression of urine	31	5	1	1	1	..	8	..	..	..	2	5	4	8	..	3	..	1	1

Cause of Death.	All Ages.	0	1	2	3	4	Total Under 5	5	10	15	20	25	35	45	55	65	75	85	Colored.
Calculus	7	1		..	..	..	1	..	..		1	1	..	1	1	2	..	..	1
Diseases of bladder and prostate gland	19	1	..	..	..	..	1	1	..	..	..	2	2	2	5	2	3	1	..
Other diseases of urinary system	8	..	..	..	..	..	..	..	..	..	..	1	1	2	..	2	..	..	..
Total diseases of urinary system	1,201	19	4	6	8	7	44	22	16	18	44	105	220	247	190	152	69	14	42
Diseases of Organs of Generation.																			
Ovarian disease	48	..	..	..	..	..	..	..	..	1	4	7	10	8	5	4	3	..	1
Diseases of uterus and vagina	93	..	..	..	..	..	..	..	..	2	12	25	33	11	7	2	1	..	6
Pelvic abscess	17	..	..	..	..	..	..	..	..	..	2	7	5	1	1	..	1	..	1
Perineal abscess	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Other diseases of organs of generation	15	..	..	..	..	..	..	..	1	..	3	5	5	1	..	..	..	..	..
Total diseases of organs of generation	174	..	..	..	..	..	..	..	1	3	21	44	59	21	13	6	6	..	8
Diseases of Parturition.																			
Abortion, miscarriage	48	..	..	..	..	..	..	..	..	4	8	19	16	1	..	..	..	..	5
Puerperal convulsions	55	..	..	..	..	..	..	..	..	7	18	23	7	..	..	..	..	..	2
Puerperal mania	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Placenta prævia, flooding	24	..	..	..	..	..	..	..	..	2	1	11	10	..	..	..	..	..	1
Post-partum hæmorrhage	11	..	..	..	..	..	..	..	..	..	1	6	3	1	..	..	..	..	..
Other diseases of parturition	32	..	..	..	..	..	..	..	..	1	6	13	12	..	..	..	..	..	..
Total diseases of parturition	171	..	..	..	..	..	..	..	..	14	34	73	48	2	..	..	..	..	8
Diseases of Organs of Locomotion.																			
Caries, necrosis	7	..	1	..	1	..	2	..	..	4	..	..	..	1	..	..	..	..	1
Arthritis, osteitis, periostitis	3	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	..	..
Spinal disease	15	1	..	..	..	..	1	4	3	1	4	..	..	..	..	1	1	..	..
Hip disease	11	..	..	..	..	1	1	10	..	..	..	..	..	..	..	..	..	..	..
Other diseases of locomotor system	11	1	..	1	..	..	2	2	..	..	1	..	..	3	2	1	..	..	3
Total diseases of organs of locomotion	47	2	1	1	1	1	6	16	3	5	5	..	..	6	3	2	1	..	4
Diseases of the Integumentary System.																			
Carbuncle	5	..	..	..	..	..	..	..	..	..	..	..	..	2	2	1	..	..	..
Phlegmon, cellulitis	5	..	..	..	..	..	..	..	..	..	..	1	2	1	1	..	..	..	..
Ulcer, bedsore	15	2	..	..	..	..	2	..	..	..	..	1	1	3	2	3	2	1	..
Eczema	6	4	1	..	..	..	5	..	..	..	..	..	1	..	..	..	..	..	..
Pemphigus	2	..	..	..	..	1	1	..	..	..	..	..	1	..	..	..	..	..	..
Other diseases of integumentary system	35	15	2	2	..	1	20	2	..	..	3	1	3	3	3	..	..	..	1
Total diseases of integumentary system	68	21	3	2	..	2	28	2	..	..	3	3	8	9	8	4	2	1	1
Total local diseases	10,097	1,898	810	363	198	127	3,396	261	136	189	323	837	978	1,126	1,183	1,003	531	129	251
VII.—Violence.																			
Accident and Negligence.																			
Fractures, contusions	157	4	7	8	8	10	37	21	2	3	3	10	16	22	19	11	10	3	1
Wounds	8	..	..	..	1	1	2	..	1	1	..	..	2	..	2	..	..	..	.
Burn, scald	102	1	6	5	8	3	23	12	1	14	9	11	9	13	5	3	..	..	
Poison	15	2	1	..	..	..	3	..	..	2	3	1	2	2	2	..	..	..	..
Drowning	13	..	1	..	..	1	2	1	1	.	..	2	3	1	1	1	1	..	..
Suffocation	49	26	1	..	1	..	28	..	2	6	6	2	1	1	2	2	..	..	..
Sunstroke	17	6	1	..	..	..	7	..	..	1	1	1	1	3	..	3	..	..	..
Surgical operations	91	1	..	..	1	..	2	..	1	..	8	29	32	10	5	3	1	..	..
Other forms	7	1	..	..	..	..	1	..	..	..	1	3	1	..	1	..	..	..	..
Total accident and negligence	457	41	17	13	19	15	105	34	7	27	31	59	67	52	37	23	12	3	4
Homicide.																			
Blows	2	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..
Cut, stab	3	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..
Gunshot	4	..	..	..	..	1	1	..	..	..	..	3	..	..	..	..	..	..	..
Other methods	5	3	..	..	..	..	3	..	..	..	..	..	..	1	1	..	..	..	..
Total homicides	14	3	..	..	..	1	4	..	..	1	..	4	2	1	2	..	..	..	..
Suicide.																			
Illuminating gas	6	..	..	..	..	..	..	..	..	..	1	2	1	1	1	..	..	..	..
Cut, stab	4	..	..	..	..	..	..	..	..	..	1	..	2	..	..	1	..	..	..
Drowning	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Gunshot	5	..	..	..	..	..	..	..	..	..	2	3	..	..	..	..	..	..	..
Hanging	4	..	..	..	..	..	..	..	..	..	..	..	1	2	..	1	..	..	..
Leaps	10	..	..	..	..	..	..	..	..	..	2	4	2	1	1	..	..	..	..
Poison	30	..	..	..	..	..	..	..	..	1	8	7	7	3	1	3	..	..	..
Other methods	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Total suicides	61	..	..	..	..	..	..	..	..	1	14	16	13	8	4	5	..	..	..
Total violence	532	44	17	13	19	16	109	34	7	29	45	79	82	61	43	28	12	3	4
VIII.—Ill-defined or Not Specified Causes.																			
Marasmus, inanition	734	684	35	6	2	1	728	3	..	..	..	..	..	..	..	1	2	..	13
Injury at birth	56	56	..	..	..	..	56	..	..	..	..	..	..	..	..	..	..	..	2
Total ill-defined causes	790	740	35	6	2	1	784	3	..	..	..	..	..	..	..	1	2	..	15

CAUSE OF DEATH.	ALL AGES.	0	1	2	3	4	TOTAL UNDER 5.	5	10	15	20	25	35	45	55	65	75	85	Colored.
I.—Specific febrile diseases	4,750	1,657	702	402	267	169	3,197	356	48	65	133	270	163	107	131	158	83	39	84
II.—Parasitic diseases	13	10	..	..	..	..	10	1	..	..	..	1	1	..	..	..	..	..	..
III.—Dietetic diseases	85	6	..	..	..	..	6	..	1	2	9	25	21	13	6	1	1	..	1
IV.—Constitutional diseases	3,408	213	118	52	32	18	433	56	66	169	350	775	567	437	294	198	56	7	114
V.—Developmental diseases	880	554	1	1	1	..	557	1	2	..	..	..	..	1	25	75	125	94	31
VI.—Local diseases	10,097	1,898	810	363	198	127	3,396	261	136	189	325	837	978	1,126	1,183	1,003	534	129	251
VII.—Violence	532	44	17	13	19	16	109	34	7	29	45	79	82	61	43	28	12	3	4
VIII.—Ill-defined causes	790	740	35	6	2	1	784	3	..	..	..	..	..	..	..	1	2	..	15
Total, all causes	20,555	5,122	1,683	837	519	331	8,492	712	260	454	862	1,987	1,812	1,745	1,682	1,464	813	272	500

Mortality from the Principal Causes, by Months, with Ages of Decedents and Meteorology, for the Year 1891.

Estimated population, July 1, 1891, 1,680,796. Death-rate per 1,000 inhabitants, 25.98.

METEOROLOGY.	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.	YEAR.
Mean barometer	29.903	29.952	29.973	29.877	29.926	29.856	29.946	29.930	30.075	29.970	30.061	30.057	29.961
Mean humidity	61	66	60	69	72	68	72	75	73	64	63	59	67
Maximum humidity	87	89	82	100	100	89	100	90	90	93	100	85	92
Minimum humidity	38	31	26	34	31	38	41	48	41	35	33	31	36
Inches of rain	6.12	4.12	3.61	2.38	2.45	1.48	3.94	4.51	2.49	2.60	2.30	2.82	38.82
Mean temperature (Fahr.)	33.82	36.48	35.78	49.73	57.77	71.38	72.39	75.45	71.56	54.71	44.26	42.25	53.80
Maximum temperature (Fahr.)	54	59	58	80	82	97	90	98	91	86	64	66	77
Minimum temperature (Fahr.)	17	14	9	29	32	54	60	59	54	35	14	14	32

CAUSE OF DEATH.	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.	YEAR.
Total, all causes	3,334	3,026	3,854	5,048	3,692	3,562	4,231	3,648	3,231	3,249	3,020	3,734	43,659
Cerebro-spinal meningitis	13	18	24	27	20	7	16	8	20	14	11	11	189
Diphtheria	90	136	127	116	87	102	97	89	91	110	150	166	1,361
Typhoid fever	14	11	17	13	20	23	28	57	65	56	51	29	384
Erysipelas	15	29	19	18	15	19	6	2	5	7	8	19	162
Malarial fevers	14	8	13	11	11	19	19	23	25	21	13	8	185
Measles	105	63	67	84	82	79	59	26	15	24	14	45	663
Scarlatina	88	115	100	169	155	121	118	64	42	50	73	125	1,220
Small-pox	....	....	1	1	....	....	....	....	....	....	....	....	2
Whooping-cough	52	36	43	47	40	25	18	21	21	19	13	17	352
Cholera morbus	....	....	....	....	....	8	23	21	6	5	....	1	64
Other diarrhœal diseases	47	52	62	79	79	436	1,233	714	448	257	63	53	3,523
Diarrhœal diseases under 5 years	32	41	46	59	71	419	1,164	655	398	224	47	35	3,191
Other zymotic diseases	22	15	62	521	132	43	16	8	7	13	9	141	989
Cancer	60	63	102	79	81	60	65	68	81	86	59	98	902
Rheumatism	15	19	19	14	16	12	13	8	8	8	6	9	147
Phthisis	468	378	521	508	478	344	387	399	421	414	407	435	5,160
Other constitutional diseases	93	122	110	117	99	96	106	91	107	83	72	99	1,195
Apoplexy	77	71	81	75	76	79	70	87	77	75	98	94	960
Convulsions	50	41	49	70	37	21	52	35	35	27	35	42	494
Meningitis and encephalitis	65	68	103	108	72	98	86	68	77	67	52	68	932
*Other diseases of nervous system	90	78	80	83	71	105	71	78	67	80	66	86	955
Aneurism	4	5	7	8	4	2	3	5	4	1	4	2	49
Heart diseases	223	142	235	221	215	177	167	174	146	200	185	200	2,285
Other diseases of circulatory system	15	8	15	12	14	9	9	9	6	5	6	13	121
Bronchitis	174	127	195	333	179	120	82	82	107	124	117	196	1,836
Croup	66	49	67	50	44	31	37	22	48	66	59	70	609
Pneumonia	502	478	646	1,112	563	352	237	208	242	296	508	674	5,818
Other diseases of respiratory system	97	67	105	142	90	71	62	64	58	71	93	99	1,019
Gastritis, gastro-enteritis, enteritis and peritonitis	82	68	79	81	80	161	256	174	153	135	72	69	1,410
Cirrhosis of liver and hepatitis	28	31	31	39	34	35	39	40	37	40	30	41	425
Other diseases of digestive system	66	65	80	73	77	77	88	94	67	97	56	70	910
Bright's disease and nephritis	220	204	235	270	216	198	202	194	164	196	176	226	2,501
Premature and preternatural births, cyanosis and atelectasis	113	77	106	100	105	100	97	100	99	110	99	113	1,219
Puerperal diseases	39	49	41	36	44	42	24	29	27	25	24	40	420
Old age	41	44	51	69	43	42	35	33	25	30	39	63	515
Alcoholism	8	18	32	23	26	25	25	38	17	23	26	14	275
Sunstroke	....	....	....	....	....	35	5	51	4	....	....	....	95
Accident	93	100	104	118	125	185	128	254	155	118	114	103	1,597
Homicide	5	4	....	6	9	3	2	9	4	7	3	4	56
Suicide	15	26	20	34	33	37	21	18	22	27	18	29	300
Under one month	223	183	225	230	231	217	285	255	260	231	202	241	2,783
One month and under one year	471	456	558	796	526	889	1,573	890	759	664	396	480	8,458
Total under five years	1,241	1,207	1,434	1,789	1,390	1,718	2,514	1,713	1,529	1,372	1,038	1,279	18,224
Sixty-five years and over	370	315	433	800	451	305	269	295	236	320	293	528	4,621
Males	1,741	1,592	2,056	2,584	1,928	1,894	2,288	1,988	1,723	1,709	1,647	1,954	23,104
Females	1,593	1,434	1,798	2,464	1,764	1,668	1,973	1,660	1,508	1,540	1,373	1,780	20,555
Colored	68	68	111	120	66	85	94	70	63	89	67	83	984

* Sunstroke not included in diseases of the nervous system.

Weekly Mortality from the Principal Causes of Death, with Ages of Decedents, Death-rate and Meteorology for the Year 1891.

Representing, not the actual mortality, but the reported mortality for the year.

METEOROLOGY.	3 days ending January 3.	Jan. 10.	Jan. 17.	Jan. 24.	Jan. 31.	Feb. 7.	Feb. 14.	Feb. 21.	Feb. 28.	Mar. 7.	Mar. 14.	Mar. 21.	Mar. 28.	Apr. 4.	Apr. 11.	Apr. 18.	Apr. 25.	May 2.	May 9.	May 16.	May 23.	May 30.	June 6.	June 13.	June 20.	June 27.	July 4.
Mean barometer	29.677	30.077	29.823	29.879	29.919	29.933	30.044	29.933	29.898	30.070	29.933	30.002	29.915	29.772	30.061	29.992	29.789	29.787	29.891	29.870	30.048	29.956	29.932	30.017	29.799	29.784	29.819
Mean humidity	66	55	59	65	62	64	65	69	65	57	59	61	61	66	66	77	71	60	74	81	64	71	72	66	72	65	69
Maximum humidity	79	78	78	87	80	84	86	86	89	70	77	81	82	89	92	100	93	80	100	100	86	88	88	80	89	85	85
Minimum humidity	53	38	38	47	39	46	34	48	31	26	31	34	37	35	34	48	48	34	40	54	34	43	40	45	45	45	38
Inches of rain	.79	.07	2.38	1.42	1.46	1.38	.52	1.17	1.05	.52	1.89	.70	.43	.93	.69	.34	.49	..	.56	.77	.16	.96	.14	.39	.84	.11	.40
Mean temp. (Fahr.)	30.5	25.7	34.6	36.5	38.9	34.7	34.0	39.7	37.7	26.4	38.3	34.6	42.0	40.7	38.9	55.5	57.3	57.1	50.2	58.5	60.8	61.8	67.9	70.8	73.7	75.3	69.2
Maximum temp. (Fahr.)	54	41	51	53	48	51	43	59	57	39	51	48	58	57	50	76	80	78	82	81	82	75	88	86	97	91	80
Minimum temp. (Fahr.)	18	17	25	23	28	14	21	17	22	9	23	19	27	31	29	44	39	36	32	44	42	48	55	54	56	60	59

CAUSE OF DEATH.	3 days ending January 3.	Jan. 10.	Jan. 17.	Jan. 24.	Jan. 31.	Feb. 7.	Feb. 14.	Feb. 21.	Feb. 28.	Mar. 7.	Mar. 14.	Mar. 21.	Mar. 28.	Apr. 4.	Apr. 11.	Apr. 18.	Apr. 25.	May 2.	May 9.	May 16.	May 23.	May 30.	June 6.	June 13.	June 20.	June 27.	July 4.
	WEEK ENDING—																										
Total, all causes	307	744	786	748	737	736	755	751	797	735	813	840	895	1,100	1,216	1,347	1,208	961	910	873	777	798	772	743	952	803	922
Cerebro-spinal meningitis	1	5	2	1	3	2	3	6	6	4	7	4	7	5	3	5	10	6	3	3	7	7	3	2	1	..	3
Diphtheria	10	14	19	22	28	30	34	30	40	33	31	29	16	31	30	38	28	12	24	21	8	29	20	27	27	18	21
Typhoid fever	3	3	3	3	3	2	5	3	2	1	6	1	3	8	2	2	4	3	4	5	4	6	7	6	2	7	2
Erysipelas	1	3	3	2	7	4	10	7	7	3	3	3	6	5	6	6	3	3	5	3	2	4	4	4	5	6	1
Malarial fevers	2	2	3	4	5	3	2	1	1	2	5	3	3	3	3	2	..	4	2	1	4	4	..	4	9	2	5
Measles	11	15	18	33	32	13	19	18	10	15	15	16	12	22	18	23	20	14	21	21	19	15	15	24	16	20	16
Scarlatina	9	16	22	20	23	20	26	30	33	24	25	21	28	25	35	37	49	37	23	34	29	53	33	34	33	24	24
Small-pox	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Typhus fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Whooping-cough	4	8	12	17	11	9	8	9	7	10	5	13	11	13	20	11	8	3	9	11	10	5	7	6	9	5	5
Cholera morbus	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	4	4
Other diarrhœal diseases	3	10	9	13	11	11	14	14	15	10	11	21	7	19	28	20	7	17	16	20	20	18	23	36	110	133	236
Diarrhœal diseases under 5 years	2	7	4	10	9	7	12	12	11	7	9	17	5	10	20	16	5	14	14	19	17	16	21	35	104	129	208
Other zymotic diseases	..	5	3	3	9	5	6	3	3	6	4	2	13	51	110	182	140	78	45	31	26	15	24	11	9	6	5
Cancer	4	13	11	19	17	14	15	19	14	17	19	25	25	23	21	19	16	19	19	22	16	14	19	14	14	13	12
Rheumatism	1	2	3	5	3	2	4	4	4	9	5	3	4	5	2	6	2	3	2	4	1	5	5	3	5	..	3
Phthisis	39	110	98	111	105	93	90	95	103	104	119	102	124	137	128	127	106	114	99	112	108	103	99	98	85	70	72
Other constitutional diseases	9	16	19	26	17	35	24	30	35	22	27	27	27	22	23	31	27	28	23	19	31	14	23	21	27	21	24
Apoplexy	8	19	15	18	18	21	16	14	18	20	20	10	18	25	16	17	17	19	22	17	14	15	18	19	31	11	10
Convulsions	7	12	14	7	11	9	9	9	13	11	9	10	12	15	17	18	14	16	8	7	8	8	8	4	3	6	11
Meningitis and encephalitis	5	24	7	14	11	22	9	20	19	16	23	24	20	30	27	29	26	21	15	19	15	16	20	18	33	21	19
Other diseases of nervous system *	15	11	32	16	19	16	22	20	20	14	14	13	24	26	17	25	22	15	18	18	13	15	25	22	29	23	18
Aneurism	..	..	..	1	2	1	3	2	..	1	3	1	1	1	2	3	2	1	2	..	..	2	..	..	..	..	2
Heart disease	13	53	49	55	51	41	41	30	29	55	44	64	48	58	58	54	46	45	62	45	51	42	48	39	48	35	31
Other diseases of circulatory system	4	4	1	2	2	4	4	1	2	2	5	3	4	1	6	3	1	2	2	6	1	3	2	4	2	..	2
Bronchitis	19	27	38	44	41	40	37	28	30	25	44	45	47	60	83	91	86	53	33	43	47	40	28	26	37	22	22
Croup	2	16	22	11	12	9	13	14	11	15	23	14	13	13	14	12	8	11	11	5	10	14	9	7	4	7	11
Pneumonia	53	123	135	105	91	123	120	106	138	110	99	136	179	225	289	296	272	176	168	139	112	106	98	84	89	75	56
Other diseases of respiratory system	13	21	28	25	16	12	18	24	13	15	23	20	23	36	37	37	30	24	23	25	17	20	12	12	20	22	17
Gastritis, gastro-enteritis, enteritis and peritonitis	6	15	19	23	18	21	16	18	15	19	18	21	13	18	14	24	18	21	18	20	19	12	21	19	53	36	65
Cirrhosis of liver and hepatitis	4	7	6	6	6	8	7	10	8	2	9	8	12	5	8	8	12	6	6	7	7	9	10	9	6	10	6
Other diseases of digestive system	5	13	20	17	12	15	12	17	22	15	16	15	25	17	12	17	21	17	16	22	15	18	13	13	25	16	19
Bright's disease and nephritis	17	51	64	34	48	47	58	50	52	45	41	54	63	66	67	60	66	60	48	46	45	56	51	43	44	45	44
Premature and preternatural births, cyanosis and atelectasis	7	27	27	22	24	24	21	22	17	24	27	22	23	24	20	21	30	26	29	30	14	19	21	22	20	27	25
Puerperal diseases	1	8	13	6	9	12	5	11	18	12	12	10	6	7	8	7	12	6	6	11	12	14	10	7	14	7	10
Old age	5	12	7	9	7	9	11	13	9	11	10	14	11	14	17	24	14	9	9	13	11	6	10	9	10	11	9
Alcoholism	1	1	4	..	1	3	5	4	7	4	9	8	9	5	13	4	4	1	8	3	3	8	9	4	5	4	8
Sunstroke	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	6	5
Accident	12	32	23	17	13	21	28	20	32	23	25	25	18	26	14	30	34	37	44	19	27	21	32	26	66	46	42
Homicide	3	..	1	..	2	..	..	3	..	1	..	..	..	..	..	1	2	2	3	..	1	3	2	1	1	..	1
Suicide	..	5	3	4	3	8	2	10	5	4	4	5	4	5	5	10	9	8	12	8	6	7	10	9	10	6	6
Under one month	12	51	56	46	55	41	47	53	41	49	53	49	42	53	50	57	64	56	56	67	36	43	47	55	46	53	57
One month and under 1 year	49	89	109	111	107	118	121	100	126	100	113	136	120	166	176	224	199	146	122	136	112	112	114	125	253	224	343
Total under 5 years	113	253	285	284	300	289	306	289	320	291	324	327	300	375	399	484	455	353	314	334	290	324	299	324	447	416	544
65 years and over	35	85	98	80	74	81	70	85	84	72	101	71	100	154	193	237	194	134	112	117	94	86	78	69	73	76	69
Males	163	369	400	388	390	379	397	386	442	364	459	438	481	586	605	706	610	495	472	458	406	434	404	405	500	442	464
Females	144	375	386	360	347	357	358	365	355	371	354	402	414	514	611	641	598	466	438	415	371	364	368	338	452	361	458
Colored	2	13	17	19	12	18	18	16	13	29	21	29	20	29	27	36	26	21	21	13	17	12	12	22	19	20	25
Death-rate	..	23.42	24.73	23.52	23.16	23.12	23.70	23.56	24.99	23.03	25.46	26.29	28.00	34.39	38.00	42.07	37.75	30.04	28.37	27.20	24.20	24.87	24.01	23.10	29.58	24.94	28.61

* Sunstroke not included in diseases of nervous system.

Weekly Mortality from the Principal Causes of Death, with Ages of Decedents, Death-rate and Meteorology for the Year 1891—(Continued).

Representing, not the actual mortality, but the reported mortality for the year.

METEOROLOGY	July 11.	July 18.	July 25.	Aug. 1.	Aug. 8.	Aug. 15.	Aug. 22.	Aug. 29.	Sept. 5.	Sept. 12.	Sept. 19.	Sept. 26.	Oct. 3.	Oct. 10.	Oct. 17.	Oct. 24.	Oct. 31.	Nov. 7.	Nov. 14.	Nov. 21.	Nov. 28.	Dec. 5.	Dec. 12.	Dec. 19.	Dec. 26.	5 days ending December 31.	Year.
Mean barometer	29.929	29.956	30.074	29.865	29.953	29.916	29.888	29.972	30.068	30.104	30.020	30.073	30.189	29.867	30.088	29.823	30.004	30.049	30.067	30.338	29.754	30.095	30.062	30.027	30.053	30.081	29.961
Mean humidity	67	75	76	71	73	75	75	75	79	69	71	76	74	69	64	62	58	56	75	63	61	58	56	59	60	55	67
Maximum humidity	88	90	100	94	89	87	90	90	90	90	85	86	86	93	80	76	81	100	88	82	76	100	80	86	81	72	92
Minimum humidity	41	47	53	45	58	52	49	48	58	41	49	57	46	51	44	37	35	37	50	33	42	31	32	33	51	33	36
Inches of rain	.95	.81	.67	1.41	.27	.51	.09	2.94	1.75	.41	.17	.34	.22	.70	.35	1.25	.30	...	.37	.72	1.21	.59	.55	.02	1.53	.86	38.82
Mean temp. (Fahr.)	70.1	77.0	76.8	69.9	74.5	79.9	76.4	76.4	70.3	68.7	71.5	75.0	69.5	61.8	52.8	51.3	49.4	41.3	51.0	43.8	48.0	38.6	44.2	37.3	47.8	37.3	53.8
Maximum temp. (Fahr.)	82	90	86	79	91	98	89	83	85	80	91	87	83	86	67	62	67	58	63	64	61	59	57	60	66	53	77
Minimum temp. (Fahr.)	60	62	68	60	62	67	66	59	61	54	58	64	53	49	40	39	35	30	40	26	29	14	34	14	30	26	30

CAUSE OF DEATH.	WEEK ENDING— July 11.	July 18.	July 25.	Aug. 1.	Aug. 8.	Aug. 15.	Aug. 22.	Aug. 29.	Sept. 5.	Sept. 12.	Sept. 19.	Sept. 26.	Oct. 3.	Oct. 10.	Oct. 17.	Oct. 24.	Oct. 31.	Nov. 7.	Nov. 14.	Nov. 21.	Nov. 28.	Dec. 5.	Dec. 12.	Dec. 19.	Dec. 26.	5 days ending December 31.	Year.
Total, all causes	957	1,074	947	866	763	1,005	773	826	736	747	728	811	737	722	747	688	737	733	774	714	671	675	734	800	889	754	43,634
Cerebro-spinal meningitis	5	6	2	1	1	1	1	2	7	6	4	5	2	5	1	4	3	2	4	2	1	4	2	4	1	2	189
Diphtheria	27	23	19	21	19	19	22	22	22	21	17	20	26	14	27	20	32	41	37	33	36	32	31	39	46	27	1,363
Typhoid fever	4	6	11	7	8	13	16	15	10	9	19	24	11	18	12	9	12	14	17	10	9	11	5	5	4	5	384
Erysipelas	2	1	3	..	1	..	1	..	..	2	3	..	1	3	..	2	1	1	..	2	3	3	3	4	6	3	161
Malarial fevers	5	5	2	5	5	5	5	4	7	6	8	4	4	6	4	5	5	5	2	4	3	1	1	3	2	1	187
Measles	13	12	16	11	8	8	5	3	5	1	4	4	5	4	10	4	3	3	4	4	5	6	8	17	2	8	664
Scarlatina	30	30	23	19	25	14	10	9	13	17	11	7	6	11	5	10	15	11	16	15	29	19	22	33	23	31	1,221
Small-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Typhus fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Whooping-cough	3	5	5	2	3	6	9	1	4	5	5	2	8	7	3	3	4	2	6	6	1	1	4	4	4	4	353
Cholera morbus	3	5	5	7	7	3	6	5	1	1	1	1	3	2	2	..	1	..	..	..	..	..	..	..	..	..	62
Other diarrhœal diseases	280	334	265	237	170	231	132	136	134	111	95	115	87	84	71	36	34	21	13	21	11	4	10	16	13	10	3,523
Diarrhœal diseases under 5 years	270	317	250	213	159	211	112	132	119	97	84	104	79	76	60	31	27	15	11	17	6	3	8	6	11	7	3,185
Other zymotic diseases	6	4	3	2	2	1	1	3	1	2	1	3	3	2	4	3	1	1	3	3	1	2	6	10	41	67	971
Cancer	16	17	10	16	18	13	18	11	26	16	12	25	17	18	20	16	23	11	12	19	14	13	21	23	25	19	902
Rheumatism	4	2	4	3	..	4	3	1	..	1	6	..	1	4	2	..	2	..	2	..	2	5	..	..	4	..	145
Phthisis	90	91	82	80	74	116	89	98	73	112	101	107	77	76	87	104	102	95	99	87	101	103	98	97	86	84	5,160
Other constitutional diseases	28	26	17	25	24	26	21	14	15	24	26	26	29	20	25	17	11	20	16	20	15	15	26	22	21	17	1,195
Apoplexy	10	18	17	20	19	27	18	19	11	24	19	17	14	14	16	19	18	22	24	27	19	19	20	19	21	22	959
Convulsions	11	8	18	9	8	4	7	14	6	7	4	9	12	5	7	9	4	7	6	9	5	16	5	9	11	9	495
Meningitis and encephalitis	14	19	25	19	15	25	12	13	16	15	13	23	18	17	19	8	15	14	16	12	8	12	11	11	18	16	927
Other diseases of nervous system *	13	22	18	10	19	20	16	16	13	12	16	20	18	15	19	21	19	15	15	10	15	27	22	18	14	11	956
Aneurism	1	..	2	..	2	..	1	2	..	..	3	1	..	1	..	..	..	1	..	2	1	..	..	1	1	..	49
Heart diseases	37	47	36	30	40	51	33	39	34	38	38	26	31	48	47	36	48	48	50	43	45	36	53	43	51	23	2,287
Other diseases of circulatory system	2	2	2	2	1	3	2	..	3	..	3	2	1	3	1	1	..	..	..	1	3	5	2	4	2	2	120
Bronchitis	21	31	8	14	19	16	17	19	26	25	24	28	23	20	31	27	32	23	29	26	34	35	34	43	45	43	1,834
Croup	6	14	7	6	5	8	5	3	6	10	15	10	13	9	11	17	19	23	16	11	12	9	12	16	21	10	605
Pneumonia	66	54	49	49	47	57	41	54	41	51	54	66	52	46	56	61	98	115	139	120	112	94	112	140	201	139	5,817
Other diseases of respiratory system	10	11	15	19	10	15	13	13	17	12	15	15	15	8	19	20	16	23	19	35	15	12	16	25	18	31	1,020
Gastritis, gastro-enteritis, enteritis and peritonitis	49	65	75	40	32	50	46	33	39	32	29	37	37	42	35	27	20	16	22	16	16	17	12	17	11	18	1,413
Cirrhosis of liver and hepatitis	7	8	11	12	6	13	9	9	6	5	9	12	8	11	4	9	13	8	7	8	6	8	10	9	11	4	425
Other diseases of digestive system	23	20	20	21	9	27	26	23	19	12	13	22	15	25	24	24	19	16	13	12	13	8	19	12	17	12	909
Bright's disease and nephritis	43	49	44	48	44	46	62	31	31	38	35	41	47	35	49	44	48	43	50	42	30	38	45	54	54	46	2,503
Premature and preternatural births, cyanosis and atelectasis	20	23	24	25	20	32	13	25	21	23	25	23	29	23	21	27	18	22	30	27	13	28	28	21	25	23	1,224
Puerperal diseases	4	9	4	2	7	5	9	5	7	4	5	8	10	7	4	2	7	4	9	4	7	6	12	2	7	10	414
Old age	6	9	6	9	6	13	6	6	6	7	5	4	7	9	6	7	6	8	12	8	9	9	14	11	20	7	510
Alcoholism	6	2	6	10	7	2	7	14	8	7	3	6	3	6	4	4	5	6	6	9	6	3	4	3	1	2	275
Sunstroke	..	2	2	..	..	37	11	2	1	1	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	95
Accident	28	34	24	23	34	67	41	105	33	32	32	35	39	28	28	30	21	39	27	23	24	18	19	22	35	12	1,606
Homicide	..	1	1	..	2	1	2	..	5	1	..	2	..	4	..	1	..	2	..	1	2	..	2	..	1	1	56
Suicide	3	8	4	3	3	2	6	2	6	5	6	3	7	9	4	7	5	5	6	5	2	7	5	6	6	5	298
Under one month	63	62	66	72	52	73	50	58	54	58	64	63	62	50	54	57	39	45	57	43	39	57	56	49	52	53	2,783
One month and under 1 year	386	414	347	275	188	276	154	199	186	168	160	195	192	188	165	124	121	95	104	94	78	82	96	97	123	103	8,461
Total under 5 years	581	666	550	481	380	492	319	376	369	341	339	384	366	325	336	276	275	267	260	253	217	238	250	273	321	251	18,225
65 years and over	62	64	49	61	54	89	68	57	55	56	53	55	66	73	66	72	76	62	93	80	59	69	96	105	132	111	4,605
Males	511	581	495	481	404	548	442	450	374	395	392	441	396	376	404	371	375	403	414	361	370	347	403	438	461	363	23,059
Females	446	493	452	385	359	457	331	376	362	352	336	370	341	346	343	317	362	330	330	353	301	328	331	362	428	391	20,565
Colored	19	26	18	19	20	16	11	18	10	17	20	13	10	16	20	26	19	17	12	17	20	15	18	20	20	11	975
Death-rate	29.68	33.29	29.34	26.81	23.61	31.08	23.89	25.52	22.72	23.05	22.45	25.00	22.70	22.23	22.98	21.15	22.65	22.51	23.76	21.91	20.57	20.68	22.48	24.49	27.20	32.26	25.96

* Sunstroke not included in diseases of nervous system.

Deaths from Zymotic and Certain Other Preventable Diseases by Wards, for Year* 1891.

WARDS.	AREA IN ACRES.	Cerebro-spinal Meningitis.	Diphtheria.	Typhoid Fever.	Erysipelas.	Malarial Fevers.	Measles.	Scarlet Fever.	Small-pox.	Typhus Fever.	Influenza.	Whooping-cough.	Diarrhœal Diseases.	Rheumatism.	Phthisis.	Bronchitis.	Croup.	Pneumonia.	Puerperal Diseases.	Alcoholism.	Bright's Disease and Nephritis.	All Causes.	In Institutions not Redistributed.	†In Institutions Redistributed.	Total in Institutions.	‡All Deaths Redistributed.
First	154	3	11	4	3	..	13	9	1	..	6	2	32	..	101	22	2	73	5	8	42	568	13	169	182	602
Second	81	..	1	..	1	..	..	2	..	..	..	..	3	..	5	..	..	5	..	..	..	37	..	11	11	40
Third	95	..	..	..	..	..	1	..	..	..	..	1	1	..	15	3	2	9	..	1	9	145	31	18	49	124
Fourth	83	3	23	4	4	1	10	23	..	..	10	5	70	2	146	57	11	134	7	17	58	902	4	240	244	974
Fifth	168	1	13	4	1	1	2	2	..	..	6	2	31	1	49	20	3	43	2	2	21	334	5	61	66	357
Sixth	86	4	14	6	5	5	24	14	..	..	9	13	38	1	112	64	7	126	2	8	40	751	10	165	175	804
Seventh	198	14	46	9	6	4	23	88	..	..	20	18	151	4	202	64	15	370	13	8	122	1,814	21	327	348	1,946
Eighth	183	3	42	10	8	5	17	28	..	..	16	10	75	3	160	79	19	165	10	10	78	1,234	3	203	206	1,336
Ninth	322	7	20	14	4	5	25	24	..	..	26	17	81	7	196	78	17	177	14	13	91	1,444	81	196	277	1,479
Tenth	110	6	46	8	4	1	19	71	..	..	11	12	130	1	149	37	32	230	19	8	61	1,360	1	336	337	1,475
Eleventh	196	2	54	15	9	3	18	85	..	..	25	11	142	1	165	82	21	207	20	10	71	1,487	49	162	211	1,560
Twelfth	5,504.13	13	228	61	23	58	92	137	..	..	129	56	642	19	759	238	111	831	62	21	311	6,766	909	580	1,489	6,356
Thirteenth	107	6	52	4	10	2	38	97	..	..	12	16	175	4	139	75	33	302	17	2	80	1,640	..	252	252	1,780
Fourteenth	96	4	36	5	10	3	25	22	..	..	19	14	83	4	109	146	17	185	10	10	53	1,149	1	177	178	1,246
Fifteenth	198	5	9	6	2	3	7	6	..	..	15	3	36	3	113	35	5	91	4	7	70	726	7	186	193	780
Sixteenth	348.77	8	37	12	..	4	21	18	..	..	53	9	81	8	168	51	18	195	11	12	114	1,454	35	200	235	1,540
Seventeenth	331	8	105	24	12	12	29	126	..	..	56	13	264	12	352	123	36	365	34	12	147	2,885	36	497	533	3,092
Eighteenth	449.89	7	47	18	6	6	16	62	..	..	38	6	137	10	204	57	16	199	12	11	114	1,693	116	297	413	1,711
Nineteenth	1,480.60	26	202	56	23	18	136	177	..	..	161	69	558	26	773	168	80	793	65	24	357	6,678	1,561	591	2,152	5,553
Twentieth	444	18	119	27	9	4	41	66	..	..	46	16	187	12	340	114	37	332	22	16	180	2,645	42	407	449	2,825
Twenty-first	411	6	37	29	6	9	16	38	..	..	52	13	115	5	254	61	29	239	17	43	142	1,907	253	281	534	1,795
Twenty-second	1,529.42	38	123	49	12	16	53	64	..	1	108	39	368	15	436	173	58	531	52	23	237	4,138	106	460	566	4,375
Twenty-third	4,267.023	6	82	13	3	12	34	55	1	..	22	7	150	6	158	68	37	142	16	6	80	1,404	84	103	187	1,432
Twenty-fourth	8,050.323	1	14	6	1	13	3	6	..	..	14	..	37	3	55	21	3	74	6	3	23	498	58	32	90	477
Total	24,893.156	189	1,361	384	162	185	663	1,220	2	1	854	352	3,587	147	5,160	1,836	609	5,818	420	275	2,501	43,659	3,426	5,951	9,377	43,659

* Deaths in institutions redistributed according to residence, where residence was known.

† This column contains the persons who died in institutions, but whose residence before admission to the institution was in the ward to which they are assigned in this table.

‡ In this column the 3,426 deaths in institutions, for which no previous or other residence was given in the certificate of death, have been distributed to the different wards in proportion to the number of deaths known to have been properly assigned to each ward.

The following wards contain large public institutions, viz.: First Ward—Emigrant Depot; Third Ward—Chambers Street Hospital; Seventh Ward—Gouverneur Hospital; Ninth Ward—St. Vincent's Hospital; Eleventh Ward—St. Francis' Hospital; Twelfth Ward—Ward's and Randall's Island Hospitals; Eighteenth Ward—New York, Post-Graduate and Willard Parker Hospitals; Nineteenth Ward—Presbyterian, German, Mount Sinai, Colored Home, Nursery and Child's and St. Luke's Hospitals, and Foundling Asylum and the Blackwell's Island institutions; Twenty-first Ward—Bellevue Hospital; Twenty-second Ward—Roosevelt and Sloane Maternity Hospitals; Twenty-third Ward—St. Joseph's Hospital and North Brother Island.

Deaths by Certain Diseases, According to Nativity of Deceased, of Parents of Deceased, and Color, for the Year 1891.

CAUSE OF DEATHS, AND DEATHS IN INSTITUTIONS.	PLACE OF BIRTH OF DECEASED.															PLACE OF BIRTH OF PARENTS OF DECEASED.															Total.	Colored.
	Austro-Hungary.	Bohemia.	British America.	England.	France.	Germany.	Ireland.	Italy.	Poland.	Russia.	Scotland.	Switzerland.	United States.	Other Nationalities.	Unknown Nationality.	Austro-Hungary.	Bohemia.	British America.	England.	France.	Germany.	Ireland.	Italy.	Poland.	Russia.	Scotland.	Switzerland.	United States.	Other Nationalities.	Mixed Nationalities.	Unknown Nationality.		
Total—All causes	481	207	170	876	240	4,311	6,860	816	120	515	300	113	27,300	549	801	1,286	556	104	939	280	7,594	11,453	2,350	300	1,468	400	142	7,883	756	5,124	3,024	43,659	983
Diphtheria	3	2	..	6	5	20	6	14	1	12	2	..	1,238	7	45	48	16	4	17	7	240	167	77	11	66	11	3	316	26	288	64	1,361	10
Measles	4	..	..	1	.	7	3	14	..	10	..	..	569	..	58	26	3	1	5	1	74	83	76	5	29	2	2	142	4	97	113	663	7
Scarlatina	12	2	2	4	..	28	16	7	4	29	2	1	1,089	6	18	74	19	2	13	1	228	140	28	25	114	7	2	257	16	241	53	1,220	3
Diarrhœal diseases	13	..	2	14	3	98	158	20	2	28	4	..	3,126	8	111	167	86	6	49	19	578	526	206	31	176	20	7	765	64	668	219	3,587	82
Cancer	22	6	10	34	13	257	222	16	5	29	10	2	254	22	..	20	6	2	35	10	250	247	16	4	29	11	2	151	20	37	62	902	16
Insanity	8	1	2	12	3	51	55	4	1	2	..	1	72	7	..	5	1	1	12	1	41	66	1	1	3	..	..	31	5	6	45	219	2
Heart diseases	37	17	10	94	19	476	563	51	8	18	32	9	900	41	11	42	21	2	81	20	544	751	52	11	20	24	6	373	38	151	150	2,286	64
Phthisis	83	59	35	153	38	663	1,204	143	12	90	39	32	2,454	141	14	80	61	19	114	40	1,009	2,158	158	15	87	44	32	617	127	339	260	5,160	185
Pneumonia	78	25	21	122	20	477	994	173	16	56	46	10	3,616	68	96	241	72	20	124	27	860	1,615	447	41	280	60	11	1,002	95	607	316	5,818	137
Cirrhosis of liver and hepatitis	7	2	4	13	8	95	121	14	..	7	6	2	137	7	2	7	2	2	16	4	109	166	15	..	7	6	2	45	7	16	21	425	3
Bright's disease and nephritis	27	15	19	89	21	398	763	40	10	34	25	9	982	39	30	33	19	7	75	18	484	1,007	45	8	38	26	10	372	39	129	191	2,501	72
Old age	4	9	1	14	10	104	221	2	2	10	8	1	122	4	1	3	9	1	14	8	104	219	2	2	10	9	5	72	6	15	34	513	19
Alcoholism	1	1	1	16	2	38	91	4	1	1	5	1	104	7	2	..	1	3	6	3	41	126	4	1	1	5	..	20	5	12	47	275	..
Sunstroke	1	1	..	1	1	12	32	2	..	1	1	..	39	1	3	1	1	..	..	1	15	36	7	1	..	1	..	13	2	11	6	95	1
Homicide	2	..	..	2	..	4	7	8	..	..	..	..	31	..	2	1	..	1	1	..	8	14	9	..	..	..	..	9	..	3	10	56	1
Suicide	13	5	2	12	10	106	27	1	3	5	2	7	84	9	14	13	5	3	13	7	115	40	2	2	4	1	7	30	8	7	43	300	1
Inanition, atrophy, marasmus, etc.	..	..	1	2	..	7	2	2	..	1	..	..	1,354	1	160	31	30	1	19	3	122	117	63	11	44	5	7	270	7	259	541	1,530	29
Other causes	166	62	60	287	87	1,470	2,375	301	55	182	118	38	11,129	181	237	494	204	29	345	110	2,772	3,975	1,142	131	560	168	46	3,398	287	2,238	849	16,748	351
Died in institutions	172	22	64	283	90	1,196	2,138	240	34	220	91	41	4,015	214	557	181	23	37	240	77	1,221	2,828	231	56	325	92	35	1,080	189	534	2,228	9,377	287

Deaths of Persons 100 *Years of Age and Over, during the Year* 1891.

DATE.	NAME.	AGE.	NATIVITY.	CAUSE OF DEATH.
Mar. 3	Catharine Kinney	100	Ireland	Meningitis.
" 8	Mary Sherelock	100	"	Old age.
Apr. 19	Andrew Horan	102	"	Pneumonia.
May 2	John Downey	104	"	Old age.
June 2	Rodie Culver	106	United States	Marasmus.
" 6	Ellen Croft	100	England	Diarrhœa.
July 26	Abbey Rich	101	United States	Capillary bronchitis.
Aug. 14	William Butcher	116	"	Cerebral hæmorrhage.
Sept. 21	Susan Beatty	102	Ireland	Old age.
" 30	Isaac Brandenstein	100	Germany	"
Oct. 21	James O'Connor	10	Ireland	"

Deaths by Suicide during the Year ending December 31, 1891.

NATIVITY.	Cut and Stab.		Drowning.		Gunshots.		Hanging.		Leap.		Strangulation.		Illuminating Gas.		Arsenic.		Aconite.		Ammonia.		Carbolic Acid.		Cyanide of Potassium.		Chloroform.		Morphine.		Muriatic Acid.		Opium.		Paris Green.		Prussic Acid.		Ether.		Corrosive Sublimate.		Rough-on-rats.		Belladonna.		Total by Sexes.		Total, both Sexes.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Austro-Hungary	..	..	..	..	3	2	1	1	1	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	..	..	..	8	5	13
Bohemia	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	5	..	5
British America	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1	2
England	2	1	..	..	4	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	..	..	..	..	..	..	..	..	..	9	3	12
France	2	..	..	..	2	..	4	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	2	10
Germany	5	..	3	1	36	..	24	3	4	1	1	1	7	1	2	..	..	..	..	1	..	1	1	..	..	..	2	1	1	..	2	..	1	1	1	1	1	..	..	..	1	2	..	..	92	14	106
Ireland	3	3	1	..	4	..	2	..	1	1	..	..	..	..	..	1	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	3	4	..	..	..	..	1	..	..	..	..	..	17	10	27
Italy	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1
Poland	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	3
Russia	..	..	..	..	2	..	2	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	1	5
Scotland	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	2
Switzerland	1	..	..	..	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	..	7
United States	6	..	2	..	27	3	9	..	5	5	1	..	2	3	..	..	1	..	..	..	1	5	1	..	2	..	1	..	..	..	..	..	3	3	..	..	..	..	..	..	..	4	..	..	61	23	84
Unknown	1	..	..	..	6	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	13	1	14
Other foreign countries	..	..	1	..	3	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	8	1	9
Total	20	4	8	1	99	5	46	4	12	10	2	1	13	6	2	1	1	..	..	1	2	7	3	..	3	..	3	2	1	..	5	..	10	10	2	1	1	..	1	..	5	7	..	1	239	61	300

Ages of Suicides.

UNITED STATES.		FOREIGN.		15–25.		25–45.		45–65.		65 AND OVER.		TOTAL BY SEXES.		TOTAL, BOTH SEXES.
Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
61	23	178	38	24	14	116	30	84	12	15	5	239	61	300

Deaths by Age and Sex and Percentage of Each Age Period to Total Mortality during the Year 1891.

TOTAL NUMBER OF DEATHS.

AGE.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.		JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Under 1 year	373	321	334	284	441	343	566	460	407	350	616	490	997	851	612	533	531	488	490	405	338	256	394	327	6,119	5,122
1 to 5 years	297	250	266	303	327	323	395	368	323	310	339	273	351	305	282	285	251	239	243	234	246	194	293	265	3,613	3,370
5 to 10 years	60	62	62	59	53	70	74	83	68	63	56	51	65	54	52	45	48	45	54	49	53	58	66	73	711	712
10 to 15 years	14	24	16	22	21	23	24	28	28	30	26	27	19	11	22	21	17	14	22	22	15	19	22	19	246	260
15 to 20 years	49	39	26	30	45	34	33	46	34	45	36	40	40	35	50	46	36	28	36	32	41	42	33	37	459	454
20 to 25 years	69	70	67	65	81	78	90	99	79	86	60	65	78	67	93	76	77	54	68	68	64	59	67	75	893	862
25 to 35 years	210	166	157	153	247	193	284	237	210	177	171	146	170	148	219	142	184	157	182	143	204	145	231	180	2,469	1,987
35 to 45 years	194	178	188	123	227	164	294	204	225	155	176	144	182	116	238	138	187	135	179	146	217	146	211	163	2,508	1,812
45 to 55 years	184	126	176	125	228	177	276	218	189	140	159	133	132	117	175	108	154	118	164	152	190	150	231	181	2,258	1,745
55 to 65 years	135	143	131	103	174	173	217	252	165	157	122	127	130	114	120	105	119	93	123	117	148	132	172	166	1,756	1,682
65 to 75 years	101	123	99	92	144	130	193	259	144	142	90	108	77	81	85	104	78	72	103	113	81	88	148	152	1,343	1,464
75 years and over	55	91	50	75	68	90	138	210	56	109	43	64	47	64	50	56	41	45	45	59	50	80	86	142	729	1,085
Total	1,741	1,593	1,592	1,434	2,056	1,798	2,584	2,464	1,928	1,764	1,894	1,668	2,288	1,973	1,988	1,660	1,723	1,508	1,709	1,540	1,647	1,373	1,954	1,780	23,104	20,555

PERCENTAGE OF EACH AGE PERIOD TO TOTAL MORTALITY.

Under 1 year	.85	.74	.81	.65	1.01	.79	1.30	1.05	.93	.80	1.41	1.12	2.28	1.97	1.40	1.22	1.22	1.12	1.12	.93	.77	.60	.90	.75	14.01	11.73
1 to 5 years	.68	.57	.61	.69	.75	.74	.90	.84	.74	.71	.78	.63	.80	.70	.65	.66	.58	.59	.56	.54	.56	.44	.67	.61	8.27	7.72
5 to 10 years	.14	.14	.14	.14	.12	.16	.17	.19	.16	.14	.13	.12	.15	.12	.12	.10	.11	.10	.12	.11	.12	.13	.15	.17	1.63	1.63
10 to 15 years	.03	.05	.04	.05	.05	.05	.05	.06	.06	.07	.06	.06	.04	.02	.05	.05	.04	.03	.05	.05	.03	.04	.05	.04	.56	.60
15 to 20 years	.11	.09	.06	.07	.10	.08	.08	.11	.08	.10	.08	.09	.09	.08	.11	.11	08	.06	.08	.07	.09	.10	.08	.08	1.05	1.04
20 to 25 years	.16	.16	.15	.15	.19	.18	.21	.23	.18	.20	.14	.15	.18	.15	.21	.17	.18	.12	.16	.16	.15	.14	.15	.17	2.05	1.97
25 to 35 years	.48	.38	.36	.35	.57	.44	.65	.54	.48	.41	.39	.33	.39	.34	.50	.33	.42	.35	.42	.33	.47	.33	.53	.41	5.66	4.55
35 to 45 years	.44	.41	.43	.28	.52	.38	.67	.47	.52	.36	.40	.33	.42	.27	.52	.32	.43	.31	.41	.33	.50	.33	.48	.37	5.75	4.15
45 to 55 years	.42	.29	.40	.29	.52	.41	.63	.50	.43	.32	.36	.30	.30	.27	.40	.25	.35	.27	.38	.35	.44	.34	.53	.41	5.17	4.00
55 to 65 years	.31	.33	.30	.24	.40	.40	.50	.58	.38	.36	.28	.29	.30	.26	.27	.24	.27	.21	.28	.27	.34	.30	.39	.38	4.02	3.85
65 to 75 years	.23	.28	.23	.21	.33	.30	.44	.59	.33	.33	.21	.25	.18	.19	.19	.24	.18	.16	.24	.26	.19	.20	.34	.35	3.08	3.35
75 years and over	.13	.21	.11	.17	.16	.21	.32	.48	.13	.25	.10	.15	.11	.15	.11	.13	.09	.10	.10	.14	.11	.18	.20	.33	1.67	2.49
Total	3.99	3.65	3.65	3.28	4.71	4.12	5.92	5.64	4.42	4.04	4.34	3.82	5.24	4.52	4.55	3.80	3.95	3.45	3.90	3.53	3.77	3.14	4.48	4.08	52.92	47.08

Interments of Deceased Persons for Six Years ending December 31, 1891.

LOCATION OF INTERMENTS.	1886.	1887.	1888.	1889.	1890.	AVERAGE FOR FIVE YEARS PRECEDING 1891.	1891.
City Cemetery	3,733	3,936	3,956	3,815	3,907	3,869.4	4,264
Cemeteries outside of New York City	31,848	33,276	34,352	33,961	34,495	33,586.4	37,675
Cemeteries inside of New York City	1,749	1,726	1,834	1,807	1,828	1,788.8	1,695
Ward's Island*	115	150	178	108	31	116.4	....
Total interments	37,330	38,938	40,142	39,583	40,230	39,244.6	43,634
Percentage of pauper burials to total	10.00	10.11	9.85	9.64	9.71	9.86	9.77

* Immigrant Hospital and Cemetery now abandoned.

Deaths in Institutions during the Year 1891.

Almshouse	570	Home for Incurables	50	Roosevelt Hospital	267
Aabies' Hospital	56	Homœopathic Hospital (Ward's Island)	264	St. Francis' Hospital	272
Bellevue Hospital	1,539	House of Rest for Consumptives	35	St. Joseph's Hospital	343
Bloomingdale Lunatic Asylum	38	Infant's Hospital (Randall's Island)	655	St. Luke's Hospital	175
Barge Office	5	Insane Asylum (Ward's Island)	286	St. Vincent's Hospital	273
Chambers Street Hospital	120	Lunatic Asylum (Blackwell's Island)	135	St. Mark's Hospital	64
Charity Hospital	605	Manhattan Hospital	54	Skin and Cancer Hospitals	97
Colored Home Hospital	127	Mount Sinai Hospital	261	Sloane Maternity Hospital	53
Foundling Asylum	498	New York Hospital	293	Ward's Island Emigrant Hospital	1
French Hospital	45	North Brother Island Hospital	132	Willard Parker Hospital	182
German Hospital	186	Nursery and Child's Hospital	115	Woman's Hospital	33
Gouverneur Hospital	182	Post-Graduate Hospital	106	Workhouse	54
Harlem Hospital	124	Presbyterian Hospital	180	Other institutions	620
Home for Aged (Little Sisters of the Poor)	109	Randall's Island Hospital	173	Total	9,377

RECAPITULATION.

Prisons	96	Institutions for Children	728	Other institutions	339
Hospitals	6,948	Homes for Aged	228	Total	9,377
Lunatic Asylums	459	Almshouse	579		

Deaths by Accidents and Negligence during the Year 1891.

Burns and scalds (including 14 by kerosene, 2 by turpentine, 1 by carbolic acid, 1 by explosion of gasoline, 2 by explosion of naphtha, 1 by benzine and the following deaths at fires: No. 197 Mercer street, 1; No. 902 Union avenue, 4; No. 37½ Allen street, 1; No. 201 East Seventy-fourth street, 1; No. 9 Spruce street, 1; Nos. 68-74 Park place, 35; No. 62 Park place, 1; Nassau and Fulton streets, 2; No. 52 Dominick street, 2; No. 39 Baxter street, 1; No. 12 East Ninetieth street, 1; One Hundred and Thirty-fifth street and North river, 1; No. 316 Delancey street, 1)	178	street, No. 68 West street, No. 113 West street, No. 206 West street, No. 10 First street, No. 535 Third avenue, No. 657 Sixth avenue, United States Hotel, Chambers Street Hospital; Convent Hill, One Hundred and Twenty-eighth street; Manhattan Athletic Club, No. 284 Greenwich street, No. 14 Washington street, No. 18 Grand street, No. 253 Division street, No. 100 Norfolk street, No. 31 Bowery, No. 203 Front street, 2 at No. 62 Eldridge street, and 3 at No. 10 East Eighty-sixth street)	78
Drowning (including 1 in sewer, 1 in vessel of water, 1 in tub of water, 1 in pail of water)	193	Killed by railroads (including 24 by Hudson River Railroad, 14 by New York and New Haven Railroad, 12 by elevated railroad, 9 by New York and Harlem Railroad, 2 at Grand Central Depot, 1 by New York and Northern Railroad, 2 by West Shore Railroad, 1 by engine at Kingsbridge station, 10 by railroads unspecified, 4 by Fourth avenue cars, 1 by Eighth avenue car, 4 by Second avenue cars, 3 by Third avenue cars, 1 by Sixth avenue car, 1 by Tenth avenue car, 3 by Broadway cars, 1 by Belt Line car, 1 by cable car, 1 by Madison avenue car, 1 by One Hundred and Tenth street car, 2 by Grand street cars, 2 by Christopher street cars, 1 by Houston street car, 1 each by Ninth avenue, First avenue, Seventh avenue, Grand, Houston and Forty-second streets, Madison street and Crosstown cars, and 5 by horse-cars not specified)	112
Fractures and contusions (including 28 by fall of heavy bodies, 10 by machinery, 7 by being crushed by elevators, 5 kicked by horses; knocked down by horses, 4; caving in of mine, embankment, wall, 3; while diving, 2; caught in elevators, 2; injured by elevator, 1; struck by pile-driver, 1; struck by crank of coal wagon, 1; while turning somersault, 1)	181	Killed by street vehicles exclusive of horse-cars	51
Suffocation (including 56 overlaid or at mother's breast, 1 by coal gas, 1 by vomiting under influence of chloroform, 1 by lodgment of meat in œsophagus, 1 by nipple of bottle being drawn into throat, 3 by lodgment of meat in throat, 1 by grain in grain car, 1 while intoxicated, 1 by food, 1 by ale, 1 by peanut shell, and the following deaths at fires: 4 at No. 37½ Allen street, 3 on steamship "City of Richmond," 2 at No. 213 East Twenty-ninth street, 1 at No. 112 Bleecker street, 25 at Nos. 68-74 Park place, 2 at No. 52 Dominick street)	110	Criminal abortion	4
Falls (including 79 from windows, 77 down stairs, 33 in streets, 27 thrown or falls from wagons, trucks, etc., 24 from roofs, 19 from fire-escapes, 18 from scaffolds, 18 from stoops, steps and down areas, 17 from buildings, 12 down hatchways, 10 down elevators, 10 down airshafts, 12 from ladders, 7 down holds of vessels, 3 falls from or thrown by horses, 1 on meat hook)	588	Electric current (including 1 at No. 3 East Thirteenth street and 1 at Fourth avenue and Twenty-first street)	2
Poison (including 2 by arsenic, 10 by carbolic acid, 1 by chloroform, 2 etherized during operation, 1 irritant poison, 1 laudanum, 6 by lead, 4 by morphine, 1 by muriatic acid, 7 by opium, 1 by oxalic acid, 1 by pyrogallic acid, 1 by phosphorus, 1 by Paris green, 1 by rough-on-rats, 3 by tobacco, and 35 by illuminating gas, viz.: 1 each at No. 107 East Seventy-third street, No. 112 East Forty-first street, No. 144 East Fifty-second street, No. 246 East Thirty-second street, No. 176 East Eightieth street, No. 247 East Fifty-first street, No. 220 East One Hundred and Twenty-seventh street, No. 105 East One Hundred and Sixteenth street, No. 211 East Twenty-fourth street, No. 50 West Twelfth street, No. 29 West Thirty-first street, No. 210 West Thirty-seventh street, No. 35 West One Hundred and Twenty-fifth		Explosion (including 3 by dynamite, 1 by blast, 1 by fire-extinguisher, 1 mineral water siphon, 1 kerosene)	8
		Wounds of various parts	54
		Fright (runaway horse)	1
		Decapitation (including 1 found headless in river)	2
		Sunstroke	95
		Shock from submersion	1
		Traumatic peritonitis by injection	1
		Old injuries unspecified	1
		Accident unspecified	1
		Total deaths by violence (exclusive of homicides, suicides and surgical operations)	1,464

Deaths from Surgical Operations during the Year 1891.

Abdominal section for intestinal perforation, rupture, shock	1	Laparotomy, removal of ovaries	1	Operation for salpingitis	3
Abdominal section for metritis	1	Laparotomy, peritonitis	2	Operation for removal of part of large thyroid	1
Abdominal section for cancer of ovaries	1	Laparotomy, tumor of uterus	1	Operation for rupture	1
Abortion	1	Laparotomy, hydro-salpinx	1	Operation to relieve intestinal obstruction	1
Amputation for gangrene of hand	1	Laparotomy, septicæmia	1	Operation for removal of uterine fibroma	1
Amputation of ankle joint	1	Laparotomy, pyo-salpinx	5	Operation for fistula, ulcer of perineum	1
Amputation of osteo-myelitis of femur	1	Laparotomy, tubercular degeneration of ovaries	1	Operation for typhlitis	1
Amputation of thigh, gangrene	1	Laparotomy, salpingitis	2	Operation for pyo-salpinx	1
Amputation of breast	2	Laparotomy, salpingo-oöphoritis	2	Operation for artificial anus, intestinal obstruction	1
Circumcision	7	Laparotomy, stricture of colon	1	Operation for removal of cystic tumor of head	1
Circumcision, erysipelas	2	Laparotomy, septic peritonitis	1	Operation for fibroids of uterus	1
Circumcision, gangrene of penis	1	Laparotomy (exploratory), enlarged spleen, hæmorrhagic diathesis	1	Operation for intestinal obstruction, pyo-salpinx	1
Circumcision, septicæmia	2	Laparotomy, intussusception	1	Operation for gangrene of leg	1
Colotomy inguinal, peritonitis, intestinal obstruction by adhesions after laparotomy for pyo-salpinx	1	Laparotomy, sarcoma of broad ligament	1	Operation on nose, meningitis	1
Craniotomy	2	Laparotomy, abdominal sinus	1	Operation for relief of abscesses, septicæmia	1
Curetting for endometritis, peritonitis	1	Laparotomy for ligation of uterine arteries	1	Operation for gall-stones	1
Curetting after placentitis	1	Laparotomy, tubercular peritonitis	1	Operation for hernia	1
Cystotomy, pubic, septicæmia	1	Laparotomy, obstruction of intestines	1	Operation for enlarged glands of groin	1
Cystotomy for calculus	1	Laparotomy, ovarian cyst	1	Operation (Alexander's) nephritis	1
Dislocation of clavicle, septicæmia	1	Laparotomy, invaginated intestines	1	Operation for fæcal fistula	1
Excision of hip joint	1	Ovariotomy	4	Operation for stricture of intestines	1
Excision of rectum, septicæmia	1	Ovariotomy, shock, pulmonary thrombosis	1	Operation for stricture of urethra, shock, hæmorrhage	1
Excision of tongue	1	Ovariotomy, septic peritonitis	2	Operation for cancer of breast, shock	1
Gastro-enterostomy for benign stenosis of pylorus	1	Ovariotomy, septicæmia	1	Perineal lithotomy	1
Gastrotomy, stricture of œsophagus	1	Ovariotomy, tumor	1	Perineal section for enlarged prostate	1
Herniotomy	1	Oöphorectomy	1	Removal of fibroid cyst of uterus	1
Hysterectomy, supra-pubic	1	Oöphorectomy, tubal disease	1	Removal of ovarian tumor	1
Hysterectomy, operation	1	Oöphorectomy, peritonitis	1	Removal of ovarian cyst	1
Hysterectomy, vaginal	2	Oöphorectomy, septic peritonitis	1	Removal of tumor	1
Hysterectomy, intraligamentous cyst	1	Operation, pneumonia	1	Trephining, otitis media	1
Internal urethrotomy, septicæmia	1	Operation for abscess of neck	1	Tracheotomy and thyrotomy for laryngeal tumor	1
Lithotomy, prostatotomy	1	Operation for fibro-cystic tumor of uterus	1	Urethrotomy, stricture	1
Laparotomy	7	Operation for intussusception	2	Vaginal hysterectomy, uræmia	1
Laparotomy, intestinal obstruction	2	Operation for abdominal tumor	1	Total	133

Former Condition of Persons Married.

	JANUARY.	FEBRUARY.	MARCH.	APRIL.	MAY.	JUNE.	JULY.	AUGUST.	SEPTEMBER.	OCTOBER.	NOVEMBER.	DECEMBER.	TOTAL.
Bachelors and spinsters	1,041	1,038	942	1,171	1,005	1,137	1,070	810	1,102	1,126	1,154	1,297	12,893
Bachelors and widows	70	71	62	98	77	73	68	57	57	99	70	88	890
Widowers and spinsters	83	101	66	126	92	108	89	72	87	113	115	103	1,155
Widowers and widows	51	47	50	57	40	63	80	49	66	55	57	69	684
Unknown (one or both)	....	....	....	9	1	3	11	....	1	5	1	2	33
Divorced (one or both)	13	10	11	9	6	9	3	7	4	10	16	11	109
Total	1,258	1,267	1,131	1,470	1,221	1,393	1,321	995	1,317	1,408	1,413	1,570	15,764

Ages of Bridegrooms and Brides during Year ending December 31, 1891.

Ages of Bridegrooms—Years.	Ages of Brides—Years.																					
	14	15	16	17	18	19	20	21 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	Unspecified.	Total Bridegrooms.
18	..	..	4	4	11	2	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	25
19	..	..	5	16	22	26	12	14	..	..	..	..	..	..	..	..	..	..	..	..	..	95
20	..	..	17	18	60	92	72	65	13	2	..	..	..	..	..	..	..	..	..	..	..	340
21 to 25	1	1	84	158	504	756	941	2,016	352	46	7	2	..	..	..	..	..	..	..	..	9	4,877
25 to 30	..	1	38	114	271	364	545	2,285	1,382	236	70	9	3	1	..	..	..	..	..	..	7	5,326
30 to 35	..	..	13	30	68	91	147	750	823	369	114	34	9	3	..	..	..	..	..	1	5	2,457
35 to 40	..	..	..	7	20	25	27	256	356	267	135	53	17	6	..	..	..	..	..	..	3	1,172
40 to 45	..	..	..	3	4	4	20	80	147	140	120	87	30	8	2	..	..	..	..	..	..	645
45 to 50	..	..	..	..	1	1	3	22	67	82	84	60	52	6	1	1	..	..	..	..	..	380
50 to 55	..	..	..	..	1	..	2	8	26	41	31	47	31	18	3	1	..	..	..	..	1	210
55 to 60	..	..	..	..	2	..	..	2	8	11	10	24	31	9	9	2	..	..	..	..	..	108
60 to 65	..	..	..	..	..	..	..	4	5	4	14	9	6	8	5	4	2	..	1	..	..	62
65 to 70	..	..	..	..	..	..	..	1	3	2	1	3	6	3	3	5	2	1	..	..	..	30
70 to 75	..	..	..	..	..	..	..	..	..	..	2	..	2	1	3	3	2	..	..	..	..	13
75 to 80	..	..	..	..	..	..	..	..	..	1	1	..	1	..	1	..	1	..	..	..	..	5
80 to 85	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	1	..	..	3
Unspecified	..	..	..	..	..	..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	13	16
Total Brides	1	2	161	350	964	1,361	1,770	5,507	3,185	1,201	589	328	188	64	27	17	7	1	2	1	38	15,764

Table of Births Reported by Months, for the Year 1891, showing Color, Nativity of Parents, Number Reported by Physicians and Midwives, Illegitimate and Twin Births.

Months.	Total.	White.		Colored.		Nativity of Parents.								Births Reported by		Births Apparently Illegitimate.	Pairs of Twins Reported.
						native.		foreign.		mixed.		unknown.					
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Physicians.	Midwives.		
January	3,770	1,946	1,779	27	18	494	453	1,151	1,016	287	298	41	30	1,825	1,945	47	27
February	3,324	1,641	1,644	16	23	448	405	913	971	253	250	43	41	1,352	1,572	79	24
March	3,582	1,804	1,736	23	19	462	450	1,015	990	295	269	55	46	1,946	1,636	100	29
April	3,328	1,682	1,604	15	27	423	435	955	901	279	253	40	42	1,721	1,607	104	26
May	3,053	1,547	1,483	10	13	431	393	853	827	223	236	50	40	1,559	1,494	79	34
June	3,332	1,698	1,594	22	18	452	414	937	930	278	224	53	44	1,792	1,540	103	*2
July	4,895	2,504	2,318	33	40	657	620	1,404	1,319	424	368	52	51	2,707	2,188	114	38
August	4,459	2,214	2,192	24	29	566	561	1,279	1,246	355	361	38	53	2,396	2,063	107	34
September	4,354	2,210	2,087	27	30	579	500	1,304	1,247	314	329	40	41	2,258	2,096	90	26
October	4,431	2,250	2,125	25	31	543	540	1,326	1,259	363	313	43	44	2,390	2,041	96	28
November	4,146	2,084	2,012	25	25	516	505	1,252	1,197	299	305	42	29	2,121	2,025	92	23
December	4,230	2,139	2,038	27	26	507	498	1,309	1,236	319	287	31	43	2,067	2,163	93	47
Total	46,904	23,719	22,612	274	299	6,078	5,774	13,698	13,139	3,689	3,494	528	504	24,134	22,770	1,104	361

*Also 1 trio of triplets

Deaths and Death-rate by Sex, Year 1891.

Months.	Number of Deaths.			Death-rate per 1,000 of Estimated Population.		
	Male.	Female.	Total.	Male.	Female.	Total.
January	1,741	1,593	3,334	12.43	11.37	23.80
February	1,592	1,434	3,026	11.37	10.24	21.60
March	2,056	1,798	3,854	14.68	12.84	27.52
April	2,584	2,464	5,048	18.45	17.59	36.04
May	1,928	1,764	3,692	13.76	12.59	26.36
June	1,894	1,668	3,562	13.52	11.92	25.43
July	2,288	1,973	4,261	16.33	14.09	30.42
August	1,988	1,660	3,648	14.19	11.85	26.04
September	1,723	1,508	3,231	12.30	10.77	23.07
October	1,709	1,540	3,249	12.20	10.99	23.19
November	1,647	1,373	3,020	11.76	9.80	21.56
December	1,954	1,780	3,734	13.95	12.71	26.66
Total	23,104	20,555	43,659	13.75	12.23	25.98

Births and Birth-rate by Sex, Year 1891.

Months.	Number of Births Registered	Birth-rate per 1,000.	Males.	Females.	Per-centage of Males to Total.	Percentage of Females to Total.
January	3,770	26.92	1,973	1,797	52.33	47.67
February	3,324	23.73	1,657	1,667	49.85	50.15
March	3,582	25.57	1,827	1,755	51.01	48.99
April	3,328	23.76	1,697	1,631	50.99	49.01
May	3,053	21.80	1,557	1,496	51.00	49.00
June	3,332	23.79	1,720	1,612	51.62	48.38
July	4,895	34.95	2,537	2,358	51.83	48.17
August	4,459	31.83	2,238	2,221	50.19	49.81
September	4,354	31.08	2,237	2,117	51.35	48.65
October	4,431	31.63	2,275	2,156	51.34	48.66
November	4,146	29.60	2,109	2,037	50.87	49.13
December	4,230	30.20	2,166	2,064	51.20	48.80
Total	46,904	27.19	23,993	22,911	51.15	48.85

Table showing the Increase or Decrease in 1891 from Certain Causes Comprising about 81 per cent. of all Deaths as Compared with the Average Annual Number of Deaths from the Same Causes for the previous Ten Years, Increased to Correspond with the Increase of Population.

Causes of Death.	Average for 10 Years, 1881–1890, Inclusive.	Same Increased for Increase of Population.	Deaths in 1891.	Increase in 1891.	Decrease in 1891.
Small-pox	96.2	113	2	....	111
Measles	678.2	796	663	....	133
Scarlatina	991.2	1,164	1,220	56	....
Typhus fever	30.0	35	1	....	34
Whooping-cough	472.6	555	352	....	203
Diphtheria	1,595.4	1,874	1,361	....	513
Typhoid fever, including typho-malarial fever	458.3	538	384	....	154
Diarrhœal diseases	3,656.2	4,296	3,587	....	709
Cancer	788.4	926	902	....	24
Phthisis and other tuberculous diseases	6,015.3	7,065	6,076	....	989
Premature birth	683.6	803	799	....	4
Diseases of the nervous system*	3,225.3	3,789	3,342	....	447
Diseases of the circulatory system	1,837.6	2,217	2,454	237	....
Diseases of the respiratory system, including croup	6,695.5	7,862	9,283	1,421	....
Diseases of the urinary system	2,316.1	2,720	2,696	....	24
Child-birth and puerperal fever	402.5	473	420	....	53
Accident	1,153.7	1,355	1,597	242	....
Homicide	64.0	75	56	....	19
Suicide	215.0	253	306	53	....
All other causes	6,326.5	7,431	8,158	727	....
Total	37,751.6	44,340	43,659	2,736	3,417
Balance	.....	.....	.....	....	681

* Sunstroke included from 1881 to 1887, excluded from 1888 to 1891, inclusive.

The table thus shows a saving of 681 lives of persons in 1891, who would have died during the year if the mortality had been equal to the average annual mortality for the previous ten years.

Cases of Sickness Reported Weekly from Diphtheria, Scarlatina and Measles, by Wards, for the Year 1891.

WARDS.	DISEASES.	WEEK ENDING— JANUARY— 3	10	17	24	31	FEBRUARY— 7	14	21	28	MARCH— 7	14	21	28	APRIL— 4	11	18	25	MAY— 2	9	16	23	30	JUNE— 6	13	20	27
First	Diphtheria	..	1	..	..	1	2	1	1	..	1	..	..	..	..	1	4	2	3	2	..	..	2	1	1	..	..
	Scarlatina	2	2	2	1	1	3	2	3	1	..	5	1	3	2	3	1	1	2	3	2	2	..	1	1	1	1
	Measles	..	..	3	3	..	1	13	..	10	2	..	..	4	7	5	9	10	8	4	9	9	11	8	23	11	39
Second	Diphtheria	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Scarlatina	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Measles	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..
Third	Diphtheria	..	..	..	..	..	..	..	..	..	1	1	..	1	..	..	..	..	..	..	..	..	..	1	1	1	..
	Scarlatina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Measles	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2	3
Fourth	Diphtheria	..	1	..	2	..	..	2	1	..	1	2	..	..	..	1	..	..	..	..	2	..	2	..	1	2	1
	Scarlatina	1	1	..	2	1	..	2	2	..	1	1	..	2	..	2	1	1	1	1	2	6	3	1	6	1	..
	Measles	1	2	10	3	9	1	1	..	..	..	3	2	1	1	1	..	..	2	5	..	..	1	3	2	3	..
Fifth	Diphtheria	..	1	..	2	..	..	..	2	2	..	..	..	..	..	..	1	..	..	1	..	1	..	2	..	..	2	1
	Scarlatina	1	2	4	1	..	4	..	3	..	1	..	2	..	3	2	2	1	1	1	..	1	..	..	..	..	..
	Measles	1	..	5	2	4	..	..	1	..	1	..	..	2	3	1	..	2	2	..	2	1	..	2	..	..	..
Sixth	Diphtheria	..	1	..	1	..	1	2	1	..	..	2	1	2	1	1	1	..	..	..	..	4	3	2	..	2	..	..
	Scarlatina	..	..	3	2	1	..	1	4	2	1	1	2	3	1	1	2	1	7	6	4	4	3	4	3	1	2
	Measles	2	2	1	1	..	3	1	3	..	2	2	3	2	4	7	2	1	3	3	4	4	6	1	4	10	7
Seventh	Diphtheria	6	6	3	4	6	2	2	6	5	4	3	3	4	2	2	5	4	6	1	3	2	4	4	5	5	3
	Scarlatina	2	3	5	9	11	6	10	11	11	6	6	5	11	20	7	8	6	9	12	15	13	12	14	10	7	15
	Measles	7	9	28	20	15	15	5	16	3	13	15	12	11	19	11	10	8	19	12	15	17	13	20	20	28	13
Eighth	Diphhteria	..	1	..	1	2	6	2	1	4	3	3	3	2	1	..	1	2	1	1	..	1	2	3	5	1	1
	Scarlatina	1	1	3	7	3	..	6	2	..	1	1	4	5	3	4	2	3	7	6	10	4	3	6	9	7	2
	Measles	3	4	5	2	5	4	8	6	5	5	3	6	3	3	4	1	14	11	6	7	3	7	10	16	4	8
Ninth	Diphtheria	2	3	1	2	..	1	5	..	1	4	1	2	5	3	3	1	2	..	1	1	..	2	1	1	1	2
	Scarlatina	1	3	4	2	10	6	4	4	6	4	5	5	6	13	7	3	9	8	5	1	3	3	6	5	2	8
	Measles	8	6	13	14	11	31	25	37	30	25	24	32	33	39	24	25	31	16	14	18	11	4	12	8	5	10
Tenth	Diphtheria	4	6	5	3	7	8	6	6	11	6	5	1	3	4	4	4	1	4	9	3	5	3	8	4	1	2
	Scarlatina	7	18	16	3	11	16	21	26	9	12	7	8	11	14	7	6	6	7	8	16	12	12	7	14	8	5
	Measles	11	11	18	10	10	9	6	9	10	7	8	12	6	8	15	5	11	19	15	10	10	19	23	23	20	30
Eleventh	Diphtheria	6	3	6	5	7	7	7	13	5	8	5	4	1	2	9	6	1	2	10	2	6	5	5	5	5	4
	Scarlatina	14	8	9	9	7	17	13	10	11	9	17	12	13	10	16	14	19	10	13	18	14	20	17	14	12	10
	Measles	4	16	11	6	16	19	14	11	10	6	11	13	12	9	12	14	8	7	6	13	12	8	16	18	6	13
Twelfth	Diphtheria	30	23	13	19	19	16	16	22	21	10	7	16	19	21	13	26	15	10	13	20	12	14	17	5	12	9
	Scarlatina	24	35	24	24	29	27	23	19	26	24	30	32	26	40	46	40	29	17	18	26	34	28	21	19	23	21
	Measles	70	103	86	106	125	109	107	57	80	91	86	105	80	78	49	53	57	57	42	59	43	54	57	43	43	20
Thirteenth	Diphtheria	3	3	4	7	4	3	1	3	4	2	3	..	4	6	6	5	2	3	4	5	6	6	6	2	5	2
	Scarlatina	12	5	4	10	13	12	9	12	6	11	9	10	11	12	12	12	9	19	18	17	13	28	14	14	17	10
	Measles	4	4	12	12	8	13	13	2	7	12	16	7	14	9	5	7	17	11	20	11	15	4	25	27	24	12
Fourteenth	Diphtheria	..	3	3	2	3	2	2	6	2	2	5	2	3	1	3	4	1	4	2	2	3	3	2	3	1	3
	Scarlatina	..	1	..	1	3	1	7	2	2	3	3	4	2	3	3	2	4	3	2	7	3	4	9	1	3	1
	Measles	..	4	2	1	3	4	4	4	2	10	7	4	3	4	3	11	2	7	6	12	11	15	10	18	12	10
Fifteenth	Diphtheria	1	2	1	..	..	2	1	..	1	3	..	..	..	3	1	1	..	2	..	1	..	1	1	1	2	..
	Scarlatina	1	1	..	1	2	1	1	1	1	2	2	1	1	..	1	1	1	2	2	4	1	4	4	5	3	..
	Measles	1	..	2	2	1	4	16	..	14	11	23	9	4	8	2	11	6	7	7	6	6	10	3	3	6	3
Sixteenth	Diphtheria	5	2	2	1	6	4	3	2	..	2	1	5	2	1	2	1	1	2	2	3	1	3	3	3	4	1
	Scarlatina	1	1	2	2	9	..	2	1	3	2	1	8	9	2	8	2	4	8	5	4	5	1	2	2	..	1
	Measles	6	..	2	4	7	2	8	9	2	3	4	8	10	9	13	13	31	29	21	9	18	13	13	5	1	8
Seventeenth	Diphtheria	4	..	11	8	7	3	5	7	7	7	11	12	6	5	3	4	13	4	8	11	8	6	8	8	7	5
	Scarlatina	5	7	9	17	12	10	17	18	13	13	16	6	20	20	16	15	9	12	30	14	18	18	24	14	8	11
	Measles	13	11	15	20	20	20	13	21	16	18	13	6	14	19	16	22	24	24	35	24	29	14	15	18	6	13
Eighteenth	Diphtheria	6	5	3	4	1	6	3	5	3	3	..	5	2	6	3	2	5	1	3	5	1	1	5	3	3	1
	Scarlatina	2	9	1	3	3	1	3	4	9	6	5	2	5	13	6	9	7	4	4	10	10	9	8	5	3	2
	Measles	10	15	12	10	10	14	7	11	3	11	9	11	8	6	17	8	24	20	14	18	20	17	16	12	11	3
Nineteenth	Diphtheria	14	18	15	20	21	26	16	13	20	18	20	19	11	26	11	12	20	10	13	15	12	15	12	9	7	10
	Scarlatina	12	21	16	20	35	16	18	24	13	30	24	23	26	35	47	50	40	33	29	39	41	35	31	21	19	16
	Measles	28	50	32	80	59	57	69	75	73	86	99	88	80	97	101	71	90	99	58	120	63	60	74	44	19	16
Twentieth	Diphtheria	6	5	8	4	2	6	8	3	4	8	6	6	5	5	3	8	2	4	8	2	2	4	7	4	1	1
	Scarlatina	4	7	3	2	4	7	10	5	6	7	5	4	4	3	10	7	5	12	8	16	15	11	12	6	17	8
	Measles	19	20	35	21	22	23	26	6	8	12	15	21	18	15	18	26	18	18	17	19	17	19	17	19	20	8
Twenty-first	Diphtheria	5	6	4	1	1	3	5	2	5	2	1	2	2	2	1	10	1	6	1	1	1	2	4	2	4	..
	Scarlatina	4	6	2	4	5	4	4	6	8	3	4	9	6	5	5	6	9	4	7	11	10	8	5	6	6	1
	Measles	32	33	30	32	15	9	13	20	20	32	12	25	7	13	4	3	9	14	13	7	23	12	5	3	4	6
Twenty-second	Diphtheria	7	3	8	8	9	13	12	11	13	6	4	6	8	8	7	5	8	2	10	6	7	8	10	11	10	9
	Scarlatina	9	9	13	11	4	13	12	10	7	15	6	10	11	16	17	12	7	12	15	13	15	11	10	16	16	10
	Measles	68	95	80	78	70	67	72	28	58	48	53	27	30	25	27	18	18	10	9	15	13	22	14	22	9	11
Twenty-third	Diphtheria	5	2	3	7	5	9	4	10	11	14	12	4	2	1	8	7	1	2	6	3	1	7	3	4	..	3
	Scarlatina	9	10	9	12	7	7	12	15	11	5	7	10	1	9	6	5	6	3	5	6	5	6	5	6	8	2
	Measles	9	3	10	22	21	42	40	51	32	26	21	14	12	9	4	10	6	5	8	9	5	8	3	6	4	3
Twenty-fourth	Diphtheria	1	..	..	2	5	1	3	..	..	..	1	1	..	3	..	..	1	..	1	..	..	1	..	..	..	1
	Scarlatina	1	3	15	3	3	2	1	3	2	2	..	1	1	1	2	..	4	3	1	6	..	1	3	2	2	5
	Measles	1	2	1	3	2	..	1	..	1	..	1	..	..	1	3	3	8	2	10	5	16	12	22	9	5	8

Cases of Sickness Reported Weekly from Diphtheria, Scarlatina and Measles, by Wards, for the Year 1891.—Continued.

WARDS.	DISEASES.	WEEK ENDING— JULY— 4	11	18	25	AUGUST— 1	8	15	22	29	SEPTEMBER— 5	12	19	26	OCTOBER— 3	10	17	24	31	NOVEMBER— 7	14	21	28	DECEMBER— 5	12	19	26	JAN. 2 1892.	*TOTAL.
First	Diphtheria	1	..	..	..	..	1	..	..	2	..	..	1	..	..	..	1	..	..	1	1	..	1	4	6	3	..	..	45
	Scarlatina	..	1	1	4	..	..	..	..	..	..	..	1	3	1	4	1	..	..	..	3	3	..	1	1	3	..	1	72
	Measles	19	25	17	9	8	2	1	6	6	3	2	3	6	2	3	2	2	2	13	9	1	7	..	7	5	6	3	361
Second	Diphtheria	..	..	..	..	..	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
	Scarlatina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	2
	Measles	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Third	Diphtheria	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	1	10
	Scarlatina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Measles	1	1	1	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	14
Fourth	Diphtheria	1	4	4	..	..	1	3	..	..	1	1	2	..	..	..	1	2	..	1	1	..	2	3	1	3	52
	Scarlatina	3	2	6	..	2	5	1	4	..	..	..	3	1	..	..	..	1	1	..	..	1	1	..	..	..	..	..	..	68
	Measles	..	1	3	4	1	10	2	5	1	1	1	2	1	..	..	..	1	2	..	..	..	..	..	..	..	..	..	..	85
Fifth	Diphtheria	..	..	1	..	5	2	..	1	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	3	1	..	5	..	35
	Scarlatina	1	1	..	..	1	..	..	..	..	..	..	1	..	..	..	..	2	1	1	1	..	..	2	..	2	1	1	43
	Measles	..	2	3	1	1	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	37
Sixth	Diphtheria	..	..	3	..	4	1	2	2	2	..	1	3	..	..	2	..	2	2	..	..	..	..	2	2	2	3	4	62
	Scarlatina	3	1	2	..	..	1	3	1	1	..	2	3	2	1	..	..	..	..	1	2	5	3	1	4	6	4	1	106
	Measles	2	12	10	7	3	3	..	1	..	..	..	1	3	..	..	..	..	1	..	..	..	..	..	..	1	..	..	120
Seventh	Diphtheria	2	1	1	3	6	2	1	6	6	1	3	4	1	2	5	3	1	5	6	8	2	10	2	3	3	2	11	194
	Scarlatina	8	20	8	11	15	10	11	3	5	5	3	5	6	4	5	4	4	4	3	5	4	14	5	8	9	5	10	436
	Measles	24	18	16	20	14	10	15	6	1	5	2	1	3	..	1	4	6	..	5	1	..	2	2	2	3	3	..	531
Eighth	Diphtheria	2	3	..	..	3	2	1	1	5	1	..	..	2	..	..	..	2	..	2	1	..	..	1	..	3	1	4	81
	Scarlatina	2	5	6	8	..	..	2	1	1	4	1	2	1	..	..	..	1	2	..	1	3	1	1	1	..	6	5	153
	Measles	7	11	5	10	7	2	4	1	..	..	2	1	..	1	..	1	..	..	..	..	..	..	..	..	..	1	1	..	204
Ninth	Diphtheria	1	1	1	1	..	..	1	2	1	2	1	1	..	2	3	1	2	3	..	2	2	2	2	2	1	4	3	84
	Scarlatina	2	5	2	3	3	1	..	1	1	..	5	2	1	1	..	2	1	1	4	2	3	3	4	10	3	11	6	209
	Measles	9	13	6	8	7	2	4	2	6	1	..	..	..	2	..	1	..	..	..	..	1	1	..	2	..	..	..	563
Tenth	Diphtheria	1	7	8	5	6	..	1	3	4	6	8	4	3	4	6	5	5	..	4	6	4	1	6	5	5	7	2	235
	Scarlatina	4	12	9	3	8	3	7	6	5	8	5	4	..	..	2	7	3	2	5	2	6	16	12	9	25	7	12	462
	Measles	27	39	16	13	14	13	11	6	4	7	1	5	1	5	5	12	3	4	2	6	4	5	10	18	11	13	9	588
Eleventh	Diphtheria	1	9	3	1	4	2	1	4	1	3	2	4	6	5	3	1	3	6	1	6	6	4	3	2	..	9	4	227
	Scarlatina	12	12	7	10	6	5	4	7	7	3	6	4	8	5	2	9	5	6	7	2	1	4	..	12	8	8	8	490
	Measles	5	17	5	11	5	6	5	4	6	11	2	1	2	1	1	3	..	1	2	1	1	..	1	2	3	6	8	397
Twelfth	Diphtheria	10	22	11	8	11	23	8	13	14	5	6	10	11	15	13	21	22	12	25	15	26	21	23	18	28	24	20	823
	Scarlatina	9	16	12	5	12	8	10	4	9	3	5	5	6	2	10	5	8	12	11	16	19	31	21	18	32	34	38	1,042
	Measles	15	25	18	16	6	9	4	4	4	2	3	5	21	17	13	10	11	3	6	7	3	3	6	9	9	15	9	2,048
Thirteenth	Diphtheria	4	4	1	3	4	3	..	2	2	3	1	2	2	2	3	1	1	4	4	2	3	3	1	3	4	3	5	166
	Scarlatina	8	13	5	4	8	7	2	6	1	5	1	2	1	..	2	4	1	1	2	2	4	1	10	4	8	9	6	424
	Measles	14	16	32	20	13	10	8	13	6	1	2	2	2	1	1	3	4	2	2	3	3	1	5	5	3	4	9	492
Fourteenth	Diphtheria	..	3	1	1	1	..	2	3	..	2	3	1	..	2	2	1	3	2	2	1	..	1	3	1	2	1	2	107
	Scarlatina	2	1	5	2	4	2	2	1	1	2	..	1	..	..	1	5	1	3	6	5	3	2	1	4	2	1	7	138
	Measles	11	8	13	8	10	5	3	3	1	5	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..	3	242
Fifteenth	Diphtheria	4	1	..	..	2	..	..	..	..	2	1	..	..	..	..	..	..	..	..	1	..	..	1	4	4	..	..	3	46
	Scarlatina	3	4	..	1	..	..	..	..	1	1	1	..	..	..	..	1	..	..	1	1	2	1	2	1	..	3	..	65
	Measles	1	2	3	1	1	3	2	..	..	..	..	1	..	..	..	..	1	1	1	1	..	..	..	..	..	..	..	..	132
Sixteenth	Diphtheria	3	1	..	..	2	1	..	1	2	2	6	4	2	1	3	2	..	2	2	5	4	5	4	6	7	5	5	132
	Scarlatina	1	..	..	..	..	3	1	1	3	1	1	5	2	4	1	..	2	..	3	4	1	4	7	4	4	6	11	153
	Measles	5	5	8	6	9	3	7	5	..	5	2	4	..	3	..	..	..	..	1	..	1	..	..	..	..	..	5	311
Seventeenth	Diphtheria	4	7	13	8	6	12	4	3	2	2	6	5	5	5	2	8	3	6	3	3	8	13	8	5	10	4	5	334
	Scarlatina	3	9	15	7	5	9	5	3	4	4	2	3	6	7	6	3	5	10	7	13	5	12	4	7	18	15	11	565
	Measles	10	16	10	5	10	1	2	1	8	4	1	1	..	1	1	1	3	..	3	..	2	11	9	10	14	11	14	595
Eighteenth	Diphtheria	..	1	2	2	2	1	..	2	2	..	2	1	..	1	3	3	3	1	3	4	5	3	8	7	6	6	5	152
	Scarlatina	2	5	2	3	1	..	..	1	..	2	1	1	1	2	3	6	3	4	2	4	6	6	5	7	6	8	7	229
	Measles	3	2	5	3	1	3	1	2	1	4	2	2	2	..	..	..	1	..	..	1	..	2	1	..	..	..	5	348
Nineteenth	Diphtheria	9	17	8	7	11	9	7	7	9	10	13	6	10	10	9	5	8	14	23	22	24	8	8	18	21	30	9	721
	Scarlatina	20	19	13	27	16	14	9	6	6	15	11	8	6	12	6	9	17	20	13	24	28	25	32	32	31	43	62	1,226
	Measles	13	7	13	1	5	3	8	2	1	1	1	6	2	2	1	2	3	11	1	8	19	19	38	10	47	16	31	2,031
Twentieth	Diphtheria	7	3	5	8	2	..	4	5	4	3	13	10	9	15	9	12	16	18	16	16	8	12	17	8	18	21	13	388
	Scarlatina	8	7	9	14	8	7	7	3	9	10	2	2	10	3	7	4	7	3	2	5	7	3	3	8	6	7	8	363
	Measles	6	13	11	9	3	2	1	3	3	..	1	1	..	1	..	..	2	..	4	..	..	2	..	..	..	1	..	521
Twenty-first	Diphtheria	1	3	2	2	1	..	1	..	1	1	1	1	7	2	4	6	2	2	4	6	4	2	..	7	7	4	5	145
	Scarlatina	2	..	2	5	4	2	..	..	..	..	1	2	1	1	4	3	6	3	6	4	6	2	6	12	5	5	4	230
	Measles	3	5	5	3	3	3	..	..	1	1	..	..	1	..	1	1	2	..	..	..	..	..	..	1	1	1	1	397
Twenty-second	Diphtheria	4	6	10	3	5	5	7	4	7	7	7	8	3	4	7	4	6	13	11	5	5	11	10	17	13	13	17	414
	Scarlatina	6	16	15	7	9	5	7	6	5	3	2	6	7	5	8	3	7	4	2	13	8	13	10	12	15	17	16	518
	Measles	8	10	12	8	6	..	6	3	2	1	2	1	2	1	..	1	..	..	1	7	9	16	11	2	11	16	17	1,072
Twenty-third	Diphtheria	1	6	4	5	7	4	10	2	5	1	3	2	4	3	2	3	2	5	2	4	4	10	3	2	10	8	4	245
	Scarlatina	1	2	7	3	1	4	2	1	3	1	1	2	2	..	..	1	2	1	3	7	8	3	4	2	3	5	10	257
	Measles	2	1	2	..	2	..	..	..	..	1	..	..	1	1	..	..	..	..	..	..	..	..	1	..	4	..	3	392
Twenty-fourth	Diphtheria	..	..	1	1	..	..	..	..	4	..	2	..	3	2	2	..	1	1	1	1	1	1	2	..	3	1	..	47
	Scarlatina	2	1	1	..	1	2	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	1	1	2	1	3	1	..	85
	Measles	3	1	4	..	3	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	1	1	..	..	..	131

* Exclusive of week ending January 3, 1891.

SUMMARIES FOR PREVIOUS YEARS.

The following tables have been compiled, partly from the published, but largely from the manuscript records of the Health Department. Any imperfections, of inconsistencies with previous publications of the Department are explained in foot-notes.

The tables of deaths reported by weeks it has been thought desirable to print, because the weekly fluctuations show better than the monthly the effects of unfavorable meteorological conditions and of those dimly understood causes which induce the rise and decline of epidemics of the eruptive fevers. For the years 1871, 1872, and a part of 1873 and 1877, the actual weekly deaths are given in the table of diarrhœal diseases in children, the number of reported deaths not having been preserved. Elsewhere only the reported deaths are given in these weekly tables, so that they are uniform and suitable for comparison with current weekly reports. When the disturbing influence of the duration of the disease is taken into account, it will be seen that there is little, if any, difference between the actual number of deaths weekly and the number reported (or registered) as indicators of the varying sanitary condition of a community.

Total Deaths Reported, by Weeks, Since 1871.

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Date of beginning—Week ending	Jan. 7.	Jan. 6.	Jan. 4.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 6.	Jan. 5.	Jan. 4.	Jan. 10.	Jan. 8.	Jan. 7.	Jan. 6.	Jan. 5.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 7.	Jan. 5.	Jan. 4.	Jan. 10
First	507	498	583	490	632	547	500	503	555	548	778	758	618	576	677	710	809	723	785	1,202	744
Second	494	475	508	508	677	508	459	563	569	457	719	761	683	597	643	652	814	763	739	1,424	786
Third	534	477	558	509	664	600	416	489	632	555	667	817	622	560	650	716	789	749	779	1,151	748
Fourth	478	504	528	451	576	531	441	477	639	489	707	802	636	592	677	652	735	802	708	872	737
Fifth	488	574	533	479	600	566	452	513	624	521	718	797	589	584	775	612	793	831	783	782	736
Sixth	500	584	573	540	594	610	423	471	602	532	709	839	618	627	724	736	751	740	818	765	755
Seventh	504	561	552	553	627	567	410	533	554	519	683	892	623	694	761	674	742	796	786	742	751
Eighth	491	621	551	487	605	599	447	524	551	541	694	766	678	592	823	697	697	836	870	757	797
Ninth	515	594	519	487	650	651	557	522	600	541	717	814	719	628	776	747	773	803	857	730	735
Tenth	524	641	528	522	619	679	526	571	555	529	750	800	669	624	777	776	731	799	877	696	813
Eleventh	499	591	551	557	530	619	495	483	604	511	674	751	739	633	700	758	734	800	863	769	840
Twelfth	537	655	569	524	605	588	498	567	623	543	713	763	734	672	782	793	697	861	822	772	895
Thirteenth	566	686	522	509	565	592	442	530	557	519	697	846	727	648	791	726	762	768	860	783	1,100
Fourteenth	508	704	541	580	572	578	482	509	534	560	722	762	746	611	740	701	771	772	862	758	1,216
Fifteenth	544	691	518	584	572	550	502	509	471	628	789	820	721	625	696	698	825	787	861	750	1,347
Sixteenth	538	677	538	479	580	522	454	563	512	565	780	798	676	618	759	696	760	734	868	721	1,208
Seventeenth	461	696	502	550	556	554	480	503	579	562	814	787	630	636	638	657	729	782	830	802	961
Eighteenth	508	667	500	488	578	556	472	467	543	603	770	803	703	689	705	659	760	829	731	741	910
Nineteenth	514	764	509	561	543	548	440	455	509	585	822	777	668	595	657	623	748	856	782	739	873
Twentieth	474	645	561	452	543	483	480	470	499	542	693	760	728	616	654	626	698	768	744	705	777
Twenty-first	499	646	538	483	524	459	488	439	444	683	639	688	643	648	658	635	732	703	684	751	798
Twenty-second	551	588	496	489	476	468	430	454	445	501	660	719	634	603	621	577	627	701	629	656	772
Twenty-third	469	560	486	460	497	460	430	434	490	479	633	659	658	630	593	597	609	720	688	821	743
Twenty-fourth	449	632	455	399	489	459	414	462	441	707	637	608	551	621	662	623	680	680	718	695	952
Twenty-fifth	486	641	474	492	522	443	422	469	473	1,038	699	661	539	634	678	637	788	801	760	773	803
Twenty-sixth	604	769	475	491	616	636	569	554	562	1,297	906	780	716	771	809	752	1,024	1,038	864	875	922
Twenty-seventh	710	1,569	630	561	743	838	673	665	752	922	1,144	695	1,051	929	920	1,111	1,276	905	956	1,010	957
Twenty-eighth	857	1,056	690	790	890	1,298	831	741	710	813	990	1,084	1,110	955	1,019	892	1,102	1,037	1,187	1,157	1,074
Twenty-ninth	654	918	895	873	955	997	754	718	833	641	965	1,016	873	870	1,094	932	935	963	964	941	947
Thirtieth	581	791	860	751	815	744	717	732	600	625	882	1,217	776	888	926	887	814	1,002	904	815	866
Thirty-first	628	720	889	720	719	609	650	586	636	654	838	939	711	726	648	776	928	814	850	907	763
Thirty-second	630	645	739	721	691	690	625	560	710	627	849	828	662	708	756	722	741	846	838	815	1,005
Thirty-third	569	751	688	680	674	612	553	569	593	601	683	754	673	657	623	736	758	802	751	732	773
Thirty-fourth	537	788	615	618	592	572	596	519	483	600	679	701	693	756	642	700	698	754	769	751	826
Thirty-fifth	554	638	613	604	674	610	644	553	492	529	764	620	558	692	665	732	693	831	675	716	736
Thirty-sixth	555	571	635	583	628	506	539	530	530	569	866	609	590	665	646	653	781	716	709	717	747
Thirty-seventh	520	627	578	545	634	494	493	458	543	533	688	613	589	851	659	661	670	736	624	686	728
Thirty-eighth	504	533	598	529	568	487	507	474	501	571	705	635	595	686	600	615	693	682	688	660	811
Thirty-ninth	552	503	524	585	586	458	522	501	451	529	778	547	530	647	543	677	677	680	641	639	737
Fortieth	466	479	507	488	529	450	513	516	498	588	610	594	541	609	553	633	633	621	605	650	722
Forty-first	486	487	452	554	487	436	465	516	493	609	690	516	546	621	531	715	640	702	573	613	747
Forty-second	441	483	543	526	457	467	534	505	415	570	679	630	524	648	569	676	616	661	641	618	688
Forty-third	478	440	514	519	482	424	429	448	509	544	648	630	541	654	535	667	673	673	612	601	737
Forty-fourth	404	478	454	535	455	432	447	450	494	583	673	579	543	622	504	680	565	630	618	602	733
Forty-fifth	413	513	465	543	486	413	459	444	492	605	617	563	521	628	562	715	658	627	615	671	774
Forty-sixth	420	444	525	521	451	415	466	518	503	546	679	582	550	659	557	683	670	600	607	643	714
Forty-seventh	437	439	519	521	492	413	424	461	471	638	664	553	601	603	566	715	625	621	612	583	671
Forty-eighth	427	473	492	521	484	427	409	474	557	691	708	584	540	701	580	780	658	691	566	654	675
Forty-ninth	436	507	525	478	539	483	418	455	492	631	680	578	572	712	611	835	669	700	661	672	734
Fiftieth	467	507	478	551	492	467	455	495	480	651	748	598	587	658	583	795	677	684	640	704	800
Fifty-first	452	527	466	565	541	432	402	475	499	647	762	617	617	627	638	805	700	779	665	731	889
Fifty-second	472	445	472	584	556	473	474	502	511	673	741	581	563	664	638	767	710	772	762	705	969
.....	....	....	548	....	....	....	....	....	508	....	....	....	....	709	....	....	....	....	....	764	....
Date of ending—Week ending	Dec. 30.	Dec. 28.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 30.	Dec. 29.	Dec. 28.	Jan. 3.	Jan. 1.	Dec. 31.	Dec. 30.	Dec. 29.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 31.	Dec. 29.	Dec. 28.	Jan. 3.	Jan. 2.

Deaths Reported from Bronchitis, by Weeks, Since Week ending February 8, 1873.

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Date of beginning—Week ending	Jan. 7.	Jan. 6.	Jan. 4.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 6.	Jan. 5.	Jan. 4.	Jan. 10	Jan. 8.	Jan. 7.	Jan. 6.	Jan. 5.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 7.	Jan. 5.	Jan. 4.	Jan. 10
First	..	..	..	21	35	23	33	24	19	20	40	50	31	32	38	51	50	48	40	99	27
Second	..	..	..	26	31	31	22	37	28	22	39	58	33	38	28	48	54	46	40	122	38
Third	..	..	..	30	32	22	21	19	42	26	34	50	37	27	31	43	49	47	45	95	44
Fourth	..	..	..	27	41	32	27	23	39	22	39	42	31	37	41	40	45	46	40	68	41
Fifth	..	..	..	20	26	31	24	32	35	33	32	40	40	42	47	42	45	48	37	66	40
Sixth	..	..	34	36	27	33	31	27	41	22	41	33	25	29	48	44	52	50	48	55	37
Seventh	..	..	24	34	27	27	27	25	35	33	51	43	29	42	42	43	43	48	51	48	28
Eighth	..	..	29	17	33	40	32	36	26	25	44	45	36	29	47	46	34	53	59	43	30
Ninth	..	..	35	22	38	32	38	41	35	34	34	52	45	27	56	51	44	49	61	43	25
Tenth	..	..	16	33	31	38	28	38	41	37	36	54	40	32	39	50	43	48	45	50	44

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Eleventh	..	..	24	30	23	42	31	25	28	32	36	39	35	33	40	37	30	52	64	56	45
Twelfth	..	..	31	34	32	49	33	28	33	30	27	33	38	32	48	44	44	34	52	52	47
Thirteenth	..	..	21	20	30	40	24	34	24	22	36	42	51	37	52	36	62	47	55	55	60
Fourteenth	..	..	30	24	16	37	28	36	32	32	31	28	43	27	45	30	34	48	37	50	83
Fifteenth	..	..	23	22	32	26	22	27	22	32	48	45	43	28	40	28	38	32	41	51	94
Sixteenth	..	..	20	25	27	22	24	28	28	32	33	34	44	34	39	26	42	32	42	41	86
Seventeenth	..	..	25	22	26	21	17	35	30	38	33	34	36	37	27	35	49	52	33	49	53
Eighteenth	..	..	31	15	22	23	20	25	29	27	40	46	42	29	25	27	44	45	34	38	33
Nineteenth	..	..	20	32	30	26	13	26	23	34	35	33	28	37	33	31	36	36	36	39	43
Twentieth	..	..	22	25	24	13	19	32	30	27	23	45	34	32	42	29	31	44	32	37	47
Twenty-first	..	"	23	14	12	14	15	20	16	37	25	30	31	25	22	21	45	27	25	34	40
Twenty-second	..	..	20	18	13	19	15	22	18	22	17	33	28	22	27	18	23	49	24	34	28
Twenty-third	..	..	8	20	12	19	14	12	18	14	20	32	27	20	29	24	26	26	28	41	28
Twenty-fourth	..	..	14	8	12	14	18	15	19	34	23	30	11	25	25	22	30	25	19	24	37
Twenty-fifth	..	..	9	9	14	12	9	20	10	24	19	13	21	17	21	22	23	28	20	25	22
Twenty-sixth	..	..	18	10	11	14	12	14	25	19	27	19	18	18	27	18	25	31	28	28	22
Twenty-seventh	..	..	13	12	22	11	10	20	7	10	25	19	20	23	23	19	22	24	27	23	21
Twenty-eighth	..	..	10	7	9	20	11	11	15	11	19	26	10	22	17	23	22	24	19	16	31
Twenty-ninth	..	..	15	11	13	11	14	12	16	11	18	15	11	16	26	15	17	33	24	29	8
Thirtieth	..	..	13	12	11	10	15	18	12	7	15	16	13	13	18	20	18	19	24	15	14
Thirty-first	..	..	10	12	13	14	4	7	18	13	9	10	12	15	14	18	9	28	22	20	19
Thirty-second	..	..	9	6	10	21	10	12	15	15	16	18	12	19	17	16	27	24	24	17	16
Thirty-third	..	..	17	14	6	16	9	10	9	16	13	11	15	14	14	18	20	18	27	24	17
Thirty-fourth	..	..	10	12	11	18	11	10	11	24	14	20	12	26	15	14	19	18	20	27	19
Thirty-fifth	..	..	16	13	7	19	10	11	9	21	22	14	23	15	22	20	30	21	29	22	26
Thirty-sixth	..	..	11	15	10	15	9	21	15	18	25	14	14	15	15	22	30	22	21	25	25
Thirty-seventh	..	..	10	18	18	12	15	15	14	21	24	17	15	14	20	22	31	24	27	25	24
Thirty-eighth	..	..	9	16	21	13	12	15	20	19	18	23	20	16	28	23	29	30	32	23	28
Thirty-ninth	..	..	9	12	19	17	19	16	21	18	16	18	23	21	20	28	30	29	27	16	23
Fortieth	..	..	13	17	15	16	13	15	11	25	12	12	14	24	26	20	28	27	22	26	20
Forty-first	..	..	11	15	18	17	16	16	15	20	24	17	22	22	18	41	39	28	24	29	31
Forty-second	..	..	14	20	22	22	19	21	22	26	21	18	17	27	21	35	25	41	29	29	27
Forty-third	..	..	13	21	25	21	17	28	33	23	27	25	23	27	21	32	46	29	29	22	32
Forty-fourth	..	..	13	21	20	32	33	20	34	32	32	29	20	30	29	36	34	34	26	31	23
Forty-fifth	..	..	22	21	24	16	23	24	23	24	24	29	31	35	21	36	42	37	33	30	29
Forty-sixth	..	..	19	29	23	20	24	32	32	22	37	32	28	44	24	43	32	34	33	40	26
Forty-seventh	..	..	32	17	16	20	18	33	34	37	36	30	25	26	31	31	31	34	38	32	34
Forty-eighth	..	..	31	26	22	29	17	30	29	49	37	31	23	43	44	44	35	45	18	25	35
Forty-ninth	..	..	33	30	27	19	19	17	37	44	37	33	26	43	24	56	43	38	31	35	34
Fiftieth	..	..	22	22	20	31	30	30	25	39	42	29	45	40	41	49	44	41	50	29	43
Fifty-first	..	..	22	31	27	38	26	24	25	41	39	30	36	44	51	56	34	39	40	38	45
Fifty-second	..	..	36	18	26	34	28	19	32	48	38	38	43	37	43	53	50	51	50	22	54
...	..	..	24	..	..	..	..	..	34	..	..	...	..	48	..	..	..	..	..	49	..
Date of ending—Week ending	Dec.30.	Dec.28.	Jan. 3.	Jan. 2.	Jan. 1.	Dec.30.	Dec.29.	Dec.28.	Jan. 3.	Jan. 1.	Dec.31.	Dec.30.	Dec.29.	Jan. 3.	Jan. 2.	Jan. 1.	Dec.31.	Dec.29.	Dec.28.	Jan. 3.	Jan.2.

Deaths Reported from Diarrhœal Diseases, by Weeks, Since 1871.

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Date of beginning—Week ending	Jan. 7.	Jan. 6.	Jan. 4.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 6.	Jan. 5.	Jan. 4.	Jan. 10.	Jan. 8.	Jan. 7.	Jan. 6.	Jan. 5.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 7.	Jan. 5.	Jan. 4.	Jan. 10
First	16	24	18	8	11	4	12	6	14	11	5	14	7	12	10	11	8	7	14	19	10
Second	24	24	20	13	11	5	6	16	8	8	9	18	12	13	25	6	13	8	12	21	9
Third	21	23	21	14	8	8	5	8	5	9	7	7	11	8	9	6	8	7	18	16	13
Fourth	12	16	18	7	10	10	14	5	7	8	12	7	9	11	15	13	12	13	8	11	11
Fifth	14	15	23	5	15	12	7	14	13	10	22	11	14	6	14	8	12	7	18	10	11
Sixth	18	25	25	10	13	12	5	8	5	6	9	7	6	19	8	9	16	20	8	18	14
Seventh	18	13	16	7	21	3	7	14	5	12	10	17	10	15	11	6	15	12	12	10	14
Eighth	22	14	24	12	7	4	12	10	14	12	7	13	18	11	14	7	5	13	15	12	15
Ninth	30	9	18	7	16	13	12	7	12	9	9	10	14	13	14	9	14	18	15	13	10
Tenth	23	18	22	4	7	10	9	8	11	9	10	13	9	11	10	7	15	22	15	9	11
Eleventh	18	17	21	12	8	12	13	11	14	11	10	18	11	14	7	10	16	10	12	14	21
Twelfth	17	21	25	11	19	15	13	8	12	12	17	17	17	17	14	7	10	11	16	7	7
Thirteenth	24	17	24	8	17	11	9	8	7	12	14	15	11	22	23	12	8	11	10	12	19
Fourteenth	24	22	19	12	14	7	14	13	13	12	11	10	11	10	17	11	14	18	8	9	28
Fifteenth	24	28	28	10	9	11	10	14	4	6	11	16	7	11	10	16	16	16	13	14	20
Sixteenth	28	37	29	11	9	13	5	17	10	13	12	20	12	13	14	13	17	19	16	13	7
Seventeenth	27	34	28	12	7	13	16	10	12	11	19	15	18	14	17	12	11	16	21	13	17
Eighteenth	28	29	21	10	15	14	25	9	14	18	13	26	16	15	18	12	19	16	12	19	16
Nineteenth	24	35	21	8	13	25	14	16	12	13	29	14	18	9	24	13	20	14	15	23	20
Twentieth	28	40	23	19	27	14	17	19	9	19	32	16	20	16	17	18	9	16	15	13	20
Twenty-first	32	34	22	18	29	15	25	13	18	47	23	18	18	22	19	21	19	12	13	20	18
Twenty-second	41	35	20	16	10	13	16	15	15	33	26	24	25	27	22	20	20	19	19	17	23
Twenty-third	43	48	24	23	20	29	23	32	17	59	54	19	29	21	26	28	28	20	22	36	36
Twenty-fourth	83	62	34	30	26	32	27	23	28	162	39	23	50	50	47	37	52	27	55	64	111
Twenty-fifth	110	119	48	45	42	37	60	48	74	440	98	57	77	72	95	89	131	102	140	121	137
Twenty-sixth	208	266	62	60	80	149	167	101	114	626	263	141	180	161	212	189	330	247	241	208	240
Twenty-seventh	264	639	169	142	188	322	276	184	280	364	444	163	392	291	297	378	493	282	318	360	283
Twenty-eighth	314	487	273	323	359	622	379	281	269	296	370	389	435	329	395	304	382	368	452	367	339

WARD.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Twenty-ninth	261	438	405	392	518	460	331	305	295	198	337	371	349	295	381	327	305	296	292	274	270
Thirtieth	192	354	389	305	337	286	268	278	179	174	244	533	246	252	298	261	226	264	265	176	244
Thirty-first	153	251	373	283	273	226	212	180	193	188	246	361	202	182	159	203	217	201	182	205	177
Thirty-second	173	203	297	243	228	225	192	160	238	145	252	281	167	153	181	159	182	193	202	168	234
Thirty-third	168	267	255	226	244	201	186	157	135	136	157	225	143	154	143	147	181	191	148	137	138
Thirty-fourth	156	266	180	196	192	180	191	139	122	133	152	173	133	192	127	149	158	145	147	147	141
Thirty-fifth	160	198	171	151	224	195	222	137	103	110	177	138	91	146	121	148	135	167	103	130	135
Thirty-sixth	145	160	173	140	183	113	141	109	108	100	182	116	99	156	102	111	122	128	119	110	112
Thirty-seventh	125	168	125	137	150	93	107	81	108	76	154	123	72	193	104	126	109	121	93	109	96
Thirty-eighth	91	110	125	118	107	84	83	77	78	82	133	102	72	118	84	107	90	89	98	83	116
Thirty-ninth	78	99	93	120	85	48	87	70	64	59	127	76	73	85	59	97	62	74	57	62	90
Fortieth	54	83	81	72	72	40	71	62	58	53	95	77	55	85	65	75	45	60	51	70	86
Forty-first	35	73	53	60	46	31	48	65	53	52	81	68	40	90	35	54	33	43	43	40	73
Forty-second	53	65	56	44	22	27	49	55	49	36	75	53	25	72	31	53	32	31	45	41	36
Forty-third	44	55	44	49	34	23	34	28	37	31	45	44	28	61	24	36	25	18	32	23	35
Forty-fourth	29	46	34	37	18	19	27	26	37	21	49	34	27	49	14	24	13	15	25	17	21
Forty-fifth	21	47	31	30	17	16	23	22	7	18	38	27	19	34	7	26	22	15	8	20	13
Forty-sixth	25	34	23	24	8	10	18	23	29	16	32	32	11	15	16	21	18	11	11	11	21
Forty-seventh	16	29	15	12	12	7	15	10	10	11	24	17	17	22	11	14	8	8	16	8	11
Forty-eighth	15	30	19	18	14	6	8	10	12	18	18	13	19	21	17	15	13	17	15	8	4
Forty-ninth	15	15	17	10	13	8	7	11	10	9	18	10	9	12	12	18	6	15	19	10	10
Fiftieth	18	23	14	13	6	15	13	2	11	7	8	18	9	13	5	21	16	9	16	9	16
Fifty-first	18	22	11	12	11	10	11	8	9	3	16	11	13	3	12	11	15	8	11	11	13
Fifty-second	18	15	13	12	12	8	13	8	7	17	15	14	18	9	13	11	4	17	16	9	13
.....	..	..	7	..	..	..	..	..	9	..	..	..	..	14	..	..	..	..	..	10	..
Date of ending—Week ending	Dec. 30.	Dec. 28.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 30.	Dec. 29.	Dec. 28.	Jan. 5.	Jan. 1.	Dec. 31.	Dec. 30.	Dec. 29.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 31.	Dec. 29.	Dec. 28.	Jan. 3.	Jan. 2.

Deaths Reported from Diarrhœal Diseases of Children under Five Years, by Weeks, Since 1871.

WEEK.	*1871.	*1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Date of beginning—Week ending	Jan. 7.	Jan. 6.	Jan. 4.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 6.	Jan. 5.	Jan. 4.	Jan. 10.	Jan. 8.	Jan. 7.	Jan. 6.	Jan. 5.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 7.	Jan. 5.	Jan. 4.	Jan. 10
First	11	14	*16	4	4	2	10	4	9	6	2	4	5	5	9	7	4	6	10	13	7
Second	17	20	*16	12	5	3	5	11	5	6	8	13	7	11	18	5	11	6	11	15	4
Third	12	21	*16	9	3	....	3	4	2	5	5	6	9	5	4	6	7	3	14	13	10
Fourth	16	8	*16	4	8	5	10	....	2	6	7	5	5	9	8	7	10	9	6	9	9
Fifth	5	17	*11	4	10	7	6	12	7	6	19	9	9	4	8	2	9	5	15	10	7
Sixth	15	14	*21	9	11	11	3	4	3	4	6	7	4	13	4	4	9	11	4	10	12
Seventh	11	13	*15	4	10	....	6	10	2	11	8	12	7	8	7	2	9	10	9	5	12
Eighth	20	9	*17	10	4	3	*9	7	7	9	7	10	11	7	7	3	5	12	10	9	11
Ninth	18	14	*16	7	10	9	*6	6	7	9	8	6	11	11	8	8	9	12	9	10	7
Tenth	22	10	*18	3	5	6	*8	7	6	7	7	11	4	6	6	2	12	17	13	8	9
Eleventh	17	11	*13	9	6	7	*4	11	10	9	7	14	9	7	6	6	11	2	9	11	17
Twelfth	14	21	*19	5	15	12	....	5	7	9	10	14	12	12	10	4	9	7	10	7	5
Thirteenth	21	14	*14	5	11	10	*6	7	3	10	8	11	7	11	16	3	4	8	5	8	10
Fourteenth	21	16	*17	12	7	6	*12	11	9	11	7	7	8	6	11	5	8	13	7	5	20
Fifteenth	21	24	*25	10	6	8	*6	12	2	5	8	9	3	8	7	12	12	13	9	11	16
Sixteenth	29	37	*17	9	5	11	*7	15	7	9	8	17	10	8	9	6	14	18	12	11	5
Seventeenth	21	33	*25	11	6	9	*19	8	5	10	14	10	15	11	12	10	7	12	18	12	14
Eighteenth	26	25	*18	8	14	10	*17	8	9	15	11	20	13	11	15	8	15	13	8	10	14
Nineteenth	19	32	*19	8	10	21	*13	14	7	11	27	12	13	4	20	8	13	6	13	23	19
Twentieth	25	32	*19	18	24	13	*18	16	6	15	29	15	16	9	15	12	7	12	15	9	17
Twenty-first	33	38	*22	15	27	12	*15	11	14	43	18	15	12	18	15	13	15	9	10	16	16
Twenty-second	36	32	*17	14	9	12	*17	11	12	31	23	20	23	20	18	11	16	16	14	14	21
Twenty-third	36	46	*18	21	20	25	*16	26	14	54	43	18	26	17	20	23	22	16	19	30	35
Twenty-fourth	83	59	*33	27	24	28	*27	17	21	158	34	20	40	40	42	35	49	23	49	60	104
Twenty-fifth	118	152	*59	38	37	32	*64	42	67	425	93	52	69	69	90	73	124	93	125	111	129
Twenty-sixth	214	291	*57	52	76	141	*181	96	110	588	254	132	170	156	205	174	315	230	221	198	228
Twenty-seventh	279	620	*195	133	178	313	*281	180	266	333	422	154	377	277	275	366	462	268	297	344	270
Twenty-eighth	303	448	*252	316	342	596	*360	268	255	271	342	371	408	351	365	281	359	345	435	346	317
Twenty-ninth	235	403	*418	374	501	433	*285	291	268	174	304	355	335	277	342	298	274	276	276	241	250
Thirtieth	158	287	*363	288	298	269	*254	258	162	145	217	478	217	215	267	232	192	229	237	161	213
Thirty-first	147	202	346	262	251	220	*167	157	171	161	213	318	177	153	133	181	186	171	164	193	159
Thirty-second	151	199	275	221	210	206	*169	141	213	132	225	244	138	136	148	136	163	168	183	149	211
Thirty-third	152	248	224	209	226	180	*176	145	121	105	130	191	116	132	116	125	161	162	132	126	112
Thirty-fourth	138	241	157	176	178	162	*180	121	110	114	138	146	105	160	105	122	129	125	134	128	132
Thirty-fifth	140	166	148	138	210	178	*197	122	92	95	156	108	73	135	100	125	123	147	88	121	119
Thirty-sixth	143	149	159	128	169	102	*124	97	103	85	162	96	83	134	82	101	117	118	106	99	97
Thirty-seventh	100	127	109	128	135	83	*94	74	97	69	134	96	60	160	90	109	91	107	74	97	84
Thirty-eighth	79	98	110	98	97	68	*71	67	66	72	115	89	62	111	71	94	70	80	90	76	104
Thirty-ninth	60	81	85	111	75	43	*71	59	57	49	106	62	60	56	48	87	51	62	46	55	79
Fortieth	34	65	70	61	64	30	*54	54	52	47	74	58	42	60	48	65	38	57	43	60	76
Forty-first	36	60	43	51	36	23	*37	55	47	45	65	53	31	75	23	46	22	35	33	32	60
Forty-second	44	56	43	37	20	19	*40	43	44	32	63	44	18	64	21	45	24	26	33	38	31
Forty-third	29	51	36	42	25	21	*17	25	30	-	39	32	22	50	15	31	17	16	19	21	27

*Actual Deaths.

WEEK.	*1871.	*1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Forty-fourth	20	34	28	33	15	14	*23	19	28	13	38	27	18	39	9	21	8	11	15	16	15
Forty-fifth	22	35	26	24	15	11	*13	17	4	15	31	20	12	21	4	17	15	10	5	17	11
Forty-sixth	15	13	15	18	6	10	*13	15	20	7	14	22	7	12	10	17	10	9	6	8	17
Forty-seventh	10	21	9	8	7	3	*11	7	7	7	19	8	14	16	11	11	5	7	10	3	6
Forty-eighth	18	20	19	14	11	6	*6	8	9	11	10	9	13	20	12	10	10	10	10	7	3
Forty-ninth	15	14	13	7	5	6	*7	7	7	4	11	4	5	9	7	10	4	4	12	6	8
Fiftieth	12	17	11	11	5	9	*7	2	9	3	6	12	7	9	3	14	8	5	11	6	6
Fifty-first	17	11	6	11	7	7	*7	5	6	1	11	5	9	3	9	8	11	6	9	7	11
Fifty-second	21	7	8	8	8	5	*12	1	6	13	8	10	11	8	8	6	4	15	13	7	9
.....	....	....	6	....	....	....	....	....	4	....	....	....	....	9	....	....	....	....	....	6	....
Date of ending—Week ending	Dec. 30.	Dec. 28.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 30.	Dec. 29.	Dec. 28.	Jan. 3.	Jan. 1.	Dec. 31.	Dec. 30.	Dec. 29.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 31.	Dec. 29.	Dec. 28.	Jan. 3.	Jan. 2.

* Actual Deaths.

Deaths Reported from Diphtheria and Croup, by Weeks, Since 1871.

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Date of beginning—Week ending	Jan. 7.	Jan. 6.	Jan. 4.	Jan. 10	Jan. 9.	Jan. 8.	Jan. 6.	Jan. 5.	Jan. 4.	Jan. 10.	Jan. 8.	Jan. 7.	Jan. 6.	Jan. 5.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 7.	Jan. 5.	Jan. 4.	Jan. 10.
First	20	21	42	50	74	77	22	27	42	28	95	81	48	32	52	60	83	85	63	41	30
Second	15	22	30	47	93	74	20	65	35	30	75	59	42	27	35	55	74	64	67	40	41
Third	19	18	39	38	68	93	29	43	28	35	60	75	44	31	31	64	72	88	59	33	33
Fourth	18	24	35	40	61	72	27	37	32	36	72	65	34	27	47	56	62	76	56	35	40
Fifth	22	32	31	40	58	77	23	37	30	31	77	81	37	28	43	47	76	66	57	36	39
Sixth	14	30	38	45	58	80	24	34	27	43	57	66	31	33	55	74	69	71	64	47	47
Seventh	14	11	32	51	71	52	29	45	21	28	71	57	39	40	53	57	58	62	65	42	44
Eighth	10	20	45	40	76	79	32	40	33	22	61	65	37	35	47	48	47	50	72	41	51
Ninth	19	28	29	34	73	75	37	35	32	25	52	65	36	37	44	63	77	62	53	47	48
Tenth	20	25	31	41	75	74	39	41	29	23	63	66	30	31	51	64	79	52	66	44	54
Eleventh	16	24	36	40	53	65	29	39	21	15	66	54	39	35	46	54	59	64	62	49	43
Twelfth	19	16	20	32	51	53	33	44	22	23	69	59	36	26	46	50	53	76	55	41	29
Thirteenth	17	22	20	39	57	47	23	37	20	24	60	73	32	30	47	41	66	58	64	36	44
Fourteenth	12	24	32	36	49	62	27	40	22	23	60	64	39	32	39	38	66	39	63	41	44
Fifteenth	19	14	31	53	62	48	27	31	18	20	60	50	43	38	47	45	66	43	75	42	50
Sixteenth	16	11	29	32	63	44	31	39	16	16	66	48	37	25	41	57	57	50	57	48	36
Seventeenth	13	20	18	40	63	40	31	28	14	23	72	54	22	29	36	44	72	52	70	45	23
Eighteenth	14	16	19	33	45	60	21	31	20	25	76	51	30	40	48	49	61	66	70	39	35
Nineteenth	12	23	23	30	42	50	18	30	23	32	65	59	24	33	39	36	63	43	58	39	26
Twentieth	10	23	25	29	54	57	24	25	13	44	50	50	26	28	31	45	93	71	60	40	18
Twenty-first	11	9	22	29	53	39	17	25	17	24	53	52	34	32	48	54	66	69	59	32	43
Twenty-second	17	15	26	33	55	45	31	29	15	14	59	46	43	38	39	44	73	58	45	39	29
Twenty-third	8	10	26	26	56	41	15	25	15	16	50	41	21	37	38	40	58	55	52	30	34
Twenty-fourth	7	12	25	23	61	28	25	28	15	31	79	39	31	39	45	52	52	51	59	38	31
Twenty-fifth	5	15	22	31	47	37	19	22	17	36	69	46	18	22	44	41	75	51	42	36	25
Twenty-sixth	9	15	35	39	61	32	18	25	21	31	75	39	26	28	35	43	69	51	44	33	32
Twenty-seventh	8	10	23	30	45	30	12	16	6	33	62	28	34	31	41	54	44	39	24	21	33
Twenty-eighth	5	8	25	28	50	28	26	17	8	24	62	35	24	19	41	33	48	47	35	24	37
Twenty-ninth	9	9	32	33	44	13	23	14	11	26	54	21	17	23	30	41	44	41	24	21	26
Thirtieth	5	8	24	26	43	25	17	8	12	33	60	31	26	27	24	44	32	44	36	40	27
Thirty-first	5	8	33	20	35	13	15	18	11	26	63	21	21	18	24	43	26	32	36	35	24
Thirty-second	8	13	26	39	42	22	13	10	14	29	42	17	31	28	34	36	36	33	19	18	27
Thirty-third	10	12	30	31	34	29	10	10	12	44	43	15	24	27	19	35	23	48	26	17	27
Thirty-fourth	8	7	29	27	32	16	17	15	13	31	64	27	24	14	24	34	30	19	20	16	25
Thirty-fifth	6	14	25	28	49	22	17	18	13	32	49	35	23	30	36	26	26	33	29	28	28
Thirty-sixth	6	17	36	34	43	16	22	19	16	42	55	17	26	18	26	27	50	26	25	18	31
Thirty-seventh	7	15	48	30	60	19	24	12	18	37	43	12	37	17	37	35	32	20	32	18	32
Thirty-eighth	9	30	38	28	48	24	31	18	13	44	52	23	18	32	38	27	51	25	18	29	30
Thirty-ninth	15	23	43	29	60	27	32	18	19	47	63	22	22	24	23	37	48	20	23	14	39
Fortieth	14	16	42	42	67	49	35	22	13	65	52	22	32	31	28	39	48	25	23	17	23
Forty-first	13	36	40	57	69	39	35	37	27	77	61	20	22	32	43	56	43	26	26	24	38
Forty-second	10	24	58	72	62	36	44	27	18	62	65	27	28	46	32	58	48	22	33	20	37
Forty-third	23	32	53	60	63	30	34	28	28	68	88	45	37	50	39	77	68	32	27	31	51
Forty-fourth	11	24	53	67	69	30	38	21	42	84	57	37	33	49	45	63	50	49	26	30	64
Forty-fifth	18	30	45	75	64	32	40	22	38	69	66	32	37	57	47	81	68	33	28	24	53
Forty-sixth	14	31	55	79	70	32	40	33	30	76	52	32	42	69	42	74	57	36	31	44	44
Forty-seventh	20	39	64	74	60	34	42	34	45	108	74	39	41	48	50	70	67	38	28	35	48
Forty-eighth	27	44	62	63	88	34	39	44	45	100	68	38	28	43	76	84	73	50	27	42	41
Forty-ninth	21	38	60	57	61	56	28	30	35	82	58	36	39	68	68	87	64	52	29	45	43
Fiftieth	23	37	50	77	86	38	46	35	37	72	74	31	34	55	61	80	72	40	38	42	55
Fifty-first	16	36	50	78	77	31	44	34	31	80	85	36	32	44	67	67	81	60	29	48	67
Fifty-second	19	28	56	70	77	42	35	37	42	74	68	34	42	51	59	65	72	57	37	45	50
.....	..	..	65	..	..	..	..	..	30	..	..	..	..	58	..	..	..	..	..	39	..
Date of ending—Week ending	Dec. 30.	Dec. 28.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 30.	Dec. 29.	Dec. 28.	Jan. 3.	Jan. 1.	Dec. 31.	Dec. 30.	Dec. 29.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 31.	Dec. 29.	Dec. 28.	Jan. 3	Jan. 2.

Deaths Reported from Measles, by Weeks, Since 1871.

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Date of beginning—Week ending	Jan. 7.	Jan. 6.	Jan. 4.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 6.	Jan. 5.	Jan. 4.	Jan. 10.	Jan. 8.	Jan. 7.	Jan. 6.	Jan. 5.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 7.	Jan. 5.	Jan. 4.	Jan. 10
First	28	2	5	6	..	10	..	14	1	20	2	18	16	11	28	..	61	7	25	7	15
Second	22	5	3	7	..	10	1	7	..	19	5	28	16	7	37	1	73	6	24	6	18
Third	33	..	6	7	2	9	2	8	..	33	3	41	11	5	33	2	68	4	29	2	33
Fourth	17	4	5	5	4	11	..	8	..	23	4	36	14	7	41	1	52	7	22	3	32
Fifth	22	2	9	6	1	10	1	8	..	24	5	35	12	13	30	1	75	9	29	10	13
Sixth	23	11	10	7	..	17	..	7	..	21	8	46	15	7	29	..	49	3	26	10	19
Seventh	15	11	8	8	1	14	..	6	1	20	4	37	7	12	30	1	56	9	24	6	18
Eighth	20	12	5	8	2	14	..	11	..	28	6	28	12	6	29	1	24	4	12	6	10
Ninth	19	15	7	7	3	17	2	13	..	13	6	23	20	3	31	1	25	2	26	10	15
Tenth	20	11	8	12	1	9	2	21	..	27	11	31	10	4	32	1	30	3	21	11	15
Eleventh	9	9	4	7	..	14	..	6	1	11	5	15	21	8	20	1	28	8	20	11	16
Twelfth	11	11	4	10	2	17	1	12	..	13	9	24	21	8	28	4	17	3	16	11	12
Thirteenth	6	13	1	9	1	16	..	12	2	13	9	44	20	11	21	1	15	3	13	14	22
Fourteenth	10	3	6	7	2	18	2	11	1	12	9	29	24	12	25	3	10	4	13	13	18
Fifteenth	12	10	4	8	..	11	2	13	2	18	7	33	29	15	25	2	18	5	19	14	23
Sixteenth	12	14	3	5	2	17	2	16	4	15	9	8	27	4	27	4	9	10	13	31	20
Seventeenth	9	10	1	16	2	8	2	11	2	18	7	24	21	9	17	1	5	19	12	32	14
Eighteenth	10	15	7	8	..	9	5	10	4	25	10	25	22	14	30	3	4	5	8	27	21
Nineteenth	5	17	8	14	2	9	4	3	2	18	16	28	23	21	20	1	9	16	8	26	21
Twentieth	5	13	11	10	5	11	8	11	4	9	13	29	35	13	13	2	9	8	7	37	19
Twenty-first	13	16	10	5	6	10	6	9	2	18	15	40	18	20	13	7	8	8	5	30	15
Twenty-second	8	12	5	15	6	13	3	8	3	8	21	30	19	24	13	5	3	19	5	24	15
Twenty-third	10	12	5	10	4	9	8	5	6	3	24	16	29	28	10	6	6	16	10	37	24
Twenty-fourth	7	16	10	5	9	9	7	6	6	5	21	21	19	21	20	5	6	18	8	25	16
Twenty-fifth	3	27	11	11	3	9	4	2	6	7	23	17	19	30	20	9	6	25	5	10	20
Twenty-sixth	3	18	10	7	6	4	8	5	6	3	17	19	18	30	19	9	5	23	6	27	16
Twenty-seventh	8	36	12	16	3	10	6	5	4	10	13	9	17	31	11	14	5	20	3	23	13
Twenty-eighth	12	15	14	11	8	6	4	3	8	4	6	24	22	23	14	9	12	19	4	25	12
Twenty-ninth	6	24	11	11	7	7	5	..	7	4	10	20	16	31	16	14	4	16	4	11	16
Thirtieth	2	15	11	7	7	2	6	1	9	2	8	12	21	33	7	14	6	23	6	9	11
Thirty-first	4	5	14	5	2	3	7	2	3	3	10	6	12	18	3	8	5	17	1	14	8
Thirty-second	4	13	8	4	8	1	6	1	5	1	8	6	10	19	6	10	1	11	3	10	8
Thirty-third	5	9	1	3	3	1	2	..	8	3	6	7	13	12	2	10	1	13	1	9	5
Thirty-fourth	3	9	7	2	2	..	3	1	6	2	4	4	11	7	6	4	..	9	1	12	3
Thirty-fifth	1	9	1	9	4	..	3	3	3	1	5	7	3	13	2	7	2	16	1	8	5
Thirty-sixth	..	1	3	7	3	1	2	1	1	..	5	3	4	9	1	6	..	8	2	7	1
Thirty-seventh	2	..	1	..	1	..	2	1	6	3	1	4	5	13	1	7	1	8	1	7	4
Thirty-eighth	1	2	2	1	2	1	..	4	5	4	1	1	3	6	1	3	2	11	..	6	4
Thirty-ninth	1	..	..	2	1	3	3	..	5	..	2	..	1	5	1	4	3	7	1	2	5
Fortieth	..	..	1	2	..	..	6	2	4	1	4	5	5	5	..	6	1	9	2	3	4
Forty-first	..	2	3	1	1	..	..	..	4	..	..	5	5	6	..	8	1	11	1	4	10
Forty-second	..	2	6	4	2	5	1	..	4	..	1	2	3	5	1	9	4	9	1	7	4
Forty-third	..	4	5	1	2	4	4	..	..	..	..	6	8	4	1	19	2	6	2	5	3
Forty-fourth	1	6	5	3	..	5	1	2	4	..	..	6	4	10	1	20	4	7	..	7	3
Forty-fifth	1	1	5	2	3	2	1	..	7	..	1	6	3	8	4	42	4	8	4	13	4
Forty-sixth	3	2	2	1	3	2	..	1	9	1	4	2	4	15	4	36	6	12	3	11	4
Forty-seventh	3	1	4	..	6	..	3	2	8	3	8	6	7	16	1	45	6	7	6	12	5
Forty-eighth	1	3	3	1	4	1	..	2	4	3	3	4	6	24	1	42	5	12	3	12	6
Forty-ninth	1	2	2	..	5	..	1	2	10	1	15	13	6	23	3	66	..	22	5	12	8
Fiftieth	1	3	7	2	6	..	4	2	14	1	12	8	11	16	..	65	6	19	3	15	17
Fifty-first	2	3	2	1	7	2	5	1	20	1	11	9	13	27	2	60	6	26	5	15	2
Fifty-second	..	2	4	3	10	1	1	1	22	6	19	7	5	20	1	65	10	21	7	19	13
....	..	..	8	..	..	..	..	..	12	..	..	..	..	22	..	..	..	..	..	22	..
Date of ending—Week ending	Dec. 30.	Dec. 28.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 30.	Dec. 29.	Dec. 28.	Jan. 3.	Jan. 1.	Dec. 31.	Dec. 30.	Dec. 29.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 31.	Dec. 29.	Dec. 28.	Jan. 3.	Jan. 2

Deaths Reported from Phthisis, by Weeks, Since 1871.

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Date of beginning—Week ending	Jan. 7.	Jan. 6.	Jan. 4.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 6.	Jan. 5.	Jan. 4.	Jan. 10.	Jan. 8.	Jan. 7.	Jan. 6.	Jan. 5.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 7.	Jan. 5.	Jan. 4.	Jan. 10
First	88	75	93	62	75	78	84	95	85	87	125	94	89	96	104	125	121	80	93	197	110
Second	85	71	76	78	98	56	79	89	82	68	103	99	120	101	97	97	122	105	97	211	98
Third	90	71	98	87	89	102	85	88	86	110	115	111	102	89	107	127	114	110	96	194	111
Fourth	90	78	94	55	84	82	81	80	106	82	105	102	111	92	100	89	104	109	101	160	105
Fifth	89	87	74	87	93	97	77	98	101	97	117	96	87	96	130	105	109	110	108	134	93
Sixth	93	77	101	81	95	83	87	79	102	92	99	117	119	85	102	118	105	86	117	149	90
Seventh	90	88	83	86	109	78	68	100	101	86	95	120	119	126	105	99	133	113	93	133	95
Eighth	101	122	90	83	77	79	90	90	92	89	96	100	118	90	130	103	106	134	115	117	103
Ninth	102	94	91	81	101	90	90	82	96	87	116	111	92	111	106	111	105	130	106	122	104
Tenth	94	114	100	74	105	102	89	101	85	102	122	103	112	99	134	130	100	115	110	111	119
Eleventh	79	80	87	93	81	83	97	87	104	90	100	104	127	95	98	107	123	111	105	99	102
Twelfth	83	100	87	74	114	83	74	110	89	103	103	97	121	122	131	119	99	117	92	121	124
Thirteenth	101	102	87	90	90	106	66	83	93	87	101	119	132	112	125	109	118	115	129	105	137
Fourteenth	78	88	77	92	93	78	82	79	88	90	118	109	125	108	101	122	114	128	109	99	128
Fifteenth	91	80	96	86	104	72	92	86	92	96	98	113	128	116	116	120	133	129	109	113	127
Sixteenth	95	82	99	78	98	87	77	96	79	105	106	117	106	93	109	108	132	103	96	82	106

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Seventeenth	90	102	88	92	98	87	72	75	99	81	130	109	104	95	106	130	99	127	96	97	114
Eighteenth	71	89	93	77	92	93	87	82	90	80	113	123	118	107	99	108	100	130	93	102	99
Nineteenth	86	90	80	81	78	86	82	80	71	97	89	102	91	99	108	118	95	105	103	99	112
Twentieth	78	70	103	75	63	74	73	83	75	71	107	99	122	101	111	119	104	114	82	88	108
Twenty-first	61	76	81	84	79	73	89	71	70	82	106	106	107	95	92	107	106	103	101	104	103
Twenty-second	88	86	68	76	72	68	77	77	84	76	90	106	99	91	89	105	83	84	88	86	99
Twenty-third	60	78	79	65	63	68	73	81	92	56	100	80	91	94	97	108	89	90	94	104	98
Twenty-fourth	55	75	67	46	66	70	81	94	84	90	75	91	82	89	82	95	101	80	81	74	85
Twenty-fifth	76	71	75	69	58	76	57	77	52	95	88	86	84	112	81	91	102	90	97	90	70
Twenty-sixth	85	59	65	66	62	78	65	78	53	92	74	97	81	99	101	103	94	72	85	80	72
Twenty-seventh	80	81	69	72	76	73	62	81	75	84	82	81	103	82	94	116	79	94	70	81	90
Twenty-eighth	65	83	67	56	76	83	78	79	75	83	89	105	113	86	95	84	87	96	81	113	91
Twenty-ninth	78	78	67	69	78	85	71	57	86	68	94	117	95	84	86	101	95	83	95	96	82
Thirtieth	88	72	69	58	72	103	75	83	68	108	105	97	107	101	80	96	80	97	108	108	80
Thirty-first	79	88	58	62	65	75	91	103	79	81	82	85	87	102	96	85	112	93	121	86	74
Thirty-second	84	65	59	84	72	83	77	81	72	101	91	89	91	86	102	103	77	89	94	65	116
Thirty-third	72	69	70	63	69	57	70	87	64	81	96	92	86	84	76	117	85	90	120	97	89
Thirty-fourth	54	86	65	76	63	69	70	89	68	82	80	95	114	92	97	99	84	78	90	98	98
Thirty-fifth	65	99	82	84	77	72	74	79	51	71	93	74	68	105	100	88	92	113	78	98	73
Thirty-sixth	81	65	70	79	61	73	79	74	69	85	101	98	88	103	98	100	100	75	114	104	112
Thirty-seventh	74	82	89	61	67	83	64	81	94	100	83	93	78	94	85	88	78	94	101	84	101
Thirty-eighth	72	76	89	82	78	80	81	77	76	83	111	109	95	93	102	76	94	73	92	83	107
Thirty-ninth	78	63	69	85	88	90	82	75	57	88	106	75	88	97	98	86	106	87	90	123	77
Fortieth	74	76	63	78	90	77	74	98	97	99	98	94	80	84	97	104	94	93	107	107	76
Forty-first	89	73	61	93	66	76	72	88	74	104	102	82	92	100	90	102	105	101	102	81	87
Forty-second	65	81	78	85	73	100	70	93	66	88	90	124	98	108	102	105	89	103	80	97	104
Forty-third	84	83	78	76	72	72	84	87	107	71	104	120	88	106	110	80	105	112	85	93	102
Forty-fourth	72	78	71	86	77	79	78	85	82	91	129	103	97	112	82	98	90	89	101	80	95
Forty-fifth	77	98	74	89	80	71	79	83	86	94	120	88	92	104	95	106	93	88	82	110	99
Forty-sixth	71	69	85	66	58	75	92	107	83	79	104	95	89	111	86	109	100	81	89	85	87
Forty-seventh	73	76	81	71	80	83	73	67	81	98	104	91	111	104	99	114	96	94	86	78	101
Forty-eighth	74	62	82	91	55	83	61	91	105	114	122	106	93	105	75	96	103	112	85	98	103
Forty-ninth	89	85	82	77	88	81	86	74	79	94	94	106	110	127	103	109	100	99	113	94	98
Fiftieth	91	83	78	99	71	69	75	94	94	114	118	103	100	123	77	107	100	106	94	102	97
Fifty-first	70	90	77	80	91	71	57	90	100	100	104	92	112	94	96	117	100	111	97	98	86
Fifty-second	75	71	67	90	80	87	82	106	78	100	107	103	101	92	88	109	91	99	131	96	103
	..	..	73	..	..	..	..	..	88	..	..	..	..	110	..	..	..	..	..	105	..
Date of ending—Week ending	Dec.30.	Dec.28.	Jan. 3.	Jan. 2.	Jan. 1.	Dec.30.	Dec.29.	Dec.28.	Jan. 3.	Jan. 1.	Dec.31.	Dec.30.	Dec 29.	Jan. 3.	Jan. 2.	Jan. 1.	Dec.31.	Dec.29.	Dec.28.	Jan. 3.	Jan.2.

Deaths Reported from Pneumonia, by Weeks, Since Week ending February 8, 1873.

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Date of beginning—Week ending	Jan. 7.	Jan. 6.	Jan. 4.	Jan.10.	Jan. 9.	Jan. 8.	Jan. 6.	Jan. 5.	Jan. 4.	Jan.10.	Jan. 8.	Jan. 7.	Jan. 6.	Jan. 5.	Jan.10.	Jan. 9.	Jan. 8.	Jan. 7.	Jan. 5.	Jan. 4.	Jan.10
First	..	..	..	55	91	53	65	58	64	64	82	82	78	87	108	85	94	96	90	298	123
Second	..	..	..	56	86	61	70	86	68	62	93	93	92	79	78	91	112	119	93	384	135
Third	..	..	..	52	105	69	54	62	82	65	81	92	74	77	68	93	101	119	93	296	105
Fourth	..	..	..	44	88	58	52	49	86	48	83	82	72	82	70	86	125	115	99	192	91
Fifth	..	..	..	64	81	63	49	48	82	46	69	81	85	77	115	76	103	125	85	122	123
Sixth	..	..	66	51	72	78	45	61	64	66	87	92	71	95	105	100	81	119	87	112	120
Seventh	..	..	57	75	72	72	45	64	55	62	98	103	99	93	130	84	88	126	95	103	106
Eighth	..	..	48	57	86	72	50	62	65	62	96	84	94	79	140	94	92	136	101	118	128
Ninth	..	..	57	57	77	89	74	63	74	69	92	98	110	65	142	80	101	131	109	95	110
Tenth	..	..	63	62	73	108	66	85	64	51	96	107	111	73	149	125	83	122	139	116	99
Eleventh	..	..	59	64	92	83	65	58	81	53	92	93	118	83	123	123	102	129	126	105	136
Twelfth	..	..	71	66	87	71	65	70	79	61	81	101	128	92	122	126	95	139	111	116	179
Thirteenth	..	..	51	60	67	79	58	65	74	59	84	95	113	75	131	100	82	124	109	108	225
Fourteenth	..	..	70	92	69	60	50	62	76	83	82	84	134	74	122	88	93	102	133	106	289
Fifteenth	..	..	52	77	56	75	67	43	54	112	97	100	130	71	109	92	121	123	124	111	296
Sixteenth	..	..	68	64	62	60	58	60	60	89	99	97	100	66	133	82	114	89	115	102	272
Seventeenth	..	..	50	79	73	63	51	63	71	78	96	88	86	66	104	76	106	95	112	121	176
Eighteenth	..	..	55	62	76	70	65	61	53	89	87	98	91	73	81	68	103	101	97	108	168
Nineteenth	..	..	53	56	68	59	41	52	60	73	83	109	97	62	85	58	98	129	76	119	139
Twentieth	..	..	71	40	58	50	33	38	52	68	55	120	71	62	71	71	83	91	91	90	112
Twenty-first	..	..	67	62	47	49	45	40	55	87	48	95	75	67	61	50	77	78	80	86	106
Twenty-second	..	..	58	52	44	52	48	70	32	51	43	88	66	55	71	48	56	64	69	75	98
Twenty-third	..	..	50	42	28	37	28	35	37	40	33	60	72	50	47	52	47	70	67	75	84
Twenty-fourth	..	..	33	38	34	35	30	43	30	35	50	55	39	44	61	49	38	59	54	77	89
Twenty-fifth	..	..	32	25	31	31	24	29	31	38	36	57	38	44	42	44	29	50	52	69	75
Twenty-sixth	..	..	34	29	41	30	25	28	13	35	53	48	48	37	45	21	35	34	48	51	56
Twenty-seventh	..	..	32	22	43	27	20	22	21	37	41	45	43	48	38	40	36	32	40	35	66
Twenty-eighth	..	..	18	21	32	22	28	26	24	33	32	45	38	37	42	49	38	47	34	54	54
Twenty-ninth	..	..	33	31	32	30	20	18	26	20	25	34	27	34	34	44	28	42	26	47	49
Thirtieth	..	..	27	25	21	23	22	17	21	22	29	32	27	38	20	32	21	43	36	47	49
Thirty-first	..	..	26	19	23	26	26	14	22	24	26	30	24	34	28	20	27	33	33	44	47
Thirty-second	..	..	24	22	20	25	28	27	24	21	30	21	20	29	32	35	18	35	36	48	57
Thirty-third	..	..	19	23	32	19	24	16	18	24	28	21	30	23	25	36	30	28	39	54	41
Thirty-fourth	..	..	28	20	23	24	23	26	18	34	26	25	26	34	34	45	26	48	37	42	54

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Thirty-fifth	..	..	29	34	29	26	22	24	23	20	39	29	31	39	35	37	37	38	37	53	41
Thirty-sixth	..	..	26	17	29	23	19	25	23	32	40	32	28	30	32	30	45	50	41	59	51
Thirty-seventh	..	..	25	28	31	30	24	26	27	23	24	28	40	37	40	33	38	43	42	50	54
Thirty-eighth	..	..	21	28	31	33	28	24	32	33	35	26	30	34	34	22	50	43	55	41	66
Thirty-ninth	..	..	21	21	34	25	28	24	21	39	49	33	27	40	34	35	56	61	55	41	52
Fortieth	..	..	29	21	35	24	23	26	31	39	37	43	26	40	36	42	52	35	40	55	46
Forty-first	..	..	20	31	35	32	35	25	48	42	36	36	46	49	35	56	59	72	53	48	56
Forty-second	..	..	46	28	43	41	34	36	36	47	44	51	47	40	38	55	55	77	68	68	61
Forty-third	..	..	38	33	46	37	45	32	43	59	51	42	40	48	36	73	72	84	57	64	98
Forty-fourth	..	..	31	37	49	42	34	35	28	57	59	40	37	53	41	75	57	85	71	69	115
Forty-fifth	..	..	36	50	46	51	40	34	53	53	40	51	31	60	61	71	79	85	77	90	139
Forty-sixth	..	..	59	60	56	50	40	47	58	65	68	50	61	74	44	85	85	77	73	72	120
Forty-seventh	..	..	54	54	45	34	44	50	62	52	63	50	62	70	51	87	86	74	72	85	112
Forty-eighth	..	..	55	48	57	49	37	38	70	66	66	69	75	79	56	122	87	72	66	87	94
Forty-ninth	..	..	66	58	57	52	36	49	69	75	69	82	61	77	64	101	85	77	87	95	112
Fiftieth	..	..	46	58	53	41	49	51	57	66	85	80	84	76	70	111	73	84	81	115	140
Fifty-first	..	..	39	56	63	59	41	42	76	91	89	84	61	77	70	117	85	93	87	117	201
Fifty-second	..	..	49	58	56	58	48	45	51	82	104	75	73	100	78	111	95	116	139	126	180
.....	..	..	50	..	..	..	..	..	58	..	..	..	..	105	..	..	..	..	..	134	..
Date of ending—Week ending	Dec. 30	Dec. 28.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 30.	Dec. 29.	Dec. 28.	Jan. 3.	Jan. 1.	Dec. 31.	Dec. 30.	Dec. 29.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 31.	Dec. 29.	Dec. 28.	Jan. 3.	Jan. 2.

Deaths Reported from Scarlet Fever, by Weeks, Since 1871.

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Date of beginning—Week ending	Jan. 7.	Jan. 6.	Jan. 4.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 6.	Jan. 5.	Jan. 4.	Jan. 10.	Jan. 8.	Jan. 7.	Jan. 6.	Jan. 5.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 7.	Jan. 5.	Jan. 4.	Jan. 10
First	28	14	21	26	23	13	32	22	53	4	39	77	11	8	18	13	12	35	47	11	16
Second	26	29	12	35	19	19	28	27	54	7	42	68	20	13	14	7	6	21	49	9	22
Third	27	20	16	23	10	15	16	28	68	14	40	102	19	14	22	13	11	26	54	9	20
Fourth	15	20	23	18	8	13	25	24	60	7	48	115	20	9	13	10	16	27	55	10	23
Fifth	27	25	22	26	18	13	21	31	48	6	43	101	16	13	17	15	5	27	44	13	20
Sixth	18	23	20	25	14	26	31	16	69	11	40	91	14	17	18	14	10	29	54	10	26
Seventh	19	30	26	26	20	16	18	27	69	10	48	116	15	15	16	8	8	30	47	11	30
Eighth	19	29	17	23	19	16	24	22	50	5	43	81	21	12	24	9	14	27	58	13	33
Ninth	19	22	23	34	12	22	22	29	44	8	32	88	14	16	15	10	16	28	50	8	24
Tenth	14	29	18	25	11	19	22	25	60	7	30	79	11	13	23	7	12	19	54	9	25
Eleventh	26	20	17	23	9	28	19	23	54	5	43	81	28	7	9	8	13	28	46	20	21
Twelfth	22	27	21	27	13	16	19	24	65	1	37	82	24	24	18	9	10	27	59	12	28
Thirteenth	17	17	18	23	12	28	25	28	54	7	31	74	25	11	21	13	11	26	57	9	25
Fourteenth	17	31	17	20	13	31	23	23	42	11	37	64	28	16	15	10	7	22	71	14	35
Fifteenth	20	27	16	21	14	32	33	18	24	7	49	75	13	7	14	14	13	32	54	7	37
Sixteenth	13	31	18	17	13	30	31	26	55	9	42	78	22	19	23	13	15	32	57	5	49
Seventeenth	15	30	20	12	12	29	27	26	46	9	46	65	23	23	19	9	16	36	51	7	37
Eighteenth	18	21	21	12	11	26	20	15	52	8	48	55	31	14	14	10	14	28	34	12	23
Nineteenth	18	41	24	16	17	25	20	17	42	5	57	54	32	16	16	8	11	44	48	8	34
Twentieth	14	29	23	21	17	28	19	22	42	13	33	61	30	19	21	12	8	31	26	8	29
Twenty-first	12	24	29	21	10	27	25	15	31	16	40	48	24	16	12	9	14	31	36	6	53
Twenty-second	21	28	23	19	9	19	23	33	31	9	37	40	26	11	21	7	16	32	28	6	33
Twenty-third	19	26	24	16	8	20	25	17	31	9	32	50	29	11	14	11	7	32	26	13	34
Twenty-fourth	11	29	19	23	14	29	22	17	24	8	25	31	21	10	13	7	19	32	26	4	33
Twenty-fifth	7	28	24	16	5	21	23	21	28	5	32	39	18	12	10	6	12	33	9	11	24
Twenty-sixth	12	17	16	20	16	23	24	27	27	8	44	27	13	17	4	4	12	31	7	6	24
Twenty-seventh	12	34	24	17	7	21	21	22	23	6	41	21	15	13	9	5	9	23	7	9	30
Twenty-eighth	8	18	18	11	7	19	19	12	23	3	34	13	9	14	9	5	7	15	10	5	30
Twenty-ninth	18	13	24	16	12	8	15	12	27	3	34	15	10	11	10	4	8	21	7	7	23
Thirtieth	9	12	19	5	6	6	10	10	22	2	29	16	8	10	5	10	4	19	6	4	19
Thirty-first	15	15	25	14	6	9	15	13	8	7	28	12	1	7	3	4	7	22	2	4	25
Thirty-second	18	6	13	10	3	5	15	13	6	8	24	11	4	7	4	3	6	14	4	4	14
Thirty-third	14	9	10	13	..	4	13	15	9	7	24	9	5	2	2	6	6	8	..	5	10
Thirty-fourth	6	7	10	11	3	6	11	7	9	3	20	8	11	5	5	1	4	19	2	4	9
Thirty-fifth	11	3	17	13	5	6	9	10	10	7	23	11	5	6	2	2	3	25	1	1	13
Thirty-sixth	4	6	7	8	6	5	12	10	6	5	26	5	2	8	1	3	10	19	3	1	17
Thirty-seventh	6	5	9	17	2	6	13	8	12	5	13	6	11	10	..	..	7	17	2	3	11
Thirty-eighth	4	7	14	16	3	7	10	6	14	3	23	9	8	5	1	4	5	15	3	8	7
Thirty-ninth	3	5	14	8	2	7	13	10	15	10	24	2	5	3	3	2	7	10	3	3	6
Fortieth	7	7	12	14	3	5	16	11	6	5	25	5	8	..	1	4	6	10	5	1	11
Forty-first	9	13	12	4	4	7	16	14	3	11	28	7	2	5	2	4	10	19	4	2	5
Forty-second	8	10	15	9	8	9	18	12	2	15	28	9	10	6	5	3	10	16	3	4	10
Forty-third	16	8	16	18	4	7	8	11	9	15	31	5	9	7	4	6	13	16	5	2	15
Forty-fourth	14	12	18	8	4	9	10	17	15	14	23	2	8	1	6	5	9	21	4	3	11
Forty-fifth	10	17	25	11	5	9	10	19	7	28	25	6	8	7	2	4	9	26	2	11	16
Forty-sixth	13	15	20	6	9	21	16	17	5	31	30	10	6	8	6	6	13	25	2	7	15
Forth-seventh	18	15	23	11	7	23	18	30	14	28	36	7	9	16	8	4	18	26	5	10	29
Forty-eighth	19	14	22	16	13	18	14	31	12	38	67	14	10	15	9	5	17	25	8	10	19
Forty-ninth	8	8	37	9	12	9	15	28	6	38	59	5	10	13	4	6	24	29	6	5	22
Fiftieth	16	14	27	13	11	24	14	36	9	38	58	16	4	13	13	5	25	34	5	10	33
Fifty-first	14	23	29	18	9	20	15	43	10	34	82	15	7	21	12	8	21	52	10	11	23
Fifty-second	25	19	30	10	15	24	22	53	8	39	81	5	10	22	6	3	19	51	3	11	34
.....	..	..	46	..	..	..	..	..	6	..	..	..	..	15	..	..	..	..	..	21	..
Date of ending—Week ending	Dec. 30.	Dec. 28.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 30.	Dec. 29.	Dec. 28.	Jan. 3.	Jan. 1.	Dec. 31.	Dec. 30.	Dec. 29.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 31.	Dec. 29.	Dec. 28.	Jan. 3.	Jan. 2.

Deaths Reported from Small Pox, by Weeks, Since 1871.

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Date of beginning—Week ending	Jan. 7.	Jan. 6.	Jan. 4	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 6.	Jan. 5.	Jan. 4.	Jan. 10.	Jan. 8.	Jan. 7.	Jan. 6.	Jan. 5.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 7.	Jan. 5.	Jan. 4.	Jan. 10
First	1	15	13	2	22	14	..	..	..	..	7	12	..	..	..	..	..	..	..	..	..
Second	4	20	8	..	38	11	..	..	..	..	9	13	..	..	..	2	..	1	..	..	..
Third	10	25	7	..	39	25	..	..	..	..	9	7	..	..	..	1	2	..	..	..	..
Fourth	6	26	8	2	38	18	..	..	..	..	5	11	..	..	..	1	3	3	..	..	..
Fifth	11	25	10	5	33	16	1	..	..	..	1	20	..	..	..	1	7	..	..	..	..
Sixth	16	32	4	..	24	26	..	..	..	..	6	21	1	..	..	2	3	1	..	..	..
Seventh	9	25	5	..	34	8	..	..	..	..	5	17	1	..	..	..	6	..	1	..	..
Eighth	20	24	8	1	33	13	..	..	..	..	7	12	..	..	..	4	2	1	..	..	..
Ninth	20	22	4	1	17	22	..	..	..	..	2	14	1	..	..	..	5	1	..	..	..
Tenth	16	24	2	1	32	16	..	..	..	..	8	11	1	..	..	2	1	2	..	..	..
Eleventh	25	17	4	2	17	12	2	..	..	..	12	12	1	..	..	1	1	4	..	1	1
Twelfth	28	29	1	6	21	10	..	..	..	..	10	14	1	..	..	..	4	3	..	..	..
Thirteenth	34	37	..	4	23	8	1	1	..	..	13	12	2	..	..	4	2	4	..	1	..
Fourteenth	24	33	1	5	24	12	2	..	..	..	9	8	1	..	..	1	1	7	..	..	..
Fifteenth	32	35	3	5	20	12	..	..	1	..	12	5	..	..	..	2	5	4	..	..	..
Sixteenth	29	40	2	4	23	10	..	..	1	..	9	9	..	..	..	..	3	7	..	..	1
Seventeenth	23	29	..	10	22	12	2	..	..	..	17	6	1	..	..	1	2	8	..	..	..
Eighteenth	15	36	2	9	40	7	1	..	..	..	12	8	2	..	..	1	7	6	..	..	..
Nineteenth	26	48	4	7	43	7	..	1	..	1	19	4	..	..	..	2	5	5	..	..	..
Twentieth	21	36	7	10	47	7	..	..	..	..	20	7	..	..	..	1	7	5	..	..	..
Twenty-first	20	54	1	8	35	4	..	..	..	1	15	9	..	..	..	1	4	4	..	..	..
Twenty-second	23	29	3	6	38	6	1	..	1	..	20	4	..	..	..	1	4	3	..	..	..
Twenty-third	19	29	4	7	45	3	2	..	..	..	15	4	..	..	3	..	2	2	..	..	..
Twenty-fourth	30	48	3	4	33	9	..	..	5	..	23	6	..	..	..	1	1	4	..	..	..
Twenty-fifth	27	19	3	11	46	3	1	..	2	..	10	4	..	..	..	..	2	1	..	..	..
Twenty-sixth	19	21	3	3	40	9	..	..	1	..	16	2	..	..	..	1	..	1	..	..	..
Twenty-seventh	30	29	1	6	49	1	..	..	..	..	7	2	..	..	..	..	3	1	..	..	..
Twenty-eighth	24	9	..	10	38	4	1	..	7	..	6	2	..	..	1	..	1	..	..	..	..
Twenty-ninth	10	6	1	11	36	3	..	..	..	..	8	..	..	..	1	..	2	..	..	..	..
Thirtieth	16	11	..	6	29	..	..	..	..	2	8	3	..	..	..	..	..	..	..	..	..
Thirty-first	18	6	1	2	31	1	..	..	1	..	12	..	..	..	..	..	1	..	..	..	..
Thirty-second	12	2	..	12	17	1	..	..	1	..	7	1	..	..	..	..	1	..	..	..	..
Thirty-third	17	4	1	12	7	..	..	..	2	..	6	..	..	..	..	..	1	..	..	..	..
Thirty-fourth	7	4	..	5	8	1	..	..	1	..	6	..	..	..	..	..	..	..	..	..	..
Thirty-fifth	13	2	..	10	12	..	..	..	1	..	3	..	..	..	..	..	2	1	..	..	..
Thirty-sixth	9	1	..	9	6	..	..	..	..	..	4	..	..	..	..	..	1	..	..	..	..
Thirty-seventh	2	1	..	4	19	1	..	..	..	..	2	..	..	..	1	..	3	..	..	..	..
Thirty-eighth	4	1	..	11	9	..	..	..	..	2	1	..	..	..	1	..	..	..	..	..	..
Thirty-ninth	4	3	..	11	8	1	..	..	..	..	3	..	..	..	3	..	1	..	..	..	..
Fortieth	4	1	..	4	10	..	..	..	..	..	3	..	..	..	1	..	1	1	..	..	..
Forty-first	9	3	1	17	13	..	..	..	..	1	4	..	..	..	1	..	..	..	..	..	..
Forty-second	8	2	1	13	8	2	..	..	..	1	1	..	..	..	1	..	1	..	..	..	..
Forty-third	2	3	..	8	13	1	..	..	..	..	7	..	..	..	..	..	..	..	..	..	..
Forty-fourth	6	3	..	14	11	1	..	..	..	..	7	..	..	..	1	..	..	..	..	..	..
Forty-fifth	4	12	1	15	13	..	..	..	..	..	2	..	..	..	1	1	1	1	..	..	..
Forty-sixth	7	4	1	20	15	..	..	..	1	1	7	1	..	..	3	..	..	..	..	..	..
Forty-seventh	10	10	2	17	19	..	..	..	..	3	8	..	..	..	1	..	..	..	..	..	..
Forty-eighth	13	5	2	30	14	..	..	..	..	..	3	..	..	..	2	..	1	..	..	..	..
Forty-ninth	19	5	..	29	14	1	..	..	..	7	12	..	..	..	..	..	..	..	..	..	..
Fiftieth	12	11	1	21	13	1	..	..	..	2	12	..	..	..	1	..	..	..	..	..	..
Fifty-first	14	8	1	32	14	..	..	..	..	3	11	..	..	..	2	..	1	..	..	..	..
Fifty-second	18	3	..	9	8	1	..	..	..	6	9	..	..	..	..	..	..	..	..	..	..
Date of ending—Week ending	Dec. 30.	Dec. 28.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 30.	Dec. 29.	Dec. 28.	Jan. 3.	Jan. 1.	Dec. 31.	Dec. 30.	Dec. 29.	Jan. 3.	Jan. 2.	Jan. 1.	Dec. 31.	Dec. 29	Dec. 28.	Jan. 3.	Jan. 2

Deaths Reported from Typhoid Fever, by Weeks, Since 1871.

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Date of beginning—Week ending	Jan. 7.	Jan. 6.	Jan. 4.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 6.	Jan. 5.	Jan. 4.	Jan. 10.	Jan. 8.	Jan. 7.	Jan. 6.	Jan. 5.	Jan. 10.	Jan. 9.	Jan. 8.	Jan. 7.	Jan. 5.	Jan. 4.	Jan. 10
First	6	3	4	4	1	6	4	6	4	3	1	4	4	7	1	6	7	5	9	7	3
Second	7	6	2	6	7	5	6	5	5	4	7	6	3	4	3	5	9	4	4	7	3
Third	1	..	9	6	12	3	3	2	5	1	4	6	4	3	3	3	4	1	4	2	3
Fourth	6	5	5	7	5	3	2	2	5	..	4	5	5	2	7	1	5	2	9	5	3
Fifth	2	7	5	5	4	7	2	2	3	3	2	5	6	4	1	2	4	2	5	2	2
Sixth	3	5	3	5	4	2	5	6	4	2	3	4	4	3	4	3	3	2	2	9	5
Seventh	3	7	4	..	8	5	6	3	..	6	2	5	2	7	4	1	3	4	4	6	3
Eighth	2	1	2	5	1	6	6	1	3	5	3	3	5	4	2	2	4	4	4	5	2
Ninth	4	4	5	5	3	4	4	3	2	2	1	3	8	8	3	5	5	3	6	6	1
Tenth	7	4	5	7	7	5	2	..	2	2	3	5	7	5	1	6	5	2	2	3	6
Eleventh	1	8	3	4	..	4	1	1	4	4	6	8	5	5	3	8	3	2	6	5	1
Twelfth	3	7	3	6	5	4	2	3	1	8	9	3	4	3	3	7	5	2	5	5	3
Thirteenth	5	5	6	2	7	2	..	1	..	6	9	3	6	3	3	5	5	6	5	3	8
Fourteenth	4	4	6	5	4	3	1	1	1	4	11	1	4	..	..	1	5	2	6	3	2
Fifteenth	3	4	4	4	10	3	..	4	3	3	7	3	5	1	3	6	2	4	5	5	2
Sixteenth	2	3	2	3	6	6	2	3	1	1	11	5	7	3	4	5	2	4	5	1	4

WEEK.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Seventeenth	6	6	3	5	2	5	3	1	4	4	8	6	2	2	5	..	2	2	3	2	3
Eighteenth	2	5	3	1	5	5	2	1	3	3	8	5	6	5	5	1	1	6	2	1	4
Nineteenth	2	5	6	4	4	5	8	4	2	2	9	3	2	6	2	2	2	3	4	3	5
Twentieth	3	6	3	1	4	4	7	4	3	4	8	5	4	2	4	3	3	5	5	4	4
Twenty-first	6	2	10	2	5	1	4	1	1	3	2	5	3	1	3	2	3	3	4	1	6
Twenty-second	3	7	4	1	4	5	7	4	2	..	5	3	5	6	4	1	2	6	2	2	7
Twenty-third	4	4	5	5	6	6	1	1	4	3	4	1	3	1	5	1	3	2	4	3	6
Twenty-fourth	1	3	6	5	3	1	4	5	4	2	3	2	3	6	2	2	5	3	4	2	2
Twenty-fifth	1	6	2	4	2	5	5	..	1	4	3	4	8	5	4	..	4	3	6	3	7
Twenty-sixth	1	5	5	2	6	5	2	..	..	4	9	2	5	5	4	3	3	3	2	1	2
Twenty-seventh	9	10	3	2	5	4	3	3	2	5	4	6	8	2	6	3	5	4	5	3	4
Twenty-eighth	..	4	4	4	3	9	..	4	1	4	8	5	8	4	1	4	7	3	4	6	6
Twenty-ninth	2	7	3	3	3	4	3	2	4	4	11	7	8	5	6	6	5	8	5	5	11
Thirtieth	6	7	5	4	9	4	9	7	1	6	8	6	6	10	5	6	8	13	10	8	7
Thirty-first	2	8	3	2	9	3	2	5	3	7	5	7	9	6	5	7	14	11	13	12	8
Thirty-second	4	18	5	2	9	7	5	5	5	5	9	5	14	9	6	3	11	5	10	8	13
Thirty-third	7	12	6	8	13	13	8	8	12	4	7	14	12	5	6	5	16	8	15	10	16
Thirty-fourth	6	7	9	8	6	6	8	5	5	7	14	12	15	15	8	11	11	10	20	12	15
Thirty-fifth	11	19	14	7	9	8	9	17	7	3	9	13	13	11	10	14	8	15	17	11	10
Thirty-sixth	8	4	17	6	11	8	13	9	5	4	17	11	29	18	9	8	13	17	15	15	9
Thirty-seventh	6	17	8	10	18	10	10	5	5	10	18	11	22	20	11	15	11	19	15	17	19
Thirty-eighth	10	13	3	10	15	10	5	7	3	7	18	8	16	11	18	18	14	17	18	17	24
Thirty-ninth	9	13	17	6	17	8	11	11	1	11	16	13	12	14	9	13	13	23	7	16	11
Fortieth	7	11	14	10	9	9	7	7	7	6	10	15	15	13	14	13	10	12	14	8	18
Forty-first	8	5	8	5	11	3	8	13	7	8	20	15	23	14	14	16	6	15	8	14	12
Forty-second	6	11	6	7	11	4	8	12	5	7	11	18	18	11	8	7	9	12	12	14	9
Forty-third	9	3	6	10	10	9	8	5	9	4	13	17	19	14	10	16	13	13	14	7	12
Forty-fourth	7	5	4	12	4	5	8	8	5	12	11	14	18	15	8	12	6	6	16	11	14
Forty-fifth	8	15	8	10	11	13	12	3	1	2	11	13	24	22	7	8	3	10	8	10	17
Forty-sixth	3	8	11	5	5	7	6	9	2	9	13	9	15	11	11	8	7	13	11	10	10
Forty-seventh	5	8	4	3	7	6	7	4	2	7	11	5	10	9	6	10	9	7	10	7	9
Forty-eighth	7	7	4	12	9	2	7	7	1	6	16	6	15	15	7	12	2	6	8	5	11
Forty-ninth	3	8	6	5	7	6	4	4	4	7	8	5	3	10	8	14	7	8	7	8	5
Fiftieth	4	5	7	6	2	5	7	5	8	6	12	3	7	12	5	8	4	10	7	11	5
Fifty-first	9	8	6	9	5	6	10	3	4	1	14	6	5	7	7	3	4	7	5	3	4
Fifty-second	9	7	3	3	3	..	6	10	3	3	9	8	5	3	2	7	6	4	6	5	7
.....	..	..	4	..	..	..	..	..	4	..	..	..	..	5	..	..	..	..	..	7	..
Date of ending—Week ending	Dec.30.	Dec.28.	Jan. 3.	Jan. 2.	Jan. 1.	Dec.30.	Dec.29.	Dec.28.	Jan. 3.	Jan. 1.	Dec.31.	Dec.30.	Dec.29.	Jan. 3.	Jan. 2.	Jan. 1.	Dec.31.	Dec.29.	Dec.28.	Jan. 3.	Jan.2.

Deaths from Accidental Poisoning since 1870.

POISONS.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Acetic acid	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Aconite	1	..	..	..	..	2	..	..	..	..	..	..	..	1	2	..	1	..	..	..	1	..
Ammonia	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	3	..	1	4	..	..
Arsenic	..	..	1	..	..	..	..	..	..	1	1	..	..	..	1	1	1	..	3	..	2	2
Taxidermist	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Paris green	..	..	..	..	4	..	1	1	1	..	..	..	..	..	..	3	1	..	..	4	2	1
Arsenite of copper	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Alcohol (whiskey, wine, etc.)	1	1	1	..	..	..	..	1	1	2	2	1	1	1	1	1	..	2	..	..	1	..
Atropine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..
Aloes, solution of	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Belladonna	..	..	..	..	..	..	..	1	3	..	..	..	..	1	..	..	..	2	..	..	..	..
Benzine	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Bromidia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Cocaine and hydrate of chloral	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Cloves—oil of—in milk	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Carbonic acid gas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Carbonic acid gas in brewer's vat	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Carbonic oxide gas	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	2	..	..	..	..
Charcoal gas	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..
Coal gas	..	5	..	..	..	1	..	..	..	1	..	..	1	1	..	1	1	..	..	..	3	..
Carbolic acid	1	2	1	1	2	1	..	1	..	..	2	2	1	3	3	2	5	3	6	9	3	10
Creosote	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..
Chloroform	1	1	1	..	2	..	1	1	3	3	1	1	..	..	2	1	4	1	1	5	4	1
Colchicum	..	1	1	2	1	..	..	..	1	..	..	..	..	..	1	1	..	..	..	..	..	..
Chamomile	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chloral	..	1	1	..	..	..	2	1	1	2	2	3	1	2	3	3	1	2	1	..	..	..
Cholera mixture	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Castor oil bean	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Corrosive acid	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Corrosive substance, unspecified	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..
Copper, sulphate of	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..

POISONS.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Cresoline	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Cantharides	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Ether	..	..	1	..	..	1	1	..	..	..	..	..	..	..	..	1	2	1	..	1	1	2
Fusel oil	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gelsemium	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Hyoscyamus	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hydrocyanic acid	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cyanogen	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Oil of bitter almonds	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Prussic acid	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cyanide of potash	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Hydrogen	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Illuminating gas	1	7	1	1	1	..	..	..	2	..	9	12	16	11	18	13	27	22	32	33	38	35
Irritant Poison	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..
Iodine	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	1	..	..	..	..	..	..
Insect bite of hand	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Kerosene oil	..	..	..	..	1	1	..	1	1	2	..	..	..	1	1	..	..	..	..	..	1	..
Lead	..	2	5	2	..	2	4	3	4	5	7	10	7	6	5	6	10	6	8	7	7	6
Lead, sugar of	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Lime-water	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Limburger cheese	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Mercury	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	1	1	..
Mercury, nitrate of	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..
Corrosive sublimate	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1	..	1	2	1
Mercurial salivation	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Muriatic acid	..	..	..	1	..	..	..	..	..	..	..	..	1	1	..	..	..	1	..	..	1	..
Magnetic (muriate of) zinc	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Medicine for abortion	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..
Nitrate of silver	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Nitric acid	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	1	..	1	1	..
Narcotic poison	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Nitrous oxide gas	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Poisons.	1870.	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Opium	2	..	..	..	3	2	3	1	1	1	3	5	5	4	3	7	3	9	9	8	5	7
Magendie's solution	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Paregoric	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..
McMunn's elixir	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Laudanum	..	..	1	..	1	..	1	4	3	1	3	1	2	3	2	2	1	..	..	1	1	1
Morphine	2	..	3	2	3	1	2	1	1	3	3	5	1	6	3	9	..	2	5	5	3	4
Dovers Powder	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Oxalic acid	..	1	1	..	1	..	..	1	..	..	1	2	..	..	..	..	..	..	6	..	..	1
Pyro-gallic acid	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Pennyroyal oil	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Pastry	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Phosphorus	..	..	1	..	2	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	1
Potash	..	..	..	..	..	..	..	..	1	1	..	..	1	..	..	..	..	..	1	..	..	..
Potash, caustic	..	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Potash, bichromate of	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..
Lye	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Potash, chlorate of	..	..	..	..	..	..	..	..	..	..	..	3	1	..	..	..	..	..	2	1	..	..
Pickles	..	..	..	..	3	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Rhubarb	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Rhus	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Rat poison	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rough-on-rats	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	2	1	1	..	1	1	
Rattlesnake bite	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Soda, bromide of	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Sewer gas	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Mephitic gas from privy	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..
Sulphureted hydrogen from privy	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Strychnine	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sulphuric acid	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Sulphurous acid	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Stramonium seed	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Tartar emetic	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Turpentine	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Tobacco	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3
Unspecified poison	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Veratrum viride	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Wormwood	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Proprietary Medicines.																						
Dr. Laville's rheumatic medicine	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mrs. Winslow's soothing syrup	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..
Dr. Bull's cough syrup	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Cough syrup	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Total	12	26	23	14	28	16	15	26	26	29	40	49	48	50	55	61	68	58	76	97	82	78

NOTE.—The yearly deaths in this table do not, in all cases, agree with the number published in the various annual reports, on account of differences of classification, e. g., this table includes deaths from illuminating gas, chloroform and ether, which, in several annual reports, are classified wholly or partially under "suffocation," while it excludes deaths from septicæmia, which have in past years often been put under "poison."

Deaths by Puerperal Diseases, According to Age and Cause, from 1866 *to* 1891.

Year.	EXTRA-UTERINE PREGNANCY. Age—Years. 10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	Total.	FLOODING, PLACENTA PRAEVIA. Age—Years. 10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	Total.
1866	..	..	..	..	1	..	..	..	1	..	1	5	5	12	11	3	1	38
1867	..	1	..	..	..	..	..	..	1	..	1	4	11	5	2	5	..	28
1868	..	..	..	..	..	..	..	..	..	..	2	12	10	13	2	1	..	40
1869	..	..	..	..	..	..	..	..	..	..	1	1	8	7	11	4	1	33
1870	..	..	..	1	1	..	..	..	2	..	1	4	9	11	11	4	1	41
1871	..	..	..	2	1	..	..	..	3	..	..	4	2	9	10	5	..	30
1872	..	..	..	..	..	..	..	..	..	..	1	4	7	7	10	3	1	33
1873	..	..	1	..	..	..	..	..	1	..	2	1	7	9	9	5	1	34
1874	..	..	..	1	1	1	..	..	3	..	..	5	9	14	8	2	1	39
1875	..	..	..	..	..	..	..	..	..	..	..	5	9	9	14	7	2	46
1876	..	..	..	1	..	..	..	..	1	..	..	7	9	10	11	3	2	42
1877	..	..	..	1	..	..	..	..	1	..	..	2	2	6	5	6	..	21
1878	..	..	..	2	..	2	..	..	4	..	..	2	3	9	8	3	2	27
1879	..	..	1	..	1	..	..	..	2	..	1	3	3	12	8	3	2	32
1880	..	..	..	..	..	..	..	..	..	..	..	5	4	7	8	1	3	28
1881	..	..	..	1	1	..	..	..	2	..	..	3	2	11	8	1	2	27
1882	..	..	..	..	..	..	..	..	..	..	1	..	8	6	3	2	2	22
1883	..	..	1	2	1	..	..	..	4	..	..	3	8	7	9	8	1	36
1884	..	..	1	..	1	..	..	..	2	..	1	8	11	7	9	5	..	41
1885	..	..	..	1	1	..	..	..	2	..	2	4	9	15	11	5	..	46
1886	..	..	1	2	1	..	..	..	4	..	3	4	10	10	8	6	..	41
1887	..	..	2	3	..	2	..	..	7	..	1	4	3	14	8	3	3	36
1888	..	..	..	1	1	1	..	..	3	..	2	3	8	6	14	4	1	38
1889	..	..	1	1	4	1	..	..	7	..	1	7	9	2	6	6	..	31
1890	..	..	..	1	2	2	..	..	5	..	1	4	10	12	7	6	..	40
1891	..	..	3	2	4	4	1	..	14	..	2	1	4	7	5	5	..	24

Year.	PHLEGMASIA DOLENS. Age—Years. 10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	Total.	PUERPERAL CONVULSIONS. Age—Years. 10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	Total.
1866	..	..	..	..	..	..	..	..	..	..	6	7	7	6	4	..	..	30
1867	..	..	..	..	..	..	..	..	..	..	7	16	6	9	8	6	1	53
1868	..	..	..	..	1	2	1	..	4	..	7	14	4	8	2	1	..	36
1869	..	1	..	1	1	..	..	..	3	..	9	15	8	10	5	1	..	48
1870	..	..	..	..	..	1	..	..	1	..	3	20	7	7	5	3	1	46
1871	..	..	..	3	..	1	..	..	4	..	5	16	15	11	7	2	1	57
1872	..	..	2	2	1	..	1	..	6	..	7	20	11	8	9	1	..	56
1873	..	..	2	..	..	..	..	..	2	..	2	14	11	5	2	1	..	35
1874	..	..	1	1	3	2	..	..	7	..	5	17	11	6	8	3	..	50
1875	..	..	1	1	1	2	..	..	5	..	2	7	9	2	2	4	1	27
1876	..	..	..	..	1	2	..	..	3	..	4	9	5	5	10	2	..	35
1877	..	..	1	1	..	1	..	..	3	..	2	6	3	2	5	1	1	20
1878	..	..	..	1	1	2	..	..	4	..	3	5	7	4	5	..	..	24
1879	..	..	1	..	1	..	1	..	3	..	8	4	4	4	2	..	..	26
1880	..	..	1	2	..	1	..	..	4	..	4	9	8	5	1	2	..	29
1881	..	..	2	..	1	1	..	..	4	..	2	4	6	10	7	..	..	29
1882	..	..	1	2	1	..	..	..	4	..	6	10	8	6	5	..	..	35
1883	..	..	..	..	2	..	1	..	3	..	1	7	6	3	..	3	..	20
1884	..	..	..	3	2	3	..	..	8	..	4	9	7	4	2	3	..	29
1885	..	..	..	..	1	..	..	..	1	..	3	12	9	7	2	3	..	36
1886	..	..	1	..	..	..	..	..	1	..	4	8	10	4	3	2	..	31
1887	..	..	..	2	..	..	..	..	2	..	3	8	5	2	1	1	1	21
1888	..	..	1	..	1	..	..	..	2	..	7	10	9	5	4	1	..	36
1889	..	..	..	..	2	..	..	..	2	..	1	5	7	5	1	4	2	25
1890	..	..	..	..	..	..	..	..	..	..	3	12	14	9	5	3	..	46
1891	..	1	..	..	..	..	..	..	1	..	7	18	14	9	4	3	..	55

Year.	ABORTION AND MISCARRIAGE. Age—Years. 10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	Total.	CHILD-BIRTH. Age—Years. 10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	Total.
1866	..	1	..	4	..	..	..	..	5	..	..	2	..	5	4	2	..	13
1867	..	1	1	..	2	4	..	..	8	..	..	1	4	9	9	3	..	26
1868	..	1	..	..	..	..	1	..	2	..	4	5	10	6	5	1	1	32
1869	..	..	1	..	..	..	1	..	2	..	2	3	5	6	6	3	..	25
1870	..	1	..	4	..	2	..	..	7	..	..	5	3	7	7	..	1	23
1871	..	1	4	11	7	5	1	..	29	..	2	12	13	14	7	3	..	51
1872	..	4	3	5	9	4	1	1	27	..	..	15	11	21	8	1	..	56
1873	..	2	5	8	9	5	4	..	33	..	3	11	6	10	7	5	2	44
1874	..	1	1	7	1	6	2	..	18	..	3	3	8	7	14	3	..	38
1875	..	1	2	6	3	3	2	..	17	..	4	7	10	9	7	2	..	39
1876	..	..	2	1	5	5	3	1	17	..	1	9	16	12	3	2	..	43
1877	..	2	1	4	4	2	2	..	15	..	1	5	11	16	8	2	..	43
1878	..	1	6	8	5	2	..	..	22	..	2	11	6	5	12	3	..	39
1879	..	..	8	8	6	1	1	..	24	..	3	9	15	12	10	2	..	51
1880	..	1	4	11	8	13	8	1	46	..	2	12	20	12	12	6	1	65
1881	..	1	7	7	10	6	1	2	34	..	3	15	19	18	16	6	1	78
1882	..	3	4	10	10	12	6	..	45	..	3	15	14	7	8	7	2	56
1883	..	2	4	5	4	11	2	..	28	..	1	22	16	15	7	4	..	65
1884	..	2	5	4	8	12	3	..	34	..	1	10	23	19	12	6	..	71
1885	..	..	7	12	12	5	4	..	40	..	..	13	14	10	6	5	..	48
1886	..	1	5	10	10	6	5	..	37	..	1	7	15	10	17	8	..	58
1887	..	1	8	12	11	9	2	..	43	..	4	5	15	11	7	3	..	45
1888	..	1	11	9	10	8	2	..	41	..	8	12	16	15	13	6	..	70
1889	..	2	10	9	13	12	1	..	47	..	3	9	18	9	7	1	..	47
1890	..	..	9	13	15	5	3	..	45	..	..	7	7	5	4	4	2	29
1891	..	4	8	9	10	14	2	1	48	..	..	4	5	3	4	1	1	18

Year.	PUERPERAL FEVER. Age—Years. 10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	Total.	PUERPERAL MANIA. Age—Years. 10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	Total.
1866	..	11	36	31	28	17	7	..	130	..	2	1	2	1	..	..	..	6
1867	..	5	10	17	14	13	4	..	63	..	..	1	..	..	1	1	..	3
1868	..	12	25	22	23	14	4	1	101	..	2	2	1	1	..	1	..	7
1869	..	7	17	27	28	21	6	2	108	..	..	2	1	..	..	1	1	5
1870	..	14	35	31	35	27	7	1	150	..	..	3	2	1	..	..	..	6
1871	..	13	52	63	32	25	7	1	193	..	2	1	2	3	..	1	..	9
1872	1	20	68	75	66	42	10	2	284	..	4	3	1	1	..	..	..	9
1873	1	21	73	70	42	35	15	1	258	..	..	7	5	4	..	..	..	16
1874	1	20	63	58	47	28	14	1	232	..	1	1	1	1	1	..	..	5
1875	..	13	42	70	52	31	10	4	222	..	..	3	4	1	..	..	..	8
1876	..	13	40	66	31	31	9	..	190	..	1	1	2	2	1	..	..	7
1877	..	13	56	41	42	25	7	1	185	..	..	2	3	1	1	..	..	7
1878	..	16	35	52	30	27	11	1	172	..	..	2	3	3	..	..	..	8
1879	1	10	51	70	39	34	10	1	216	..	2	1	..	..	1	..	..	4
1880	..	19	57	59	42	36	10	1	224	..	..	1	5	2	2	1	..	11
1881	..	11	70	66	50	32	12	3	244	..	..	..	3	2	1	1	1	8
1882	1	9	60	62	47	43	14	..	236	..	..	4	3	2	..	..	..	9
1883	..	20	69	63	51	33	15	3	254	..	..	2	2	1	..	1	..	6
1884	..	17	57	74	47	27	17	2	241	..	1	4	5	1	..	1	..	12
1885	2	18	60	57	33	31	12	..	213	..	2	2	2	..	1	1	..	8
1886	..	9	59	47	34	31	6	..	186	..	..	4	2	4	2	1	..	13
1887	..	13	54	56	41	26	6	2	198	..	..	..	2	1	..	..	..	3
1888	..	10	68	80	40	30	15	3	246	..	..	..	4	1	..	..	..	5
1889	..	15	71	66	37	26	7	4	226	..	..	..	1	..	2	..	..	3
1890	..	9	54	71	38	30	5	1	208	..	..	1	2	..	3	..	..	6
1891	..	13	63	74	54	37	7	1	249	..	..	..	..	1	..	..	..	1

YEAR.	RUPTURE OF UTERUS. AGE—YEARS. 10 to 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	Total.
1866	..	..	..	..	..	..	..	..	..
1867	..	..	..	..	..	..	..	..	..
1868	..	..	..	..	..	..	..	..	..
1869	..	..	..	..	..	..	..	..	..
1870	..	..	..	1	..	..	1	..	2
1871	..	..	..	..	2	2	1	..	5
1872	..	..	1	..	1	2	1	..	5
1873	..	..	..	..	2	2	..	..	4
1874	..	..	..	..	..	1	..	..	1
1875	..	..	1	2	2	1	..	..	6
1876	..	..	..	..	1	3	..	..	4
1877	..	..	..	..	1	2	..	..	3
1878	..	..	..	..	..	..	..	..	..
1879	..	..	..	..	..	..	1	..	1
1880	..	..	..	..	..	..	..	..	..
1881	..	..	..	..	..	..	..	..	..
1882	..	..	..	..	..	..	..	..	..
1883	..	..	..	..	..	..	..	..	..
1884	..	..	..	..	..	..	..	..	..
1885	..	..	..	..	..	..	..	..	..
1886	..	..	..	..	..	..	..	..	..
1887	..	..	..	..	..	..	..	..	..
1888	..	..	..	..	..	1	..	..	1
1889	..	..	..	..	1	3	1	..	5
1890	..	..	..	1	1	1	1	..	4
1891	..	1	..	4	..	4	1	..	10

RECAPITULATION.	Abortion and Miscarriage.	Child-birth.	Extra-Uterine Pregnancy.	Flooding, Placenta Praevia.	Phlegmasia Dolens.	Puerperal Convulsions.	Puerperal Fever.	Puerperal Mania.	Rupture of Uterus.	Total.
1866	5	13	1	38	..	30	130	6	..	223
1867	8	26	1	28	..	53	63	3	..	182
1868	2	32	..	40	4	36	101	7	..	222
1869	2	25	..	33	3	48	108	5	..	224
1870	7	23	2	41	1	46	150	6	2	278
1871	29	51	3	30	4	57	193	9	5	381
1872	27	56	..	33	6	56	284	9	5	476
1873	33	44	1	34	2	35	258	16	4	427
1874	18	38	3	39	7	50	232	5	1	393
1875	17	39	..	46	5	27	222	8	6	370
1876	17	43	1	42	3	35	190	7	4	342
1877	15	43	1	21	3	20	185	7	3	298
1878	22	39	4	27	4	24	172	8	..	300
1879	24	51	2	32	3	26	216	4	1	359
1880	46	65	..	28	4	29	224	11	..	407
1881	34	78	2	27	4	29	244	8	..	426
1882	45	56	..	22	4	35	236	9	..	407
1883	28	65	4	36	3	20	254	6	..	416
1884	34	71	2	41	8	29	241	12	..	438
1885	40	48	2	46	1	36	213	8	..	394
1886	37	58	4	41	1	31	186	13	..	371
1887	43	45	7	36	2	21	198	3	..	355
1888	41	70	3	38	2	36	246	9	1	442
1889	47	47	7	31	2	25	226	3	5	393
1890	45	29	5	40	..	46	208	6	4	383
1891	48	18	14	24	1	55	249	1	10	420

Deaths by Suicide According to Means Used and Nationality, from 1869 to 1891, and by Five-Year Periods.

1869–1873.

NATIONALITY.	Cuts and Stabs. M.	F.	Drowning. M.	F.	Gunshots. M.	F.	Hanging. M.	F.	Jumping from Height. M.	F.	Poison. M.	F.	Other Means. M.	F.	Total. M.	F.	Total of Both Sexes.
United States	15	5	2	3	39	5	9	4	2	..	38	21	..	..	105	38	143
Foreign	42	13	26	11	83	3	76	16	18	11	81	53	2	1	328	108	436
Total	57	18	28	14	122	8	85	20	20	11	119	74	2	1	433	146	579

1874–1878.

United States	14	5	6	3	68	2	13	7	5	4	36	21	3	..	145	42	187
Foreign	55	4	26	14	140	2	75	17	20	11	149	69	6	..	471	117	588
Total	69	9	32	17	208	4	88	24	25	15	185	90	9	..	616	159	775

1879–1883.

United States	16	2	6	..	61	5	13	3	6	4	38	22	1	..	143	36	179
Foreign	66	11	31	13	164	6	96	15	26	13	122	52	..	1	505	111	616
Total	82	13	37	13	225	11	111	18	32	17	160	74	1	1	648	147	795

1884–1888.

United States	22	4	6	3	110	10	24	5	13	9	55	49	1	..	233	80	313
Foreign	65	10	35	16	253	10	131	29	35	15	160	68	1	..	680	148	828
Total	87	14	41	19	363	20	155	34	50	24	215	117	2	..	913	228	1,141

1889–1891.

United States	13	..	7	1	67	9	22	2	12	11	39	38	..	..	160	61	221
Foreign	41	5	12	4	196	8	103	9	14	11	102	56	1	..	469	93	562
Total	54	5	19	5	263	17	125	11	26	22	141	94	1	..	629	154	783

1869–1891.

United States	80	16	27	10	345	31	83	21	40	28	206	151	5	..	786	257	1,043
Foreign	269	43	130	58	836	29	481	86	113	61	614	298	10	2	2,453	577	3,030
Total	349	59	157	68	1,181	60	564	107	153	89	820	449	15	2	3,239	834	4,073

NOTE.—The records of the Department do not give the details of suicides, according to sex, for any year prior to 1869.

Deaths by Suicide, According to Means Used, Nativity and Sex, from 1878 to 1891, and by Five-Year Periods.

1878–1882.

NATIVITY.	Cut and Stab. M.	F.	Drowning. M.	F.	Gunshot. M.	F.	Hanging. M.	F.	Jumping from Height. M.	F.	Poison. M.	F.	Other Means. M.	F.	Total. M.	F.
Austro-Hungary	..	..	..	..	5	..	..	..	1	..	4	1	..	..	10	1
Bohemia	1	..	..	..	2	..	..	..	..	..	4	1	..	..	7	1
Belgium	2	..	..	..	1	..	..	..	..	..	..	..	..	..	3	..
British America	1	..	..	..	2	..	1	..	1	..	..	2	..	..	5	2
England	5	1	2	..	6	..	..	..	3	2	10	4	..	..	26	7
France	1	1	..	..	11	..	3	..	1	1	5	2	..	..	21	4

NATIVITY.	1878–1882. Cut and Stab. M.	F.	Drowning. M.	F.	Gunshot. M.	F.	Hanging. M.	F.	Jumping from Height. M.	F.	Poison. M.	F.	Other Means. M.	F.	Total. M.	F.
Germany	39	4	15	6	81	4	72	8	11	2	65	17	..	1	283	42
Ireland	12	4	3	5	16	1	9	6	5	2	18	18	1	..	64	36
Italy	2	..	..	..	5	..	..	..	1	2	1	1	..	..	9	3
Poland	..	..	..	..	2	..	1	..	1	..	1	1	..	..	5	1
Russia	..	..	..	..	1	..	3	..	..	..	1	..	..	..	5	..
Scotland	1	..	..	1	2	..	..	..	..	..	3	..	..	..	6	1
Switzerland	..	..	..	..	3	..	2	1	..	..	..	3	..	..	5	4
Sweden	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
United States	13	4	6	1	57	4	15	5	6	4	34	23	1	..	132	41
Unknown	2	..	5	..	7	..	6	..	1	..	7	1	..	..	28	1
Other foreign countries	2	..	1	1	7	..	2	..	2	1	5	..	..	..	19	2
Total	83	14	32	14	208	9	114	20	33	14	158	74	2	1	630	146

1883–1887.

Austro-Hungary	2	..	..	1	4	..	1	1	1	1	2	1	..	..	10	4
Bohemia	1	..	..	..	4	..	6	..	2	1	1	..	..	..	14	1
Belgium	..	..	..	..	2	..	..	..	..	..	..	..	..	..	2	..
British America	2	..	2	..	4	..	1	..	..	..	2	2	..	..	11	2
England	5	..	..	..	9	..	3	..	1	1	11	4	..	..	29	5
France	1	..	..	1	9	1	2	1	1	1	7	1	..	..	20	5
Germany	31	6	23	7	157	7	82	19	15	5	80	31	..	..	388	75
Ireland	8	3	5	7	10	1	10	5	9	5	21	21	..	..	63	42
Italy	3	..	3	..	4	..	1	..	..	..	2	2	..	..	13	2
Poland	..	..	..	..	2	..	1	..	..	1	4	..	..	..	7	1
Russia	1	..	..	..	2	..	3	2	..	..	1	2	..	..	7	4
Scotland	2	..	1	..	4	..	..	..	..	..	1	..	..	..	8	..
Switzerland	1	..	..	..	2	1	1	..	1	..	2	1	..	..	7	2
Sweden	1	1	..	..	5	..	2	..	1	..	1	1	..	..	10	2
United States	17	5	6	3	103	9	23	1	15	6	39	36	..	..	203	60
Unknown	2	..	3	1	13	..	4	..	..	1	6	1	..	..	28	3
Other foreign countries	2	..	2	..	9	..	6	1	1	..	5	1	..	..	25	2
Total	79	15	45	20	343	19	146	30	47	22	185	104	..	..	845	210

1888–1891.

Austro-Hungary	2	..	1	..	12	3	4	1	1	1	8	4	..	..	28	9
Bohemia	1	1	..	..	5	1	3	..	..	..	4	2	..	..	13	4
Belgium	..	..	..	..	..	..	2	..	..	..	..	..	..	..	2	..
British America	..	..	1	..	..	..	..	1	..	..	1	1	..	..	2	2
England	7	2	..	..	16	..	2	..	1	2	10	2	..	..	36	6
France	4	..	..	..	7	1	4	..	1	1	2	2	..	..	18	4
Germany	22	..	8	3	128	3	78	4	9	3	73	28	..	..	318	41
Ireland	12	3	1	1	11	..	5	3	5	3	20	20	1	..	55	30
Italy	..	..	..	..	8	1	2	..	..	1	..	2	..	..	10	4
Poland	..	..	..	..	7	..	5	..	1	..	..	1	..	..	13	1
Russia	1	..	..	..	4	..	4	..	..	1	2	3	..	..	11	4
Scotland	1	..	..	..	..	..	..	..	1	..	3	..	..	..	5	..
Switzerland	2	..	1	..	12	..	1	..	..	1	1	..	..	..	17	1
Sweden	..	..	1	..	1	..	2	..	..	..	1	1	..	..	5	1
United States	22	.	9	1	91	10	28	5	13	14	58	54	..	..	221	84
Unknown	2	..	2	..	28	1	9	1	1	..	8	2	1	..	51	4
Other foreign countries	1	..	2	..	10	..	2	1	2	1	9	2	..	..	26	4
Total	77	6	26	5	340	20	151	16	35	28	200	124	2	..	831	199

1878–1891.

Austro-Hungary	4	..	1	1	21	3	5	2	3	2	14	6	..	..	48	14
Bohemia	3	1	..	..	11	1	9	..	2	1	9	3	..	..	34	6
Belgium	2	..	..	..	3	..	2	..	..	..	..	..	..	..	7	..
British America	3	..	3	..	6	..	2	1	1	..	3	5	..	..	18	6
England	17	3	2	..	31	..	5	..	5	5	31	10	..	..	91	18
France	6	1	..	1	27	2	9	1	3	3	14	5	..	..	59	13
Germany	92	10	46	16	366	14	232	31	35	10	218	76	..	1	989	158
Ireland	32	10	9	13	37	2	24	14	19	10	59	59	2	..	182	108
Italy	5	..	3	..	17	1	3	..	1	3	3	5	..	..	32	9
Poland	..	..	..	..	11	..	7	..	2	1	5	2	..	..	25	3
Russia	2	..	..	..	7	..	10	2	..	1	4	5	..	..	23	8
Scotland	4	..	1	1	6	..	..	..	1	..	7	..	..	..	19	1
Switzerland	3	..	1	..	17	1	4	1	1	1	3	4	..	..	29	7
Sweden	3	1	1	..	6	..	4	..	1	..	2	2	..	..	17	3
United States	52	9	21	5	251	23	66	11	34	24	131	113	1	..	556	185
Unknown	6	..	10	1	48	1	19	1	2	1	21	4	1	..	107	8
Other foreign countries	5	..	5	1	26	..	10	2	5	2	19	3	..	..	70	8
Total	239	35	103	39	891	48	411	66	115	64	543	302	4	1	2,306	555

NOTE.—The records of the Department do not give the nativity of suicides in detail for any year prior to 1878.

Order of Succession of Mortality by Months for 1888, 1889, 1890 *and* 1891.

1891.		1890.		1889.		1888.	
Months.	Deaths.	Months.	Deaths.	Months.	Deaths.	Months.	Deaths.
April	5,048	January	4,745	July	4,333	July	4,259
July	4,261	July	4,254	March	3,778	March	4,014
March	3,854	June	3,485	April	3,593	August	3,594
December	3,734	March	3,339	January	3,375	June	3,448
May	3,692	August	3,332	August	3,359	April	3,348
August	3,648	April	3,230	February	3,327	May	3,342
June	3,562	May	3,183	June	3,321	December	3,263
January	3,334	December	3,184	December	3,319	February	3,191
October	3,249	February	2,988	May	3,165	January	3,084
September	3,231	September	2,882	September	2,799	October	2,970
February	3,026	November	2,748	October	2,724	September	2,962
November	3,020	December	2,728	November	2,586	November	2,700
Total	43,659	Total	40,103	Total	39,679	Total	40,175

Table showing Population, Deaths, Percentage of Deaths and the number of Persons Living to one Death from 1866 *to* 1891.

Years.	Population.	Deaths.	Deaths to 100 Persons Living.	Persons Living to one Death.
1866	767,979	26,815	3.49	28.6
1867	808,489	23,159	2.86	34.9
1868	851,137	24,889	2.93	34.2
1869	896,034	25,167	2.81	35.6
1870	943,300	27,175	2.88	34.7
1871	955,921	26,976	2.82	35.4
1872	968,710	32,647	3.37	29.7
1873	981,671	29,084	2.96	33.8
1874	1,030,607	28,727	2.79	35.9
1875	1,044,396	30,709	2.94	34.0
1876	1,075,532	29,152	2.71	36.9
1877	1,107,597	26,203	2.37	42.3
1878	1,140,617	27,008	2.37	42.3
1879	1,174,621	28,342	2.41	41.4
1880	1,209,268	31,937	2.64	37.9
1881	1,246,011	38,624	3.10	32.3
1882	1,283,870	37,924	2.95	33.9
1883	1,322,880	34,011	2.57	38.9
1884	1,363,075	35,034	2.57	38.9
1885	1,404,401	35,682	2.54	39.4
1886	1,447,166	37,351	2.58	38.7
1887	1,491,137	38,933	2.61	38.3
1888	1,536,444	40,175	2.62	38.2
1889	1,583,120	39,679	2.51	39.9
1890	1,631,232	40,103	2.46	40.7
1891	1,680,796	43,659	2.60	38.5

Births Reported Since 1869, *by Months.*

Year.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1869	1,224	1,075	1,140	1,220	764	849	1,103	1,263	1,484	1,027	1,241	1,257	13,947
1870	1,254	1,221	1,375	1,067	1,092	1,080	1,139	1,405	1,004	1,285	1,085	1,517	14,524
1871	1,708	1,809	1,808	1,320	1,512	1,439	1,741	1,918	1,764	1,936	1,915	1,951	20,821
1872	1,899	1,710	1,870	1,721	1,688	1,579	1,882	1,998	1,988	1,963	1,886	1,884	22,068
1873	1,969	1,761	1,809	1,706	1,571	1,631	2,112	2,080	2,122	1,928	1,923	2,051	22,683
1874	2,168	1,957	2,140	1,856	1,869	2,283	2,419	2,312	2,172	2,219	2,116	2,226	25,747
1875	2,100	1,883	2,209	1,927	1,670	1,922	2,046	2,086	1,976	1,996	1,952	2,041	23,813
1876	1,998	2,077	2,109	1,708	1,897	1,857	1,986	2,188	1,929	2,041	1,954	1,990	23,744
1877	2,110	1,886	2,234	1,787	1,753	1,975	2,173	2,310	2,052	2,511	2,031	2,697	25,569
1878	2,462	1,887	2,331	1,956	1,797	1,774	2,332	2,200	2,230	2,320	1,897	2,541	25,729
1879	2,140	1,777	2,539	1,812	1,849	2,016	2,001	2,274	2,249	2,432	2,081	2,403	25,573
1880	2,313	2,176	2,457	2,107	1,890	2,337	2,418	2,367	2,393	2,334	2,340	2,399	27,536
1881	2,387	2,050	2,395	1,898	1,931	2,050	2,087	2,449	1,988	2,320	2,279	2,266	26,130
1882	2,278	2,092	2,506	2,042	2,150	2,165	2,060	2,469	2,365	2,471	2,292	2,531	27,321
1883	2,566	2,314	2,423	2,283	2,107	2,294	2,408	2,540	2,457	2,795	2,374	2,410	28,972
1884	2,695	2,404	2,602	2,362	2,207	2,377	2,688	2,544	2,720	2,782	2,382	2,764	30,527
1885	2,651	2,479	2,490	2,356	2,144	2,293	2,320	2,703	2,601	2,762	2,399	2,832	30,030
1886	2,648	2,527	2,844	2,358	2,073	2,553	2,692	2,760	2,638	2,809	2,713	2,704	31,319
1887	2,776	2,610	2,788	2,547	2,366	2,619	2,688	3,211	3,121	3,159	2,962	3,176	34,023
1888	2,529	3,520	3,112	2,541	2,400	2,829	3,191	3,449	2,941	3,310	3,114	3,200	36,136
1889	3,388	2,950	2,931	2,800	3,082	2,827	3,370	3,245	3,235	3,464	3,168	3,067	37,527
1890	3,257	2,862	3,142	2,948	2,833	3,462	3,644	3,473	3,288	3,167	3,793	3,981	39,250
1891	3,770	3,324	3,582	3,328	3,053	3,332	4,895	4,459	4,354	4,431	4,146	4,230	46,904

NOTE—The marked increase in the number of births reported in July, 1891, and subsequent months, was due to the prosecution of delinquents.

Marriages Reported, by Months, Since 1866.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
1866	256	228	229	274	461	523	601	554	604	767	683	612	5,792
1867	557	493	517	636	766	727	580	530	645	674	578	441	7,144
1868	569	547	469	615	744	635	524	584	584	623	658	374	6,926
1869	687	621	565	883	832	709	656	608	998	620	822	694	8,695
1870	717	580	734	500	702	804	590	538	698	682	1,049	481	7,985
1871	636	640	523	654	830	749	583	651	901	894	808	777	8,646
1872	723	713	515	864	833	767	699	639	779	885	863	728	9,008
1873	778	687	645	776	852	853	649	666	781	825	733	686	8,871
1874	639	622	611	765	806	781	655	538	723	830	737	690	8,397
1875	583	579	489	724	736	677	649	518	620	710	732	548	7,565
1876	610	654	541	566	623	652	471	521	580	735	594	552	7,099
1877	555	526	526	585	693	619	510	504	596	706	692	617	7,129
1878	600	507	637	635	665	684	555	472	670	750	748	706	7,629
1879	673	589	530	664	754	752	615	515	717	976	883	773	8,446
1880	761	729	645	716	732	800	618	589	768	882	857	870	9,002
1881	700	670	838	750	918	950	735	709	827	1,027	1,073	860	10,077
1882	925	946	820	784	1,000	980	732	838	927	1,064	1,000	1,069	11,085
1883	964	783	863	1,001	1,124	1,063	850	809	910	1,162	986	1,036	11,356
1884	1,020	885	766	950	1,114	1,018	966	731	976	1,253	1,136	990	11,805
1885	1,000	915	901	937	992	1,052	816	748	978	1,170	1,106	1,081	11,716
1886	904	865	1,061	909	973	1,058	960	768	1,167	1,164	1,321	1,066	12,216
1887	1,043	973	1,088	1,090	1,133	1,242	1,007	1,000	1,170	1,335	1,434	1,220	13,740
1888	1,246	1,020	1,019	1,134	1,262	1,391	1,047	1,150	1,164	1,492	1,278	1,330	14,533
1889	1,202	1,090	1,133	1,056	1,300	1,332	1,042	1,019	1,240	1,326	1,436	1,224	14,400
1890	1,304	1,154	1,128	1,298	1,157	1,402	1,028	1,009	1,253	1,493	1,313	1,453	14,992
1891	1,258	1,267	1,131	1,470	1,221	1,393	1,321	995	1,317	1,408	1,413	1,570	15,764

Percentage of Marriages in each Month to Total of the Year Since 1866.

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
1866	4.42	3.94	3.95	4.73	7.96	9.02	10.38	9.56	10.43	13.24	11.79	10.57
1867	7.80	6.90	7.24	8.90	10.72	10.18	8.12	7.42	9.03	9.43	8.09	6.17
1868	8.22	7.90	6.77	8.88	10.74	9.17	7.57	8.43	8.43	8.99	9.50	5.40
1869	7.90	7.14	6.50	10.16	9.57	8.15	7.54	6.99	11.48	7.13	9.45	7.98
1870	8.98	7.26	9.19	6.26	8.79	10.08	7.39	6.74	7.86	8.29	13.14	6.02
1871	7.36	7.40	6.05	7.56	9.60	8.66	6.74	7.53	10.42	10.34	9.35	8.99
1872	8.03	7.92	5.72	9.59	9.25	8.51	7.76	7.09	8.65	9.82	9.58	8.08
1873	8.77	7.74	7.27	8.75	9.60	9.62	7.32	6.83	8.80	9.30	8.26	7.73
1874	7.61	7.41	7.28	9.11	9.60	9.30	7.80	6.40	8.61	9.88	8.78	8.22
1875	7.71	7.65	6.46	9.57	9.73	8.95	8.58	6.85	8.20	9.39	9.68	7.24
1876	8.59	9.21	7.62	7.97	8.78	9.18	6.63	7.34	8.17	10.35	8.37	7.78
1877	7.78	7.38	7.38	8.21	9.72	8.68	7.15	7.07	8.36	9.90	9.71	8.66
1878	7.86	6.65	8.35	8.32	8.72	8.97	7.27	6.19	8.78	9.83	9.81	9.25
1879	7.97	6.97	6.28	7.86	8.93	8.90	7.28	6.10	8.49	11.56	10.51	9.15
1880	8.51	8.10	7.17	8.28	8.13	8.89	6.87	6.54	8.53	9.80	9.52	9.66
1881	6.95	6.65	8.51	7.44	9.11	9.43	7.29	7.04	8.21	10.19	10.65	8.53
1882	8.35	8.53	7.40	7.07	9.02	8.84	6.60	7.56	8.36	9.60	9.02	9.64
1883	8.34	6.78	7.47	8.66	9.73	9.24	7.35	7.00	7.87	10.05	8.53	8.97
1884	8.64	7.50	6.49	8.03	9.44	8.62	8.18	6.19	8.27	10.61	9.62	8.39
1885	8.53	7.81	7.69	8.17	8.47	8.98	6.96	6.38	8.35	9.99	9.44	9.23
1886	7.40	7.68	8.69	7.44	7.96	8.66	7.86	6.29	9.55	9.53	10.81	8.73
1887	7.59	7.12	7.92	7.93	8.25	9.04	7.33	7.28	8.52	9.72	10.44	8 88
1888	8.57	7.02	7.01	7.80	8.68	9 57	7.20	7.91	8.01	10.27	8.79	9.15
1889	8.35	7.57	7.87	7.33	9.03	9.25	7.24	7.08	8.61	9.21	9.97	8.50
1890	8.70	7.70	7.52	8.66	7.72	9.35	6.86	6.73	8.36	9.96	8.76	9.69
1891	7.98	8.04	7.17	9.32	7 74	8.84	8.38	6.31	8.35	8.93	8.96	9.96

DEPARTMENT OF PUBLIC WORKS.

DEPARTMENT OF PUBLIC WORKS,
COMMISSIONER'S OFFICE, No. 31 CHAMBERS STREET,
NEW YORK, June 4, 1892.

In accordance with the provisions of section 51 of chapter 410 of the Laws of 1882, the Department of Public Works makes the following report of its transactions for the week ending May 28, 1892:

Public Moneys Received during the Week.

For Croton water rents	$72,376 90
For penalties, water rents	91 80
For tapping Croton pipes	308 50
For sewer permits	683 00
For restoring and repaving—Special Fund	1,057 75
For redemption of obstructions seized	33 00
For vault permits	591 07
Total	$75,142 02

Public Lamps.

12 new lamps lighted.
1 old lamp relighted.
3 lamps discontinued.
6 lamp-posts removed.
9 lamp-posts reset.
54 lamp-posts straightened.
18 columns releaded.
21 service-pipes refitted.
16 stand-pipes refitted.

Report of Photometrical Examinations of Illuminating Gas, for the Week ending May 28, 1892, made at the Photometrical Rooms of the Department of Public Works.

Date.	Time.	Thermometer.	Barometer.	Gas Company.	Burner.	Pressure as Delivered to Burner.	Consumption of Gas. Rate per hour.	Consumption of Candle, Grs. per hour.	Illuminating Power. Observed.	Illuminating Power. Corrected.
						IN.	CU. FT.			
May 23	3.30 P.M.	67.	29.59	Consolidated, Branch 1..	Bray's Slit Union,7	.78	5.00	115.4	24.00	23.68
" 24	4.30 P.M.	69.	29.86	"	"	.78	5.00	120.0	23.64	23.14
" 25	3 P.M.	71.	29.84	"	"	70	5.00	117.2	22.04	21.52
" 26	4.30 P.M	70.	29.73	"	"	.81	5.00	121.0	24.76	24.96
" 27	1.30 P.M.	76.	29.61	"	"	.68	5.00	122.4	20.92	21.34
" 28	2.15 P.M.	73.	29.98	"	"	.69	5.00	120.0	24.30	24.30
									Average	23.14
May 23	3 P.M.	67.	29.59	Consolidated, Branch 2..	Bray's Slit Union,7	.72	5.00	122.4	20.52	20.94
" 24	5 P.M.	69.	29.86	"	"	71	5.00	116.3	21.90	21.22
" 25	3.30 P.M.	71.	29.84	"	"	.74	5.00	114.1	24.64	23.42
" 26	5 P.M.	70.	29.73	"	"	.74	5.00	118.2	23.60	23.25
" 27	1 P.M.	76.	29.61	"	"	.72	5.00	121.2	21.00	21.21
" 28	1.45 P.M.	73.	29.98	"	"	.70	5.00	120.0	24.40	24.40
									Average	22.40
May 23	4 P.M.	67.	29.59	Consolidated, Branch 3..	Bray's Slit Union,7	.84	5.00	119.0	29.36	29.12
" 24	4 P.M.	69.	29.86	"	"	.84	5.00	120.0	28.68	28.68
" 25	4 P.M.	71.	29.84	"	"	.84	5.00	121.0	28.40	28.62
" 26	4 P.M	70.	29.73	"	"	.84	5.00	120.0	28.36	28.36
" 27	2 P.M.	76	29.61	"	"	.84	5.00	121.8	28.32	28.74
" 28	1.15 P.M.	73.	29.98	"	"	.83	5.00	118.2	28.80	28.37
									Average.	28.65
May 23	5.30 P.M	70	29.66	Consolidated, Branch 4..	Bray's Slit Union,7	.62	5.00	116.3	20.28	19.66
" 24	6.30 P.M	66.	29.89	"	"	.62	5.00	115.8	23.16	22.35
" 25	5.30 P.M.	76.	29.89	"	"	.63	5.00	120.0	22.32	22.32
" 26	6 P.M.	76.	29.70	"	"	.62	5.00	123.0	21.88	22.42
" 27	10 A.M.	80.	29.64	"	"	.62	5.00	125.5	21.80	22.80
" 28	2.45 P.M.	76.	29.96	"	"	.63	5.00	124.2	18.50	19.15
									Average	21.45
May 23	6 P.M.	70.	29.66	Consolidated, Branch 6..	Bray's Slit Union, 7	.74	5.00	115.4	29.28	28.16
" 24	6 P.M.	66.	29.89	"	"	.74	5.00	120.6	27.20	27.34
" 25	6 P.M.	76	29.89	"	"	.74	5.00	120.0	28.36	28.36
" 26	6.30 P.M.	76.	29.70	"	"	.74	5.00	118.1	29.08	28.62
" 27	9.30 A.M.	80.	29.64	"	"	.73	5.00	119.5	29.52	29.40
" 28	3.15 P.M.	76.	29.96	"	"	.75	5.00	120.0	27.70	27.70
									Average	28.26
May 23	5 P.M	67.	29.59	N. Y. Mutual...	Bray's Slit Union,7	.90	5.00	122.4	30.52	31.14
" 24	3.30 P.M.	69.	29.86	" ...	"	.89	5.00	121.8	30.88	31.34
" 25	5 P.M.	71.	29.84	" ...	"	.89	5.00	119.5	32.92	32.82
" 26	3 P.M.	70	29.73	" ...	"	.90	5.00	120.0	32.18	32.18
" 27	3 P.M.	76.	29.61	" ...	"	.90	5.00	118.8	32.16	31.84
" 28	12.15 P.M.	73.	29.98	" ...	"	.89	5.00	123.6	30.60	31.52
									Average.	31.80
May 23	4.30 P.M.	67.	29.59	Equitable.....	Bray's Slit Union,7	.87	5.00	114.9	31.20	29.88
" 24	3 P.M	69.	29.86	"	"	.87	5.00	120.0	30 46	30.46
" 25	4.30 P.M.	71.	29.84	"	"	.85	5.00	120.0	30.84	30.84
" 26	3.30 P.M	70.	29.73	"	"	.86	5.00	120.5	31.52	31.64
" 27	2.30 P.M.	76.	29.61	"	"	.86	5.00	124.0	30.14	31.14
" 28	12.45 P.M.	73	29.98	"	"	.85	5.00	117.0	32.80	31.98
									Average.	30.99
May 23	6.30 P.M.	70.	29.66	Standard.....	Bray's Slit Union, 7	.79	5.00	117.6	24.08	23.61
" 24	5.30 P.M.	66.	29.89	"	"	.78	5.00	121.2	23 42	23.65
" 25	6.30 P.M.	76	29.89	"	"	.79	5.00	114.9	26.92	25.78
" 26	7 P.M.	76.	29 70	"	"	.78	5.00	120.0	25.64	25.64
" 27	9 A.M.	80.	29.64	"	"	.77	5.00	125.5	24.00	25.10
" 28	3.45 P.M.	76.	29.96	"	"	.80	5.00	120.0	25.20	25.20
									Average.	24.83

E. G. LOVE, Ph. D., Gas Examiner.

Permits Issued.

68 permits to tap Croton pipes.
42 permits to open streets.
28 permits to make sewer connections.
25 permits to repair sewer connections.
179 permits to place building material on streets.
27 permits—special.
3 permits to construct street vaults.

Obstructions Removed.

53 obstructions removed from various streets and avenues.

Pavement Repairs.

7,612 square yards of pavement repaired during the week.

Repairing and Cleaning Sewers.

35 receiving-basins relieved.
120 receiving-basins and culverts cleaned.
6,041 lineal feet of sewer cleaned.
700 lineal feet of new sewer examined.
14,000 lineal feet of sewer examined.
3 lineal feet of spur-pipe laid.
9 manhole heads reset.
5 receiving-basins repaired.
10 new manhole heads and covers put on.
9 new manhole covers put on.
4 new basin covers put on.
52 cubic feet of brickwork built.
15 square yards of pavement relaid.
10 cubic feet of earth excavated and refilled.
409 cart-loads of dirt removed.

Statement of Laboring Force Employed in the Department of Public Works during the Week ending May 28, 1892.

Nature of Work.	Mechanics.	Laborers.	Teams.	Carts
Aqueduct—Repairs, Maintenance and Strengthening	17	122	6	11
Laying Croton Pipes	1	13	3	..
Repairing and Renewal of Pipes, Stop-cocks, etc	67	151	..	22
Bronx River Works—Maintenance and Repairs	1	23	4	..
Supplying Water to Shipping	6	..	..	..
Repairing and Cleaning Sewers	25	54	..	29
Repairs and Renewal of Pavement	226	242	4	78
Boulevards, Roads and Avenues, Maintenance of	14	35	8	4
Roads, Streets and Avenues	2	5	1	..
Totals	359	645	26	144
Increase over previous week	2	19	..	..
Decrease from previous week	..	..	..	1

Contracts Entered Into.

Nature and Location of Work.	Contractor.	Estimated Cost.
Furnishing 700 cubic yards of broken stone and 300 cubic yards of screenings	J. S. Howell	$2,025 00
Receiving-basins southwest corner One Hundred and Seventeenth street, and southeast and southwest corners One Hundred and Eighteenth street and Fifth avenues	John Slattery	845 50
Flagging, etc., south side Seventy-eighth street, from Boulevard to Amsterdam avenue	P. Hardiman	335 00
Flagging, etc., west side Seventh avenue, from One Hundred and Thirtieth to One Hundred and Thirty-first street	"	247 00
Flagging, etc., in front of Nos. 341 to 345 East One Hundred and Fifth street	"	135 50
Laying water-mains in Sixth, Thirteenth, Manhattan, Walton and Amsterdam avenues, Avenue D and Edenwood avenue, in Forty-fifth, Seventy-third, Eighty-first, One Hundred and Thirty-sixth, One Hundred and Thirty-seventh, One Hundred and Thirty-ninth, One Hundred and Forty-third, One Hundred and Forty-ninth, One Hundred and Sixty-first, One Hundred and Sixty-seventh, One Hundred and Seventy-fourth, One Hundred and Eighty-first and Baxter streets and on Ward's Island	W. J. Ford	12,221 00
Taking down and removing ruins of "Old Arsenal," corner White and Elm streets	"	1,500 00
Repairs, etc., to rooms occupied by Supreme Court, Parts 1 and 2, Special Term, and Parts 1, 2, 3 and 4, Circuit	M. Theriault	685 00

Assessment Lists Made.

Nature of Work.	Location of Work.	Amount.
Paving	One Hundred and First street, from First to Second avenue	$4,961 73
Regulating and grading	Amsterdam avenue, from One Hundred and Ninety-fourth street to Fort George avenue	1,726 93
Sewer	In Seventy-second street, east of Avenue A	14,316 82
Receiving-basin	At One Hundred and Twenty-seventh and Lawrence streets (alteration and improvement)	233 55
Flagging, etc	Northwest corner Mount Morris avenue and One Hundred and Twentieth street	474 06
Paving	One Hundred and Twenty-second street, between Manhattan and Columbus avenues	3,871 86
Regulating and grading	One Hundred and First street, from First avenue to East river	1,936 26
Flagging, etc	North side of One Hundred and Thirty-third street, from Lenox to Seventh avenue	459 03
Paving	One Hundred and Fourth street, from First avenue to East or Harlem river	7,809 95
Sewer	In One Hundred and Sixteenth street, between Harlem river and Pleasant avenue	2,960 31

Requisitions on the Comptroller.

The total amount of requisitions drawn by the Department on the Comptroller during the week is $131,906.31.

THOS. F. GILROY, Commissioner of Public Works.

METEOROLOGICAL OBSERVATORY

OF THE

DEPARTMENT OF PUBLIC PARKS,

CENTRAL PARK, NEW YORK.

Latitude 40° 45′ 58″ N. Longitude 73° 57′ 58″ W. Height of Instruments above the Ground, 53 feet; above the Sea, 97 feet.

ABSTRACT OF REGISTERS FROM SELF-RECORDING INSTRUMENTS

For the Week Ending July 16, 1892.

Barometer.

Date. July.	7 A.M. Reduced to Freezing.	2 P.M. Reduced to Freezing.	9 P.M. Reduced to Freezing.	Mean for the Day. Reduced to Freezing.	Maximum. Reduced to Freezing.	Maximum. Time.	Minimum. Reduced to Freezing.	Minimum. Time.
Sunday, 10	30.034	30.024	30.008	30.022	30.044	10 A.M.	29.992	6 P.M.
Monday, 11	30.000	29.964	29.930	29.965	30.026	0 A.M.	29.920	6 P.M.
Tuesday, 12	29.900	29.834	29.800	29.845	29.936	0 A.M.	29.798	12 P.M.
Wednesday, 13	29.884	29.724	29.770	29.793	29.884	7 A.M.	29.690	4 P.M.
Thursday, 14	29.800	29.800	29.840	29.813	29.840	9 P.M.	29.748	0 A.M.
Friday, 15	29.834	29.800	29.704	29.779	29.836	9 A.M.	29.674	12 P.M.
Saturday, 16	29.700	29.834	29.956	29.830	29.982	12 P.M.	29.622	3 A.M.

Mean for the week		29.864	inches.
Maximum	at 10 A.M., July 10th	30.044	"
Minimum	at 3 A.M., July 16th	29.622	"
Range		.422	"

Thermometers.

DATE. JULY.	7 A.M. Dry Bulb.	7 A.M. Wet Bulb.	2 P.M. Dry Bulb.	2 P.M. Wet Bulb.	9 P.M. Dry Bulb.	9 P.M. Wet Bulb.	MEAN. Dry Bulb.	MEAN. Wet Bulb.	MAXIMUM. Dry Bulb.	MAXIMUM. Time.	MAXIMUM. Wet Bulb.	MAXIMUM. Time.	MINIMUM. Dry Bulb.	MINIMUM. Time.	MINIMUM. Wet Bulb.	MINIMUM. Time.	MAXIMUM. In Sun.
Sunday, 10	70	67	84	75	80	74	78.0	72.0	88	5 P.M.	77	8 P.M.	67	5 A.M.	66	5 A.M.	131. 2 P.M.
Monday, 11	74	70	86	77	78	74	79.3	73.6	86	3 P.M.	79	3 P.M.	70	5 A.M.	69	5 A.M.	137. 11 A.M.
Tuesday, 12	73	71	87	78	81	78	80.3	75.6	91	4 P.M.	80	4 P.M.	70	5 A.M.	70	5 A.M.	131. 2 P.M.
Wednesday, 13	77	73	91	82	79	75	82.3	76.6	92	4 P.M.	83	3 P.M.	73	5 A.M.	71	5 A.M.	133. 10 A.M.
Thursday, 14	73	71	84	75	78	75	78.3	73.6	87	4 P.M.	78	4 P.M.	72	5 A.M.	70	5 A.M.	133. 2 P.M.
Friday, 15	74	72	89	80	78	74	80.3	75.3	90	3 P.M.	81	3 P.M.	72	5 A.M.	72	5 A.M.	135. 1 P.M.
Saturday, 16	75	71	72	64	64	59	70.3	64.6	77	3 A.M.	75	3 A.M.	60	12 P.M.	56	12 P.M.	120. 1 P.M.

	Dry Bulb.		Wet Bulb.
Mean for the week	78.4 degrees		73.0 degrees.
Maximum for the week, at 4 P.M., 13th	92.	at 3 P.M., 13th	83.
Minimum " at 12 P.M., 16th	60.	at 12 P.M., 16th	56.
Range "	32.		27.

Wind.

DATE. JULY.	DIRECTION. 7 A.M.	2 P.M.	9 P.M.	VELOCITY IN MILES. 9 P.M. to 7 A.M.	7 A.M. to 2 P.M.	2 P.M. to 9 P.M.	Distance for the Day.	FORCE IN POUNDS PER SQUARE FOOT. 7 A.M.	2 P.M.	9 P.M.	Max.	Time.
Sunday, 10	W	W	SW	38	32	24	94	0	¼	0	1½	3 P.M.
Monday, 11	WNW	S	W	38	16	36	90	0	¼	0	1	2.40 P.M.
Tuesday, 12	WNW	WSW	S	35	28	28	91	0	¼	0	½	3.50 P.M.
Wednesday, 13	WNW	SSE	N	37	25	42	104	0	1¼	0	4	5.15 P.M.
Thursday, 14	NNW	WNW	S	8	19	25	52	0	0	0	½	3 P.M.
Friday, 15	NW	S	S	18	21	62	101	0	1	¼	2¼	5 P.M.
Saturday, 16	WNW	NW	NW	77	100	74	251	¼	3	¼	6½	0.15 P.M.

Distance traveled during the week ..... 783 miles.
Maximum force " ..... 6½ pounds.

DATE. JULY.	Hygrometer. FORCE OF VAPOR. 7 A.M.	2 P.M.	9 P.M.	Mean.	RELATIVE HUMIDITY. 7 A.M.	2 P.M.	9 P.M.	Mean.	Clouds. CLEAR, 0. OVERCAST, 10. 7 A.M.	2 P.M.	9 P.M.	Rain and Snow. Ozone. DEPTH OF RAIN AND SNOW IN INCHES. Time of Beginning.	Time of Ending.	Duration. H. M.	Amount of Water.	Depth of Snow. IN.	O. 10.
Sunday, 10	.622	.746	.758	.709	85	64	74	74	0	0	3 Cir.	.....	.....	.....	....	....	0
Monday, 11	.679	.805	.785	.756	81	65	82	76	3 Cir.	6 Cir.	4 Cir.	.....	.....	.....	....	....	0
Tuesday, 12	.731	.836	.918	.828	90	65	87	81	0	1 Cu.	0	.....	.....	.....	....	....	0
Wedn'day, 13	.757	.970	.814	.847	81	66	82	76	0	3 Cir.Cu	10	.....	.....	.....	....	....	1
Thursday, 14	.731	.746	.827	.768	90	64	86	80	9 Cu.	5 Cir.Cu	6 Cir.	.....	.....	.....	....	....	0
Friday, 15	757	.901	.785	814	90	66	82	79	0	4 Cir.	0	.....	.....	.....	....	....	4
Saturday, 16	.704	.489	.433	.542	81	62	72	72	0	2 Cir.	0	.....	.....	.....	....	....	5

Total amount of water for the week ..... .00 inch.
Duration for the week ..... 00 hours, 00 minutes.

DATE.	7 A.M.	2 P.M.
Sunday, July 10	Warm, pleasant	Hot, close.
Monday, " 11	Warm, hazy	Hot, sultry.
Tuesday, " 12	Hot, sultry	Hot, sultry.
Wednesday, " 13	Hot, sultry	Hot, sultry.
Thursday, " 14	Warm, sultry	Warm, close.
Friday, " 15	Hot, sultry	Warm, close.
Saturday, " 16	Warm, pleasant	Warm, pleasant.

DANIEL DRAPER, PH. D., Director.

OFFICIAL DIRECTORY.

STATEMENT OF THE HOURS DURING which the Public Offices in the City are open for business, and at which the Courts regularly open and adjourn, as well as of the places where such offices are kept and such Courts are held; together with the heads of Departments and Courts:

EXECUTIVE DEPARTMENT.

Mayor's Office.

No. 6 City Hall, 10 A. M. to 4 P. M.; Saturdays, 10 A. M. to 12 M.

HUGH J. GRANT, Mayor. WILLIS HOLLY, Secretary and Chief Clerk.

Mayor's Marshal's Office.

No. 1 City Hall, 9 A. M. to 4 P. M.

DANIEL ENGELHARD, First Marshal.
FRANK FOX, Second Marshal.

COMMISSIONERS OF ACCOUNTS.

Rooms 114 and 115, Stewart Building, 9 A. M. to 4 P. M.
MICHAEL T. DALY, CHARLES G. F. WAHLE.

BOARD OF ARMORY COMMISSIONERS.

THE MAYOR, Chairman; PRESIDENT OF DEPARTMENT OF TAXES AND ASSESSMENTS, Secretary.

Address EDWARD P. BARKER, Staats Zeitung Building, Tryon Row. Office hours, 9 A. M. to 4 P. M.; Saturdays, 9 A. M. to 12 M.

AQUEDUCT COMMISSIONERS.

Room 209, Stewart Building, 5th floor, 9 A. M. to 4 P.M
JAMES C. DUANE, President; JOHN J. TUCKER, FRANCIS M. SCOTT, H. W. CANNON, and the MAYOR, COMPTROLLER and COMMISSIONER OF PUBLIC WORKS, *ex officio*, Commissioners; J. C. LULLEY, Secretary; A. FTELEY, Chief Engineer; E. A. WOLFF, Auditor.

COMMON COUNCIL.

Office of Clerk of Common Council.

No. 8 City Hall, 9 A. M. to 4 P. M.

JOHN H. V. ARNOLD, President Board of Aldermen.
MICHAEL F. BLAKE, Clerk Common Council.

DEPARTMENT OF PUBLIC WORKS.

No. 31 Chambers street, 9 A. M to 4 P. M.

THOMAS F. GILROY, Commissioner; MAURICE F. HOLAHAN, Deputy Commissioner (Room A).

ROBERT H. CLIFFORD, Chief Clerk (Room 6).

GEORGE W. BIRDSALL, Chief Engineer (Room 9); JOSEPH RILEY, Water Register (Rooms 2, 3 and 4); WM. M. DEAN, Superintendent of Street Improvements (Room 5); HORACE LOOMIS, Engineer in Charge of Sewers (Room 9); WILLIAM G. BERGEN, Superintendent of Repairs and Supplies (Room 15); WM. H. BURKE, Water Purveyor (Room 1); STEPHEN H. MCCORMICK, Superintendent of Lamps and Gas (Room 11); JOHN J. RYAN, Superintendent of Streets and Roads (Room 12); MICHAEL F. CUMMINGS, Superintendent of Incumbrances (Room 16).

BOARD OF ASSESSORS.

Office, 27 Chambers street, 9 A. M. to 4 P. M.

EDWARD GILON, Chairman; EDWARD CAHILL, CHARLES E. WENDT and PATRICK M. HAVERTY; WM. H. JASPER, Secretary.

DEPARTMENT OF STREET IMPROVEMENTS

TWENTY-THIRD AND TWENTY-FOURTH WARDS.

No. 2622 Third avenue, northeast corner of One Hundred and Forty-first street. Office hours, 9 A. M. to 4 P. M.; Saturdays, 12 M.

LOUIS J. HEINTZ, Commissioner; JOHN H. J. RONNER eputy Commissioner; WM. H. TEN EYCK, Secretary

FINANCE DEPARTMENT

Comptroller's Office.

No. 15 Stewart Building, Chambers street and Broadway, 9 A. M. to 4 P. M.

THEODORE W. MYERS, Comptroller; RICHARD A. STORRS, Deputy Comptroller; D. LOWBER SMITH, Assistant Deputy Comptroller.

Auditing Bureau.

Nos. 19, 21, 23 Stewart Building, Chambers street and Broadway, 9 A. M. to 4 P. M.

WILLIAM J. LYON, First Auditor.
DAVID E. AUSTEN, Second Auditor.

Bureau for the Collection of Assessments and Arrears of Taxes and Assessments and of Water Rents.

Nos. 31, 33, 35, 37, 39 Stewart Building, Chambers street and Broadway, 9 A. M. to 4 P. M.

OSBORNE MACDANIEL, Collector of Assessments and Clerk of Arrears.

No money received after 2 P. M.

Bureau for the Collection of City Revenue and of Markets.

Nos. 1 and 3 Stewart Building, Chambers street and Broadway, 9 A. M. to 4 P. M.

JOHN A. SULLIVAN, Collector of the City Revenue and Superintendent of Markets.

No money received after 2 P. M.

Bureau for the Collection of Taxes.

No. 57 Chambers street and No. 35 Reade street, Stewart Building, 9 A. M. to 4 P. M.

GEORGE W. MCLEAN, Receiver of Taxes; ALFRED VREDENBURGH, Deputy Receiver of Taxes.

No money received after 2 P. M.

Bureau of the City Chamberlain.

Nos. 25, 27 Stewart Building, Chambers street and Broadway, 9 A. M. to 4 P. M.

THOMAS C. T. CRAIN, City Chamberlain.

Office of the City Paymaster.

No. 33 Reade street, Stewart Building, 9 A. M. to 4 P.M
JOHN H. TIMMERMAN, City Paymaster.

LAW DEPARTMENT.

Office of the Counsel to the Corporation.

Staats Zeitung Building, third and fourth floors, 9 A. M. to 5 P. M. Saturdays, 9 A. M. to 12 M.

WILLIAM H. CLARK, Counsel to the Corporation.
ANDREW T. CAMPBELL, Chief Clerk.

Office of the Public Administrator.

No. 49 Beekman street, 9 A. M. to 4 P. M.

CHARLES E. LYDECKER, Public Adm'nistrator.

Office of Attorney for Collection of Arrears of Persona Taxes.

Stewart Building, Broadway and Chambers street, 9 A. M. to 4 P. M.

JOHN G. H. MEYERS, Attorney.
MICHAEL J. DOUGHERTY, Clerk.

Office of the Corporation Attorney.

No. 49 Beekman street, 9 A. M. to 4 P. M.

LOUIS HANNEMAN, Corporation Attorney.

POLICE DEPARTMENT

Central Office.

No. 300 Mulberry street, 9 A. M. to 4 P. M.

JAMES J. MARTIN, President; CHARLES F. MACLEAN, JOHN MCCLAVE and JOHN C SHEEHAN, Commissioners; WILLIAM H. KIPP, Chief Clerk; T. F. RODENBOUGH, Chief of Bureau of Elections.

DEPARTMENT OF CHARITIES AND CORRECTION.

Central Office.

No. 66 Third avenue, corner Eleventh street, 9 A. M. to 4 P. M.

HENRY H. PORTER, President; CHAS. E. SIMMONS, M. D., and EDWARD C. SHEEHY, Commissioners; GEORGE F. BRITTON, Secretary.

Purchasing Agent, FREDERICK A. CUSHMAN. Office hours, 9 A. M. to 4 P. M. Saturdays, 12 M.

Plans and Specifications, Contracts, Proposals and Estimates for Work and Materials for Building, Repairs and Supplies, Bills and Accounts, 9 A. M. to 4 P. M. Saturdays, 12 M. CHARLES BENN, General Bookkeeper.

Out-Door Poor Department. Office hours, 8.30 A. M. to 4.30 P. M. WILLIAM BLAKE, Superintendent. Entrance on Eleventh street.

FIRE DEPARTMENT.

Office hours for all, except where otherwise noted rom 9 A. M. to 4 P. M. Saturdays, to 12 M.

Headquarters.

Nos. 157 and 159 East Sixty-seventh street.

HENRY D. PURROY, President; S. HOWLAND ROBBINS and ANTHONY EICKHOFF, Commissioners; CARL JUSSEN Secretary.

HUGH BONNER, Chief of Department; PETER SEERY, Inspector of Combustibles; JAMES MITCHEL, Fire Marshal; WM. L. FINDLEY, Attorney to Department; J. ELLIOT SMITH, Superintendent of Fire Alarm Telegraph.

Central Office open at all hours.

DEPARTMENT OF BUILDINGS.

No. 220 Fourth avenue, corner of Eighteenth street, 9 A. M. to 4 P. M.

THOMAS J. BRADY, Superintendent.

HARLEM RIVER BRIDGE COMMISSION

Washington Building, No. 1 Broadway.

HEALTH DEPARTMENT

No. 301 Mott street, 9 A. M. to 4 P. M.

CHARLES G. WILSON, President, and JOSEPH D. BRYANT, M. D., the PRESIDENT OF THE POLICE BOARD an HEALTH OFFICER OF THE PORT, *ex officio*, Commissioners; EMMONS CLARK, Secretary.

DEPARTMENT OF PUBLIC PARKS.

Emigrant Industrial Savings Bank Building, Nos. 49 and 51 Chambers street, 9 A. M. to 4 P. M. Saturdays, 12 M.

PAUL DANA, President; ALBERT GALLUP, ABRAHAM B. TAPPEN and NATHAN STRAUS, Commissioners; CHARLES DE F. BURNS, Secretary.

DEPARTMENT OF DOCKS

Battery, Pier A, North river.

J. SERGEANT CRAM, President; EDWIN A. POST and JAMES J. PHELAN, Commissioners; AUGUSTUS T. DOCHARTY, Secretary.

Office hours, from 9 A. M. to 4 P. M.

DEPARTMENT OF TAXES AND ASSESSMENTS

Staats Zeitung Building, Tryon Row, 9 A. M. to 4 P. M Saturdays, 12 M.

EDWARD P. BARKER, President; THOMAS L. FEITNER and EDWARD L. PARRIS, Commissioners; FLOYD T. SMITH, Secretary.

DEPARTMENT OF STREET CLEANING.

Stewart Building. Office hours, 9 A. M. to 4 P. M.

THOMAS S. BRENNAN, Commissioner; WILLIAM DALTON, Deputy Commissioner; J. JOSEPH SCULLY, Chief Clerk.

CIVIL SERVICE SUPERVISORY AND EXAMINING BOARDS.

Cooper Union, 9 A. M. to 4 P. M.

JAMES THOMSON, Chairman; WILLIAM HILDRETH FIELD and HENRY MARQUAND, Members of the Supervisory Board; LEE PHILLIPS, Secretary and Executive Officer.

BOARD OF ESTIMATE AND APPORTIONMENT

The MAYOR, Chairman; E. P. BARKER (President, Department of Taxes and Assessments), Secretary; the COMPTROLLER and PRESIDENT OF THE BOARD OF ALDERMEN, Members; CHARLES V. ADEE, Clerk.

Office of Clerk, Staats Zeitung Building, Room 5.

BOARD OF EXCISE.

No. 54 Bond street, 9 A. M. to 4 P. M.

JOSEPH KOCH, LEICESTER HOLME and WILLIAM S. ANDREWS, Commissioners; JAMES F. BISHOP, Secretary.

SHERIFF'S OFFICE.

Nos. 6 and 7 New County Court-house, 9 A. M. to 4 P. M.
JOHN J. GORMAN, Sheriff; JOHN B. SEXTON, Under Sheriff.

REGISTER'S OFFICE.

East side City Hall Park, 9 A. M. to 4 P. M.
FRANK T. FITZGERALD, Register; JOHN VON GLAHN, Deputy Register.

COMMISSIONER OF JURORS.

Room 127, Stewart Building, Chambers street and Broadway, 9 A. M. to 4 P. M.

BERNARD F. MARTIN, Commissioner; JAMES E. CONNER, Deputy Commissioner.

COUNTY CLERK'S OFFICE.

Nos. 7 and 8 New County Court-house, 9 A. M. to 4 P. M.
WILLIAM J. MCKENNA, County Clerk; P. J. SCULLY, Deputy County Clerk.

DISTRICT ATTORNEY'S OFFICE.

Second floor, Brown-stone Building, City Hall Park 9 A. M. to 4 P. M.

DE LANCEY NICOLL, District Attorney; EDWARD T. FLYNN, Chief Clerk.

THE CITY RECORD OFFICE,

And Bureau of Printing, Stationery, and Blank Books.

No. 2 City Hall, 9 A. M. to 5 P. M., except Saturdays, on which days 9 A. M. to 12 M.

W. J. K. KENNY, Supervisor; DAVID RYAN, Assistant Supervisor; JOHN J. MCGRATH, Examiner.

CORONERS' OFFICE.

No. 27 Chambers street, 8 A. M. to 5 P. M. Sundays and holidays, 8 A. M. to 12.30 P. M.

MICHAEL J. B. MESSEMER, FERDINAND LEVY, LOUIS W. SCHULTZE, JOHN B. SHEA, Coroners; EDWARD F. REYNOLDS, Clerk of the Board of Coroners.

COURT OF SPECIAL SESSIONS.

At Tombs, corner Franklin and Centre streets, daily at 10.30 A. M., excepting Saturday.

JAMES P. KEATING, Clerk. Office, Tombs.

COURT OF GENERAL SESSIONS

No. 32 Chambers street. Court open at 11 o'clock A.M. adjourns 4 P. M.

FREDERICK SMYTH, Recorder; RANDOLPH B. MARTINE, JAMES FITZGERALD and RUFUS B. COWING, Judges.

JOHN F. CARROLL, Clerk. Office, Room No. 11, 10 A. M. till 4 P. M.

OYER AND TERMINER COURT

New County Court-house, second floor, southeast corner Room No. 12. Court opens at 10½ o'clock A.M.

JOHN F. CARROLL, Clerk. Office, Brown-stone Building, City Hall Park, second floor, northwest corner, Room No. 11, 10 A. M. till 4 P. M.

SURROGATE'S COURT.

New County Court-house. Court opens at 10.30 A. M. adjourns 4 P. M.

RASTUS S. RANSOM, Surrogate; WILLIAM V. LEARY, Chief Clerk.

SUPREME COURT

Second floor, New County Court-house, opens 10.30 A. M.; adjourns 4 P. M.

CHARLES H. VAN BRUNT, Presiding Justice; GEORGE L. INGRAHAM, ABRAHAM R. LAWRENCE, GEORGE C. BARRETT, GEORGE P. ANDREWS, EDWARD PATTERSON and MORGAN J. O'BRIEN, Justices; WILLIAM J. MCKENNA, Clerk.

General Term, Room No. 9, WILLIAM LAMB, Jr., Clerk
Special Term, Part I., Room No. 10, HUGH DONNELLY Clerk.
Special Term, Part II., Room No. 18, WILLIAM J. HILL, Clerk.
Chambers, Room No. 11, AMBROSE A. MCCALL, Clerk.
Circuit, Part I., Room No. 12, WALTER A. BRADY, Clerk.
Circuit, Part II., Room No. 14, JOHN LERSCHER Clerk.
Circuit, Part III., Room No. 13, GEORGE F. LYON, Clerk.
Circuit, Part IV., Room No. 15, J. LEWIS LYON, Clerk

COURT OF COMMON PLEAS

Third floor, New County Court-house, 9 A. M. to 4 P. M.
Assignment Bureau, Room No. 23, 9 A. M. to 4 P. M.
Clerk's Office, Room No. 21, 9 A. M. to 4 P. M.
General Term, Room No. 24, 11 o'clock A. M. to adjournment.
Special Term, Room No. 22, 11 o'clock A. M. to adjournment.
Chambers, Room No. 22, 10.30 o'clock A. M. to adjournment.
Part I. Room No. 26, 11 o'clock A. M. to adjournment.
Part II., Room No. 24, 11 o'clock A. M. to adjournment.
Equity Term, Room No. 25, 11 o'clock A. M. to adjournment.
Naturalization Bureau, Room No. 23, 9 A. M. to 4 P. M.
JOSEPH F. DALY, Chief Judge; MILES BEACH, HENRY BOOKSTAVER, HENRY BISHOFF, JR., ROGER A. PRYOR and LEONARD A. GIEGERICH, Judges; ALFRED WAGSTAFF, Chief Clerk

SUPERIOR COURT.

Third floor, New County Court-house, opens 11 A.M., adjourns 4 P. M.
General Term, Room No. 35.
Special Term, Room No. 33.
Equity Term, Room No 30.
Chambers, Room No. 33.
Part I., Room No. 34.
Part II., Room No. 35.
Part III., Room No. 36.
Naturalization Bureau, Room No. 31.
Clerk's Office, Room No. 31, 9 A. M. to 4 P. M.
JOHN SEDGWICK, Chief Judge; JOHN J. FREEDMAN, CHARLES H. TRUAX, P. HENRY DUGRO, DAVID MCADAM and HENRY A. GILDERSLEEVE, Judges; THOMAS BOESE, Chief Clerk.

CITY COURT.

City Hall.

General Term, Room No. 20.
Trial Term, Part I., Room No. 20.
Part II., Room No. 21.
Part III., Room No. 15.
Part IV., Room No. 11.
Special Term Chambers and will be held in Room No. 19, 10 A. M. to 4 P. M.
Clerk's Office, Room No. 10, City Hall, 9 A. M. to 4 P. M.
SIMON M. EHRLICH, Chief Justice; HENRY P. MCGOWN, ROBERT A. VAN WYCK, JAMES M. FITZSIMONS, JOSEPH E. NEWBURGER and JOHN H. MCCARTHY, Justices; JOHN B. MCGOLDRICK, Clerk.

CIVIL SERVICE SUPERVISORY AND EXAMINING BOARDS.

NEW YORK CITY CIVIL SERVICE BOARDS,
COOPER UNION,
NEW YORK, July 14, 1892.

PUBLIC NOTICE IS HEREBY GIVEN THAT open competitive examinations for the positions below mentioned will be held at this office upon the dates specified:

July 22. ENGINEMAN.
July 22. MATRON, Charities and Correction.

Yours, respectfully,
LEE PHILLIPS,
Secretary and Executive Officer.

DEPARTMENT OF STREET CLEANING.

NOTICE.

PERSONS HAVING BULKHEADS TO FILL, IN the vicinity of New York Bay, can procure material for that purpose—ashes, street sweepings, etc., such as is collected by the Department of Street Cleaning—free of charge, by applying to the Commissioner of Street Cleaning, in the Stewart Building.

THOMAS S. BRENNAN,
Commissioner of Street Cleaning.

FIRE DEPARTMENT.

HEADQUARTERS FIRE DEPARTMENT,
NOS. 157 AND 159 EAST SIXTY-SEVENTH STREET,
NEW YORK, July 18, 1892.

NOTICE: THE FOLLOWING IS HEREBY substituted for the advertisement of a sale at public auction under date of July 13, 1892. The articles specified below will be offered for sale at public auction by Van Tassell & Kearney, Auctioneers, on Friday, the 22d instant, as follows:

At Nos. 157 and 159 East Sixty-seventh Street, at 10 o'clock A. M.

Lot No. 1. One U tank, second size Steam Fire-engine, Amoskeag Manufacturing Co. registered No. 148).
Lot No 2. One U tank, second size Steam Fire-engine Amoskeag Manufacturing Co. (registered No. 166).
Lot No. 3. One Water Tower (registered No. 1).
Lot No. 4. One second size Roller-frame Hook and Ladder Truck (registered No. 8).
Lot No. 5. One second size Roller-frame Hook and Ladder Truck (registered No. 13).
Lot No. 6. One third size Goose-neck Frame Hook and Ladder Truck (registered No. 35).
Lot No. 7. One Buggy.
Lot No. 8. One Buggy.
Lot No. 9. One Buggy.
Lot No. 10. One Black Walnut Counter.

At Nos. 130 and 132 West Third Street, at 12 o'clock M.

Lot No. 11. Two Express Wagons.
Lot No. 12. One Wagon Truck.
Lot No. 13. Old Brass, to be sold by the pound.

At No. 20 Eldridge Street, at 1 o'clock P. M.

Lot No. 14. 200 pieces of Cotton Hose, without couplings.
Lot No. 15. 175 pieces of Rubber Hose, without couplings.
Lot No. 16. 32 pieces of Cotton Hose, with couplings.
Lot No. 17. 40 pieces of Rubber Hose, with couplings.
Lot No. 18. Small Rubber Hose.
Lot No. 19. 20 Suctions, without couplings.
Lot No. 20. 21 Hydrant Connections, without couplings.
Lot No. 21. Leather Pipes, with couplings.
Lot No. 22. Two 40-foot Ladders.
Lot No. 23. Five 35-foot Ladders.
Lot No. 24. Four 30-foot Ladders.
Lot No. 25. Two 25-foot Ladders.
Lot No. 26. Two 20-foot Ladders.
Lot No. 27. Two 15-foot Ladders.
Lot No. 28. One 10-foot Ladder.
Lot No. 29. Seven Battering Rams.
Lot No. 30. Old Harness.
Lot No. 31. One Hand Pump.
Lot No. 32. Four Hay Cutters.
Lot No. 33. Old Rope.
Lot No. 34. Scrap Paper.
Lot No. 35. Nine Oil Barrels.
Lot No. 36. Scrap iron, to be sold by the pound.
Lot No. 37. Old Tires.
Lot No. 38. Two Double Blocks.
Lot No. 39. Inside Shutters.
Lot No. 40. Eight Carboys, with jackets.
Lot No. 41. One Carboy, without jacket.
Lot No. 42. Iron Bedsteads.
Lot No. 43. Five Black Walnut Bedsteads.
Lot No. 44. Seven Desks.
Lot No. 45. Three parts of Desks.
Lot No. 46. Desk Drawers.
Lot No. 47. Seven Table Desks.
Lot No. 48. One Round Table.
Lot No. 49. Wooden Chairs.
Lot No. 50. Two Revolving Chairs.
Lot No. 51. Two Arm Chairs.
Lot No. 52. Pillows and Bedding.
Lot No. 53. Two Rubber Door-mats.
Lot No. 54. Carpet Remnants.

Each of the lots will be sold separately.

The right to reject all bids received is reserved.

The highest bidder for each lot, in case the bid is accepted, will be required to pay for the same in cash at the time of sale.

All of the articles sold must be removed within five days after the day of sale.

The articles may be seen before the day of sale at any time at the places above specified.

HENRY D. PURROY,
S. HOWLAND ROBBINS,
ANTHONY EICKHOFF,
Fire Commissioners.

DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION.

DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION,
No. 66 THIRD AVENUE,
NEW YORK, July 14, 1892.

TO CONTRACTORS.

MATERIALS AND WORK REQUIRED FOR RECONSTRUCTION OF PORTIONS OF BUILDING, PLUMBING, VENTILATION, ETC., OF FIFTY-SEVENTH STREET PRISON.

(No. 14.)

SEALED BIDS OR ESTIMATES FOR THE aforesaid work and materials, in accordance with the specifications and plans, will be received at the office of the Department of Public Charities and Correction, No. 66 Third avenue, in the City of New York, until Thursday, July 28, 1892, until 10 o'clock A. M. The person or persons making any bid or estimate shall furnish the same in a sealed envelope, indorsed "Bid or Estimate for Reconstruction of Fifty-seventh Street Prison," and with his or their name or names, and the date of presentation to the head of said Department, at the said office, on or before the day and hour above named, at which time and place the bids or estimates received will be publicly opened by the President of said Department and read.

THE BOARD OF PUBLIC CHARITIES AND CORRECTION RESERVES THE RIGHT TO REJECT ALL BIDS OR ESTIMATES IF DEEMED TO BE FOR THE PUBLIC INTEREST, AS PROVIDED IN SECTION 64, CHAPTER 410, LAWS OF 1882.

No bid or estimate will be accepted from, or contract awarded to, any person who is in arrears to the Corporation upon debt or contract, or who is a defaulter, as surety or otherwise, upon any obligation to the Corporation.

The award of the contract will be made as soon as practicable after the opening of the bids.

Any bidder for this contract must be known to be engaged in and well prepared for the business, and must have satisfactory testimonials to that effect; and the person or persons to whom the contract may be awarded will be required to give security for the performance of the contract, by his or their bond, with two sufficient sureties, each in the penal amount of **THREE THOUSAND $3,000 DOLLARS.**

Each bid or estimate shall contain and state the name and place of residence of each of the persons making the same; the names of all persons interested with him or them therein; and if no other person be so interested, it shall distinctly state that fact; also that it is made without any connection with any other person making an estimate for the same purpose, and is in all respects fair and without collusion or fraud; and that no member of the Common Council, head of a department, chief of a bureau, deputy thereof or clerk therein, or other officer of the Corporation, is directly or indirectly interested therein, or in the supplies to which it relates, or in any portion of the profits thereof. The bid or estimate must be verified by the oath, in writing, of the party or parties making the estimate, that the several matters stated therein are in all respects true. Where more than one person is interested, it is requisite that the VERIFICATION be made and subscribed by all the parties interested.

Each bid or estimate shall be accompanied by the consent, in writing, of two householders or freeholders in the City of New York, with their respective places of business or residence, to the effect that if the contract be awarded to the person making the estimate, they will, on its being so awarded, become bound as his sureties for its faithful performance, and that if he shall omit or refuse to execute the same, they will pay to the Corporation any difference between the sum to which he would be entitled on its completion and that which the Corporation may be obliged to pay to the person or persons to whom the contract may be awarded at any subsequent letting; the amount in each case to be calculated upon the estimated amount of the supplies by which the bids are tested. The consent above mentioned shall be accompanied by the oath or affirmation, in writing, of each of the persons signing the same, that he is a householder or freeholder in the City of New York, and is worth the amount of the security required for the completion of this contract, over and above all his debts of every nature, and over and above his liabilities as bail, surety or otherwise; and that he has offered himself as a surety in good faith and with the intention to execute the bond required by section 12 of chapter 7 of the Revised Ordinances of the City of New York, if the contract shall be awarded to the person or persons for whom he consents to become surety. The adequacy and sufficiency of the security offered is to be approved by the Comptroller of the City of New York.

No bid or estimate will be received or considered unless accompanied by either a certified check upon one of the State or National banks of the City of New York, drawn to the order of the Comptroller, or money to the amount of five per centum of the amount of the security required for the faithful performance of the contract. Such check or money must not be inclosed in the sealed envelope containing the estimate, but must be handed to the officer or clerk of the Department who has charge of the estimate-box, and no estimate can be deposited in said box until such check or money has been examined by said officer or clerk and found to be correct. All such deposits, except that of the successful bidder, will be returned to the persons making the same within three days after the contract is awarded. If the successful bidder shall refuse or neglect, within five days after notice that the contract has been awarded to him, to execute the same, the amount of the deposit made by him shall be forfeited to and retained by the City of New York, as liquidated damages for such neglect or refusal, but if he shall execute the contract within the time aforesaid, the amount of his deposit will be returned to him.

Should the person or persons to whom the contract may be awarded neglect or refuse to accept the contract within five days after written notice that the same has been awarded to his or their bid or proposal, or if he or they accept but do not execute the contract and give the proper security, he or they shall be considered as having abandoned it, and as in default to the Corporation, and the contract will be readvertised and relet, as provided by law.

Bidders will state the price for each article, by which the bids will be tested.

Bidders will write out the amount of their estimate in addition to inserting the same in figures.

Payment will be made by a requisition on the Comptroller, in accordance with the terms of the contract, or from time to time, as the Commissioners may determine.

The forms of the contract, including specifications, and showing the manner of payment, can be obtained at the office of the Department; and bidders are cautioned to examine each and all of their provisions carefully, as the Board of Public Charities and Correction will insist upon their absolute enforcement in every particular.

HENRY H. PORTER, President,
CHARLES E. SIMMONS, M. D., Commissioner,
EDWARD C. SHEEHY, Commissioner,
Public Charities and Correction.

DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION,
No. 66 THIRD AVENUE,
NEW YORK, July 12, 1892.

THE UNDERSIGNED WILL SELL AT PUBLIC Auction, by order of the Commissioners of Public Charities and Correction, at their office, No. 66 Third avenue, on Monday, July 25, 1892, at 11 o'clock A. M., the following, viz.:

COAL TAR,

for account of T. New Manufacturing Company, the former purchaser.

The Coal Tar now on hand and to be produced by the Department during the remainder of the year 1892, estimated at 175 barrels, more or less, barrels for the reception of the tar to be supplied by the purchaser, and the tar to be removed from the Pier foot of East Twenty-sixth street, by the purchaser, immediately on being notified that same is ready for delivery.

Twenty-five per cent. of estimated value to be paid on day of sale, and the remainder on delivery.

The Coal Tar can be examined at Blackwell's Island by intending bidders on any week day before the day of sale.

F. A. CUSHMAN, Purchasing Agent,
Department of Public Charities and Correction.

DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION,
No. 66 THIRD AVENUE,
NEW YORK, July 12, 1892.

THE UNDERSIGNED WILL SELL AT PUBLIC Auction, by order of the Commissioners of Public Charities and Correction, at their office, No. 66 Third avenue, on Monday, July 25, 1892, at 11 o'clock A. M., the following, viz.:

OLD IRON,

for account of Andrew Watson, a former purchaser—70,793 pounds Old Iron, to be received at the pier foot of East Twenty-sixth street, without any delay, as same is ready for delivery. The iron can be examined any week day before the sale at the Store-house Pier Blackwell's Island.

Twenty-five per cent. of amount of sale to be paid on day of sale, and the remainder on delivery.

F. A. CUSHMAN, Purchasing Agent,
Department of Public Charities and Correction.

BOARD OF EDUCATION.

SEALED PROPOSALS WILL BE RECEIVED BY the Board of School Trustees for the Twenty-second Ward, at the Hall of the Board of Education, No. 146 Grand street, until 10 o'clock A. M., on Monday, July 25, 1892, for Removing Grammar School Building No. 9 from its present site to the lots on the northwest corner of Eighty-second street and the Boulevard.

R. S. TREACY, Secretary,
Board of School Trustees, Twenty-second Ward.
Dated NEW YORK, July 19, 1892.

Plans and specifications may be seen, and blank proposals obtained, at the office of the Superintendent of School Buildings, No. 146 Grand street, third floor.

The Trustees reserve the right to reject any or all of the proposals submitted.

The party submitting a proposal, and the parties proposing to become sureties, must each write his name and place of residence on said proposal.

Two responsible and approved sureties, residents of this city, are required in all cases.

No proposal will be considered from persons whose character and antecedent dealings with the Board of Education render their responsibility doubtful.

HEALTH DEPARTMENT.

HEALTH DEPARTMENT—CITY OF NEW YORK,
No. 301 MOTT STREET,
NEW YORK, July 13, 1892.

PROPOSALS FOR ESTIMATES FOR THE ERECTION OF TWO FRAME PAVILIONS ON NORTH BROTHER ISLAND.

PROPOSALS FOR ESTIMATES FOR THE erection of two Frame Pavilions on North Brother Island, City and County of New York, will be received by the Commissioners of the Health Department, at their office, No. 301 Mott street, until 2.30 o'clock P. M., of the 26th day of July, 1892, at which time and place they will be publicly opened and read by said Commissioners.

Any person making an estimate for the above work shall furnish the same in a sealed envelope to the head of said Health Department, indorsed "Estimate for the Erection of two Frame Pavilions on North Brother Island, City and County of New York," and also with the name of the person or persons presenting the same and the date of its presentation.

Any bidder for this contract must be known to be engaged in and well prepared for the business, and must have satisfactory testimonials to that effect; and the person or persons to whom the contract may be awarded will be required to give security for the performance of the contract by his or their bond, with two sufficient sureties, each in the penal sum of $5,000.

Bidders are required to submit their estimates upon the following express conditions, which shall apply to and become a part of every estimate received:

1st. Bidders must satisfy themselves by personal examination of the location of the proposed work, and by such other means as they may prefer, as to the accuracy of the estimate, and shall not at any time after the submission of an estimate, dispute or complain of the statement of quantities, nor assert that there was any misunderstanding in regard to the nature or amount of the work to be done.

2d. Bidders will be required to complete the entire work to the satisfaction of the Health Department and in substantial accordance with the specifications of the contract and the plans therein referred to. No extra compensation, beyond the amount payable for the work before mentioned, which shall be actually performed, at the prices therefor to be specified by the lowest bidder, shall be due or payable for the entire work.

Bidders will state in their estimates a price for the whole of the work to be done, in conformity with the approved form of contract and the specifications therein set forth, by which price the bids will be tested. This price is to cover all expenses of every kind involved in or incidental to the fulfillment of the contract, including any claim that may arise through delay, from any cause, in the performing of the work thereunder.

Bidders will distinctly write out, both in words and in figures, the amount of their estimates for doing this work.

The person or persons to whom the contract may be awarded will be required to attend at this office, with the sureties offered by him or them, and execute the contract within five days from the date of the service of a notice to that effect, and in case of failure or neglect so to do, he or they will be considered as having abandoned it, and as in default to the Corporation; and the contract will be readvertised and relet, and so on until it be accepted and executed.

Bidders are required to state in their estimates their names and places of residence, the names of all persons interested with them therein; and if no other person be so interested, the estimate shall distinctly state the fact; also, that the estimate is made without any connection with any other person making an estimate for the same work, and that it is in all respects fair and without collusion or fraud; and also, that no member of the Common Council, head of a department, chief of a bureau, deputy thereof, or clerk therein, or other officer of the Corporation, is directly or indirectly interested therein, or in the supplies or work to which it relates, or in any portion of the profits thereof; which estimate must be verified by the oath, in writing, of the party making the estimate, that the several matters stated therein are in all respects true. *Where more than one person is interested, it is requisite that the verification be made and subscribed by all the parties interested.*

Each estimate shall be accompanied by the consent, in writing, of two householders or freeholders in the City of New York, *with their respective places of business or residence*, to the effect that if the contract be awarded to the person or persons making the estimate, they will, on its being so awarded, become bound as his or their sureties for its faithful performance; and that if said person or persons shall omit or refuse to execute the contract they will pay to the Corporation of the City of New York any difference between the sum to which said person or persons would be entitled on its completion, and that which said Corporation or the Health Department may be obliged to pay to the person to whom the contract may be awarded at any subsequent letting; the amount in each case to be calculated upon the estimated amount of the work to be done by which the bids are tested; the consent above mentioned shall be accompanied by the oath or affirmation, in writing, of each of the persons signing the same that he is a householder or freeholder in the City of New York and is worth the amount of the security required for the completion of the contract and stated in the proposals, over and above all his debts of every nature, *and over and above his liabilities as bail, surety and otherwise;* and that he has offered himself as a surety in good faith and with the intention to execute the bond required by law. The adequacy and sufficiency of the security offered is to be approved by the Comptroller of the City of New York after the award is made and prior to the signing of the contract.

No estimate will be received or considered unless accompanied by either a certified check upon one of the National banks of the City of New York, drawn to the order of the Comptroller, or money to the amount of five per centum of the amount of security required for the faithful performance of the contract. Such check or money must not be inclosed in the sealed envelope containing the estimate, but must be handed to the officer or clerk of the Department who has charge of the estimate-box, and no estimate can be deposited in said box until such check or money has been examined by said officer or clerk and found to be correct. All such deposits, except that of the successful bidder, will be returned by the Comptroller to the persons making the same, within three days after the contract is awarded If the successful bidder shall refuse or neglect within five days after notice that the contract has been awarded to him to execute the same, the amount of the deposit made by him shall be forfeited to and retained by the City of New York as liquidated damages for such neglect or refusal; but, if he shall execute the contract within the time aforesaid, the amount of his deposit will be returned to him by the Comptroller.

No estimate will be accepted from, or contract awarded to, any person who is in arrears to the Corporation, upon debt or contract, or who is a defaulter as surety or otherwise, upon any obligation to the Corporation.

Bidders are requested, in making their bids or estimates, to use a blank prepared for that purpose by the Department, a copy of which, together with the form of the agreement, including specifications, and showing the manner of payment for the work, can be obtained upon application therefor at the office of the Department.

The Department reserves the right to reject any or all estimates not deemed beneficial to or for the public interest.

Plans may be examined, and specifications and blank forms for bids or estimates obtained, by application to the Secretary of the Board, at his office, No. 301 Mott street, New York.

CHARLES G. WILSON,
JOSEPH D. BRYANT, M. D.,
WILLIAM T. JENKINS, M. D.,
JAMES J. MARTIN,
Commissioners.

BOARD OF STREET OPENING AND IMPROVEMENT.

NOTICE IS HEREBY GIVEN THAT THE Board of Street Opening and Improvement of the City of New York, deeming it for the public interest so to do, propose to alter the map or plan of the City of New York by closing Two Hundred and Eighteenth, Two Hundred and Nineteenth and Two Hundred and Twentieth streets, in the Twelfth Ward of the City of New York, from the easterly side of Ninth avenue to the United States Channel line of the Harlem River Improvement, more particularly described as follows:

TWO HUNDRED AND EIGHTEENTH STREET.

Beginning at a point, the southeasterly corner of Ninth avenue and Two Hundred and Eighteenth street; thence easterly along the southerly line of Two Hundred and Eighteenth street, distance 407 30-100 feet to the United States Channel line, Harlem River Improvement; thence northerly along said channel line, distance 83 5-100 feet to the northerly line of Two Hundred and Eighteenth street; thence westerly along said northerly line, distance 385 9-100 feet to the easterly line of Ninth avenue; thence southerly along said line, distance 80 feet to the point or place of beginning.

TWO HUNDRED AND NINETEENTH STREET.

Beginning at a point, the southeasterly corner of Ninth avenue and Two Hundred and Nineteenth street; thence easterly along the southerly line of Two Hundred and Nineteenth street, distance 323 46-100 feet to the United States Channel line, Harlem River Improvement; thence northerly along said channel line, distance 63 32-100 feet to the northerly line of Two Hundred and Nineteenth street; thence westerly along said northerly line, distance 303 26-100 feet to the easterly line of Ninth avenue; thence southerly along said line, distance 60 feet to the point or place of beginning.

TWO HUNDRED AND TWENTIETH STREET.

Beginning at a point, the southeasterly corner of Ninth avenue and Two Hundred and Twentieth street; thence easterly along the southerly line of Two Hundred and Twentieth street, distance 226 72-100 feet to the United States Channel line, Harlem River Improvement; thence northerly along said channel line, distance 67 77-100 feet to the northerly line of Two Hundred and Twentieth street; thence westerly along the northerly line of Two Hundred and Twentieth street, distance 195 35-100 feet to the easterly line of Ninth avenue; thence southerly along said line, distance 60 feet to the point or place of beginning.

And that such proposed action of the said Board of Street Opening and Improvement has been duly laid before the Board of Aldermen.

Dated NEW YORK, July 20, 1892.

V. B. LIVINGSTON,
Secretary.

POLICE DEPARTMENT.

POLICE DEPARTMENT—CITY OF NEW YORK,
OFFICE OF THE PROPERTY CLERK (ROOM NO. 9),
NO. 300 MULBERRY STREET,
NEW YORK, 1891.

OWNERS WANTED BY THE PROPERTY Clerk of the Police Department of the City of New York, No. 300 Mulberry street, Room No. 9, for the following property, now in his custody, without claimants: Boats, rope, iron, lead, male and female clothing, boots, shoes, wine, blankets, diamonds, canned goods, liquors, etc., also small amount money taken from prisoners and found by patrolmen of this Department.

JOHN F. HARRIOT
Property Clerk

DEPARTMENT OF DOCKS.

DEPARTMENT OF DOCKS,
PIER "A," NORTH RIVER.

TO CONTRACTORS.

(No. 416.)

PROPOSALS FOR ESTIMATES FOR REPAIRING THE CRIB-BULKHEAD BETWEEN WEST TENTH AND CHARLES STREETS, NORTH RIVER, AND FOR PAVING A PORTION OF WEST STREET, IN THE REAR OF SAID CRIB-BULKHEAD.

ESTIMATES FOR REPAIRING THE CRIB-bulkhead between West Tenth and Charles streets, North river, and for paving a portion of West street, in rear of said crib-bulkhead, will be received by the Board of Commissioners at the head of the Department of Docks, at the office of said Department, on Pier "A," foot of Battery place, North river, in the City of New York, until 1 o'clock P. M. of

THURSDAY, JULY 28, 1892,

at which time and place the estimates will be publicly opened by the head of said Department. The award of the contract, if awarded, will be made as soon as practicable after the opening of the bids.

Any person making an estimate for the work shall furnish the same in a sealed envelope to said Board, at said office, on or before the day and hour above named, which envelope shall be indorsed with the name or names of the person or persons presenting the same, the date of its presentation, and a statement of the work to which it relates.

The bidder to whom the award is made shall give security for the faithful performance of the contract in the manner prescribed and required by ordinance, in the sum of Four Thousand Dollars.

The Engineer's estimate of the nature, quantities and extent of the work is as follows:

1. New Cribwork complete, including all Timbers and Ironwork, Backing-logs, Earth and Stone Filling, Fenders, etc., measured from mean low-water mark to the under side of the backing-log, and from front of facing-timber to rear of cross-ties, about ..... 42,000 cubic feet.

2. White Pine, Yellow Pine, Cypress or Spruce Piles 113
(It is expected that these piles will have to be about 70 feet long to meet the requirements of the specifications for driving.)
3. White Oak Fender Piles, about 50 feet long.... 1
4. Cast-iron Pile-shoes, about..... 3,729 pounds.
5. Round Logs furnished to the contractor (not estimated in the crib-work), about..... 4,000 lin. ft.
6. Cast-iron Cleats, about ..... 1,350 pounds.
7. 1¼" Wrought-iron Screw-bolts, Nuts and Washers, about ..... 60 "
8. Labor of excavating Old Cribwork and disposal of Material, about.. 1,633 cu. yds.
9. Labor and Material for Back-filling, about..... 300 "
10. Labor of Framing and Carpentry, including all moving of Timber, Jointing, Planking, Bolting, Spiking, etc., as set forth in the specifications.
11. Sand or Cow Bay Gravel, about.... 225 cu. yds
12. Paving to be laid, about..... 901 sq. yds.
NOTE.—The paving-blocks therefor are to be furnished by the contractor.
13. Labor of all kinds, including removal of existing earth, etc., all grading, spreading, leveling, ramming of earth, paving sand or gravel and paving-blocks, moving of paving-blocks, etc., as set forth in the specifications, and shown on plan herein referred to.

N. B.—As the above-mentioned quantities, though stated with as much accuracy as is possible *in advance*, are approximate only, bidders are required to submit their estimates upon the following express conditions, which shall apply to and become a part of every estimate received:

(1.) Bidders must satisfy themselves by personal examination of the location of the proposed work and by such other means as they may prefer, as to the accuracy of the foregoing Engineer's estimate, and shall not, at any time after the submission of an estimate, dispute or complain of the above statement of quantities, nor assert that there was any misunderstanding in regard to the nature or amount of the work to be done.

(2.) Bidders will be required to complete the entire work to the satisfaction of the Department of Docks, and in substantial accordance with the specifications of the contract and the plans therein referred to. No extra compensation, beyond the amount payable for each class of the work before mentioned, which shall be actually performed, at the price therefor, to be specified by the lowest bidder, shall be due or payable for the entire work.

The work to be done under the contract is to be commenced on or about the 1st day of August, 1892, and all the work contracted for is to be fully completed on or before the 15th day of October, 1892, and the damages to be paid by the contractor for each day that the contract may be unfulfilled after the time fixed for the fulfillment thereof has expired, are, by a clause in the contract, determined, fixed and liquidated at Fifty Dollars per day.

All the old material taken from the crib-bulkhead to be removed under this contract will be relinquished to the contractor, and bidders must estimate the value of such material when considering the price for which they will do the work under the contract.

Bidders will state in their estimates a price for the whole of the work to be done, in each class, in conformity with the approved form of agreement and the specifications therein set forth, by which prices the bids will be tested. These prices are to cover all expenses of every kind involved in or incidental to the fulfillment of the contract, including any claim that may arise through delay from any cause in the performing of the work thereunder. The award of the contract, if awarded, will be made to the bidder who is the lowest for doing the whole of the work comprised in both classes, and whose estimate is regular in all respects.

Bidders will distinctly write out, both in words and in figures, the amount of their estimates for doing each class of the work.

The person or persons to whom the contract may be awarded will be required to attend at this office with the sureties offered by him or them, and execute the contract within five days from the date of the service of a notice to that effect; and in case of failure or neglect so to do he or they will be considered as having abandoned it, and as in default to the Corporation, and the contract will be readvertised and relet and so on until it be accepted and executed.

Bidders are required to state in their estimates their names and places of residence, the names of all persons interested with them therein; and if no other person be so interested the estimate shall distinctly state the fact; also that the estimate is made without any connection with any other person making an estimate for the same work, and that it is in all respects fair and without collusion or fraud; and also that no member of the Common Council, head of a department, chief of a bureau, deputy thereof or clerk therein, or other officer of the Corporation, is directly or indirectly interested therein, or in the supplies or work to which it relates, or in any portion of the profits thereof; which estimate must be verified by the oath, in writing, of the party making the estimate, that the several matters stated therein are in all respects true. *Where more than one person is interested it is requisite that the verification be made and subscribed to by all the parties interested.*

Each estimate shall be accompanied by the consent, in writing, of two householders or freeholders in the City of New York, *with their respective places of business or residence*, to the effect that if the contract be awarded to the person or persons making the estimate, they will, on its being so awarded, become bound as his or their sureties for its faithful performance; and that if said person or persons shall omit or refuse to execute the contract, they will pay to the Corporation of the City of New York any difference between the sum to which said person or persons would be entitled upon its completion and that which said Corporation may be obliged to pay to the person to whom the contract may be awarded at any subsequent letting; the amount, in each case, to be calculated upon the estimated amount of the work to be done in each class by which the bids are tested. The consent above mentioned shall be accompanied by the oath or affirmation, in writing, of each of the persons signing the same, that he is a householder or freeholder in the City of New York, and is worth the amount of the security required for the completion of the contract over and above all his debts of every nature, *and over and above his liabilities as bail, surety and otherwise;* and that he has offered himself as surety in good faith and with the intention to execute the bond required by law. The adequacy and sufficiency of the security offered will be subject to approval by the Comptroller of the City of New York, after the award is made and prior to the signing of the contract.

No estimate will be received or considered unless accompanied by either a certified check upon one of the State or National banks of the City of New York, drawn to the order of the Comptroller, or money, to the amount of *five per centum* of the amount of security required for the faithful performance of the contract. Such check or money must not be inclosed in the sealed envelope containing the estimate, but must be handed to the officer or clerk of the Department who has charge of the estimate-box, and no estimate can be deposited in said box until such check or money has been examined by said officer or clerk and found to be correct. All such deposits, except that of the successful bidder, will be returned to the persons making the same, within three days after the contract is awarded. If the successful bidder shall refuse or neglect, within five days after notice that the contract has been awarded to him, to execute the same, the amount of the deposit made by him shall be forfeited to and retained by the City of New York as liquidated damages for such neglect or refusal; but if he shall execute the contract within the time aforesaid, the amount of his deposit will be returned to him.

Bidders are informed that no deviation from the specifications will be allowed, unless under the written instructions of the Engineer-in-Chief.

No estimate will be accepted from, or contract awarded to, any person who is in arrears to the Corporation, upon debt or contract, or who is a defaulter, as surety or otherwise, upon any obligation to the Corporation.

THE RIGHT TO DECLINE ALL THE ESTIMATES IS RESERVED IF DEEMED FOR THE INTEREST OF THE CORPORATION OF THE CITY OF NEW YORK.

Bidders are requested, in making their bids or estimates, to use the blank prepared for that purpose by the Department, a copy of which, together with the form of the agreement, including specifications, and showing the manner of payment for the work, can be obtained upon application therefor at the office of the Department.

J. SERGEANT CRAM,
EDWIN A. POST,
JAMES J. PHELAN,
Commissioners of the Department of Docks.

Dated NEW YORK, July 16, 1892.

CORPORATION NOTICE.

PUBLIC NOTICE IS HEREBY GIVEN TO THE owner or owners, occupant or occupants of all houses and lots, improved or unimproved lands affected thereby, that the following assessments have been completed and are lodged in the office of the Board of Assessors for examination by all persons interested, viz.:

List 3869, No. 1. Alteration and improvement to sewer in Thirty-fourth street, between Eleventh and Twelfth avenues, and new sewer in Twelfth avenue, between Thirty-fourth and Thirty-fifth streets.

List 3883, No. 2. Paving One Hundred and Forty-fifth street, from Third to St. Ann's avenue, with trap blocks and laying crosswalks.

The limits embraced by such assessments include all the several houses and lots of grounds, vacant lots, pieces or parcels of land situated on—

No. 1. Both sides of Thirty-fourth street, from a point distant about 300 feet easterly from Tenth avenue to Twelfth avenue; both sides of Thirty-fifth street, from Tenth to Eleventh avenue; both sides of Tenth and Eleventh avenues, and east side of Twelfth avenue, from Thirty-fourth to Thirty-fifth street, and east side of Eleventh avenue, from Thirty-fifth to Thirty-sixth street.

No. 2. Both sides of One Hundred and Forty-fifth street, from Third to St. Ann's avenue and to the extent of half the block at the intersecting avenues.

All persons whose interests are affected by the above-named assessments, and who are opposed to the same, or either of them, are requested to present their objections, in writing, to the Chairman of the Board of Assessors, at their office, No. 27 Chambers street, within thirty days from the date of this notice.

The above-described lists will be transmitted, as provided by law, to the Board of Revision and Correction of Assessments for confirmation on the 15th day of August, 1892.

EDWARD GILON, Chairman,
PATRICK M. HAVERTY,
CHAS. E. WENDT,
EDWARD CAHILL,
Board of Assessors.

OFFICE OF THE BOARD OF ASSESSORS,
No. 27 CHAMBERS STREET,
NEW YORK, July 15, 1892.

NEW AQUEDUCT.

NOTICE OF APPLICATION FOR APPRAISAL.

PUBLIC NOTICE IS HEREBY GIVEN THAT it is the intention of the Counsel to the Corporation of the City of New York to make application to the Supreme Court for the appointment of Commissioners of Appraisal under chapter 490 of the Laws of 1883 and the laws amendatory thereof.

Such application will be made at a Special Term of the Supreme Court, to be held in the Second Judicial District, at the Court-house in White Plains, Westchester County, New York on the 23d day of July, 1892, at 11 o'clock in the forenoon of that day, or as soon thereafter as counsel can be heard. The object of such application is to obtain an order of the Court appointing three disinterested and competent freeholders, one of whom shall reside in the County of New York, and the other two of whom shall reside in the county in which the real estate hereinafter described is situated, as Commissioners of Appraisal, to ascertain and appraise the compensation to be made to the owners and all persons interested in the real estate hereinafter described, as proposed to be taken or affected for the purposes indicated in chapter 490 of the Laws of 1883 and the laws amendatory thereof. The real estate sought to be taken or affected as aforesaid is located in the town of North Salem, County of Westchester, and is laid out and indicated on a certain map, entitled:

Map of additional lands required for the construction of Reservoir M, which said map was filed in Westchester County Register's office, at White Plains, in said County, on November 9, 1891, as Map No. 1003.

The real estate proposed to be taken or affected is required for the construction and maintenance of the dam and reservoir known as Reservoir M or Titicus Reservoir, and the following is a statement of the boundaries of said dam and reservoir and of the real estate to be acquired therefor under this proceeding:

All those certain pieces or parcels of land in the town of North Salem, County of Westchester and State of New York, which taken together constitute a tract of land particularly described and shown on said map, and described as follows:

Beginning at the northwest corner of parcel number nineteen on said map; from thence running south 88 degrees 35 minutes, east 1,029 13-100 feet; south 66 degrees 5 minutes, east 541 10-100 feet; south 82 degrees 36 minutes, east 1,544 36-100 feet; south 58 degrees 0 minutes, east 1,862 60-100 feet; north 21 degrees, east 423 47-100 feet; north 40 degrees 37 minutes 30 seconds, east 196 95-100 feet; south 46 degrees 32 minutes, east 922 24-100 feet; south 77 degrees 41 minutes, east 561 93-100 feet; south 44 degrees, east 462 36-100 feet; south 13 degrees 13 minutes, west 435 42-100 feet; south 61 degrees 29 minutes, east 263 15-100 feet; south 82 degrees 35 minutes, east 55 3-10 feet; north 63 degrees 9 minutes, east 326 1-10 feet; south 59 degrees 15 minutes, east 1,032 90-100 feet; north 64 degrees 14 minutes, east 349 18-100 feet; south 39 degrees 15 minutes, east 505 1-10 feet; south 24 degrees, west 710 15-100 feet; south 11 degrees 41 minutes, west 157 99-100 feet; south 69 degrees 9 minutes, east 193 75-100 feet; south 75 degrees 51 minutes, east 122 5-10 feet; south 81 degrees 44 minutes, east 357 7-10 feet; south 82 degrees 59 minutes, east 132 28-100 feet south 82 degrees 5 minutes, east 330 8-100 feet; south 15 degrees 7 minutes, west 280 52-100 feet; south 52 degrees, east 513 11-100 feet; south 40 degrees 43 minutes, west 73 5-10 feet; north 74 degrees 32 minutes, west 191 24-100 feet; south 40 degrees 10 minutes, west 597 90-100 feet; south 43 degrees 35 minutes, east 457 79-100 feet; south 67 degrees 47 minutes, west 239 58-100 feet; south degree 12 minutes 30 seconds, west 819 29-100 feet; south 84 degrees 37 minutes, west 902 27-100 feet; north 4 degrees 5 minutes, east 566 58-100 feet; north 1 degree 7 minutes, east 1,538 99-100 feet; north 73 degrees 34 minutes, west 794 55-100 feet; north 40 degrees 31 minutes, west 833 60-100 feet; north 72 degrees 15 minutes, west 955 feet; north 51 degrees 6 minutes, west 330 2-100 feet; south 63 degrees 40 minutes 30 seconds, west 1,364 feet; north 64 degrees 21 minutes 30 seconds, west 1,149 20-100 feet; north 48 degrees 49 minutes, west 702 feet; north 71 degrees 50 minutes, west 601 70-100 feet; south 27 degrees 52 minutes, west 2,054 40-100 feet; north 57 degrees 35 minutes, west 402 feet; north 5 degrees 2 minutes 30 seconds, west 307 66-100 feet; north 85 degrees 13 minutes, west 29 feet; north no degrees 9 minutes, east 78 3-10 feet; north 11 degrees 41 minutes, east 139 6-10 feet; north 58 degrees 52 minutes 30 seconds, west 133 5-10 feet; north 8 degrees 47 minutes, west 184 feet; north 46 degrees 54 minutes 30 seconds, west 1,010 8-10 feet; south 35 degrees 9 minutes, west 370 feet; north 4 degrees 11 minutes, east 1,597 40-100 feet; north 86 degrees 26 minutes 30 seconds, west 466 13-100 feet; north 4 degrees 13 minutes, east 330 75-100 feet; north 3 degrees 44 minutes, east 653 89-100 feet; north 6 degrees 5 minutes, east 318 26-100 feet; north 4 degrees 32 minutes, east 226 24-100 feet; north 4 degrees 46 minutes 30 seconds, east 100 3-10 feet; north 5 degrees 3 minutes, east 135 27-100 feet, to the point and place of beginning.

All of said lands are to be acquired in fee, and include all of the parcels shown on said map Number 1003.

Reference is hereby made to said map for a more detailed and particular description of the premises to be acquired.

Public notice is also given that in the construction of the said dam and reservoir, known as Reservoir M, it has been and will be necessary to change the highway system through the lands acquired and to be acquired, and that on June 2, 1892, a map was filed in the Westchester County Register's office, at White Plains in said County, entitled "Map of lands in the Town of North Salem acquired by the City of New York, under chapter 490 of the Laws of 1883 in the construction of Reservoir M, said map being numbered in said Register's office by the Number 1016. That said map shows the portion of the real estate heretofore acquired by the City of New York for the construction of said reservoir which it is proposed to substitute in place of the real estate heretofore used for highway purposes, and said map further shows the portions of the old roads to be used and raised, and shows where new roads are to be constructed through the same parcels heretofore acquired by the City, and designated as parcels 1-16, both inclusive; and public notice is further given that on June 2, 1892, a map was filed in the Westchester County Register's office, entitled: "Map of lands in the Town of North Salem to be acquired by the City of New York, under chapter 490 of the Laws of 1883, in the construction of Reservoir M, said map being designated by Number 1017; that said map shows the portions of the real estate to be acquired, and which it is proposed to substitute in place of the real estate heretofore used for highway purposes, and said map further shows the portions of the old roads to be used and raised, and shows where new roads are to be constructed through the parcels to be acquired and designated on said map as parcels 17-38, both inclusive, and further notice is given that an application will be made to the Supreme Court at the above mentioned time and place for an order approving the highway system or substituted highway, as shown on the maps above referred to.

Dated NEW YORK CITY, June 3, 1892.

WILLIAM H. CLARK,
Counsel to the Corporation,
No. 2 Tryon Row,
New York City

DEPARTMENT OF PUBLIC WORKS

DEPARTMENT OF PUBLIC WORKS,
COMMISSIONER'S OFFICE, No. 31 CHAMBERS STREET,
NEW YORK, July 20, 1892.

NOTICE OF SALE AT PUBLIC AUCTION.

ON MONDAY, AUGUST 1, 1892, AT 10.30 A.M., the Department of Public Works will sell at Public Auction, on the premises, by Messrs. Van Tassell & Kearney, auctioneers, the following, viz.:

On Forty-fourth Street, between Eleventh Avenue and Hudson River.

ABOUT 200,000 OLD BELGIAN PAVING BLOCKS.

TERMS OF SALE.

Cash payments in bankable funds at the time and place of sale, and the removal within five days by the purchaser of the blocks purchased, otherwise he will forfeit the same, together with all moneys paid therefor, and the Department will resell the paving blocks.

THOS. F. GILROY,
Commissioner of Public Works.

DEPARTMENT OF PUBLIC WORKS,
COMMISSIONER'S OFFICE,
No. 31 CHAMBERS STREET,
NEW YORK, July 12, 1892.

NOTICE OF SALE AT PUBLIC AUCTION.

ON MONDAY, AUGUST 1, 1892, THE DEPARTment of Public Works will sell at public auction, by Messrs. Van Tassell & Kearney, auctioneers, at the Corporation Yards, One Hundred and Nineteenth street and St. Nicholas avenue, foot of East Sixteenth street and foot of Rivington street—sale to commence at the One Hundred and Nineteenth Street Yard at 10.30 A. M.—the following articles, viz.:

TRUCKS, WAGONS, CARTS, STANDS, BOOTHS, BOOTBLACK-STANDS, TELEGRAPH POLES, ELECTRIC WIRE, ETC.

TERMS OF SALE.

Cash payments in bankable funds at the time and place of sale, and the immediate removal by the purchaser of the articles purchased, otherwise the articles will be resold and all moneys paid therefor forfeited.

THOS. F. GILROY,
Commissioner of Public Works

DEPARTMENT OF PUBLIC WORKS,
COMMISSIONER'S OFFICE,
No. 31 CHAMBERS STREET,
NEW YORK, August 14, 1889.

TO OWNERS OF LANDS ORIGINALLY ACQUIRED BY WATER GRANTS.

ATTENTION IS CALLED TO THE RECENT act of the Legislature (chapter 449, Laws of 1889), which provides that whenever any streets or avenues in the city, described in any grant of land under water, from the Mayor, Aldermen and Commonalty containing covenants requiring the grantees and their successors to pave, repave, keep in repair or maintain such streets, shall be in need of repairs, pavement or repavement, the Common Council may, by ordinance, require the same to be paved, repaved or repaired, and the expense thereof to be assessed on the property benefited; and whenever the owner of a lot so assessed shall have paid the assessment levied for such paving, repaving or repairing, such payment shall release and discharge such owner from any and every covenant and obligation as to paving, repaving and repairing, contained in the water grant under which the premises are held, and no further assessment shall be imposed on such lot for paving, repaving or repairing such street or avenue, unless it shall be petitioned for by a majority of the owners of the property (who shall also be the owners of a majority of the property in frontage) on the line of the proposed improvement.

The act further provides that the owner of any such lot may notify the Commissioner of Public Works, in writing, specifying the ward number and street number of the lot that he desires, for himself, his heirs and assigns, to be released from the obligation of such covenants, and elects and agrees that said lot shall be thereafter liable to be assessed as above provided, and thereupon the owner of such lot, his heirs and assigns shall thenceforth be relieved from any obligation to pave, repair, uphold or maintain said street, and the lot in respect of which such notice was given shall be liable to assessment accordingly.

The Commissioner of Public Works desires to give the following explanation of the operation of this act:

When notice, as above described, is given to the Commissioner of Public Works, the owner of the lot or lots therein described, and his heirs and assigns, are forever released from all obligation under the grant in respect to paving, repaving or repairing the street in front of or adjacent to said lot or lots, except one assessment for such paving, repaving or repairs, as the Common Council may, by ordinance, direct to be made thereafter.

No street or avenue within the limits of such grants can be paved, repaved or repaired until said work is authorized by ordinance of the Common Council, and when the owners of such lots desire their streets to be paved, repaved or repaired, they should state their desire and make their application to the Board of Aldermen and not to the Commissioner of Public Works, who has no authority in the matter until directed by ordinance of the Common Council to proceed with the pavement, repavement or repairs.

THOS. F. GILROY,
Commissioner of Public Works

DEPARTMENT OF PUBLIC WORKS,
BUREAU OF WATER REGISTER,
No. 31 CHAMBERS STREET, ROOM 2,
NEW YORK, May 1, 1892.

CROTON WATER RATES.

NOTICE IS HEREBY GIVEN THAT THE annual Water Rates for 1892 are now due and payable at this office.

THOMAS F. GILROY,
Commissioner of Public Works.

SUPREME COURT.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title (wherever the same has not been heretofore acquired), to WILLIS AVENUE (although not yet named by proper authority), extending from the Harlem river to East One Hundred and Forty-seventh street, in the Twenty-third Ward of the City of New York, as the same has been heretofore laid out and designated as a first-class street or road by the Department of Public Parks.

NOTICE IS HEREBY GIVEN, PURSUANT TO the provisions of section 986, chapter 410, Laws of 1882, by the undersigned Commissioners of Estimate and Assessment, to all persons interested in these proceedings or in any lands affected thereby, and to any person or persons who may consider themselves aggrieved by our estimate and assessment.

First—That we did deposit with the Commissioner of Public Works, at his office, No. 31 Chambers street in the City of New York, for and during the space of forty days, an abstract of our estimate of assessment, accompanied by copies of the diagrams prepared by us, which distinctly indicate by separate numbers the names of the owners of or the claimants to the respective tracts or parcels to be taken or assessed in these proceedings, and which also specify, in figures, with sufficient accuracy, the dimensions and bounds of each of said tracts or parcels. Whenever we have been unable to ascertain with sufficient certainty the name of any owner of any parcel of said land, we have indicated such parcel upon the diagram embracing it as belonging to unknown owners. We have also published a notice for thirty days in the CITY RECORD, beginning the 12th day of May, 1892, stating our intention to present our report for confirmation to the Supreme Court at the time and place therein specified, and that all persons interested in such proceeding or in any of the lands affected thereby having objections thereto shall file the same in writing with the undersigned Commissioners within thirty days after the first publication of said notice, and that we would hear such objections within the ten week days next after the expiration of said thirty days, in the manner prescribed by section 984 of chapter 410, Laws of 1882.

Second—That we have assessed for benefit in these proceedings all those several lots, pieces or parcels of land situate, lying and being in the City of New York, which taken together are bounded and described as follows, viz.: Northerly by the northerly line of East One Hundred and Forty-seventh street; easterly by the centre line of the blocks between Willis avenue and Brook avenue, from the northerly side of East One Hundred and Forty-seventh street to the southerly side of East One Hundred and Thirty-eighth street; thence by a line drawn parallel to Willis avenue and distant 535 feet easterly therefrom to the United States channel-line in the Harlem river; southerly by the United States channel-line in the Harlem river; westerly by the centre line of the blocks between Alexander and Third avenues and Willis avenue; excepting from said area all the streets, avenues and roads or portions thereof heretofore legally opened, and all the unimproved land included within the lines of streets, avenues, roads, public squares and places shown and laid out upon any map or maps filed by the Commissioners of the Department of Public Parks, pursuant to the provisions of chapter 604 of the Laws of 1874 and the laws amendatory thereof, or of chapter 410 of the Laws of 1882.

Third—That our abstract of estimate and assessment, together with the diagrams embracing the respective tracts or parcels of lands to be taken or assessed in these proceedings, may be inspected and examined at our office, Rooms 3 and 4, No. 31 Chambers street, in the City of New York.

Fourth—That we will hear any person or persons who may consider themselves aggrieved by such estimate and assessment in opposition to the same on the 3d day of August, 1892, at 1 o'clock in the afternoon of that day, at our said office.

Fifth—That it is our intention to present our report for confirmation to the Supreme Court, at a Special Term thereof, to be held at Chambers thereof, at the County Court-house in the City of New York, on the 10th day of August, 1892, at the opening of the Court on that day; to which day the motion to confirm the same will be adjourned, and that then and there or as soon thereafter as counsel can be heard thereon, a motion will be made that the said report be confirmed.

Dated NEW YORK, July 22, 1892.

THOMAS F. GRADY, Chairman,
JOHN H. ROGAN,
WILLIAM E. STILLINGS,
Commissioners.

JOHN P. DUNN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to MARCHER AVENUE (although not yet named by proper authority), extending from Jerome avenue to Featherbed Lane, in the Twenty-third and Twenty-fourth Wards of the City of New York.

NOTICE IS HEREBY GIVEN THAT WE, THE undersigned, were appointed by an order of the Supreme Court, bearing date the 18th day of April, 1889, Commissioners of Estimate and Assessment for the purpose of making a just and equitable estimate and assessment of the loss, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damage, as the case may be, to the respective owners, lessees, parties and persons, respectively entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose by and in consequence of opening a certain avenue herein designated as Marcher avenue, as shown and delineated on certain maps made by the Commissioners of the Department of Public Parks, and filed in the office of the Secretary of State of the State of New York on the 14th day of February, 1889, in the office of the Register of the City and County of New York on the 14th day of February, 1889, and in the office of the Department of Public Parks on the 11th day of February, 1889, and more particularly set forth in the aforesaid order of appointment and the petition of the Board of Street Opening and Improvement filed therewith in the office of the Clerk of the City and County of New York; and a just and equitable estimate and assessment of the value of the benefit and advantage of said avenue, so to be opened or laid out and formed, to the respective owners, lessees, parties and persons, respectively entitled to or interested in the said respective lands,

tenements, hereditaments and premises not required for the purpose of opening, laying out and forming the same, but benefited thereby, and of ascertaining and defining the extent and boundaries of the respective tracts or parcels of land to be taken or to be assessed therefor, and of performing the trusts and duties required of them by chapter 16, title 5, of the act entitled "An Act to consolidate into one act and to declare the special and local laws affecting public interests in the City of New York," passed July 1, 1882, and the acts or parts of acts in addition thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of opening the said avenue, or affected thereby, and having any claim or demand on account thereof, are hereby required to present the same, duly verified, to the undersigned Commissioners of Estimate and Assessment, at our office, No. 51 Chambers street, in the City of New York, Room No. 3, with such affidavits or other proofs as the said owners or claimants may desire, within thirty days after the date of this notice (July 22, 1892).

And we, the said Commissioners, will be in attendance at our said office on the 1st day of September, 1892, at 11 o'clock in the forenoon of that day, to hear the said parties and persons in relation thereto. And at such time and place, and at such further or other time and place as we may appoint, we will hear such owners in relation thereto and examine the proofs of such claimant or claimants, or such additional proofs and allegations as may then be offered by such owner or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, July 22, 1892.

JAMES MITCHELL,
HENRY WINTHROP GRAY,
SAMUEL W. MILBANK,
Commissioners.

JOHN P. DUNN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of said city, relative to the opening of LEXINGTON AVENUE, from Ninety-seventh street to One Hundred and Second street, in the Twelfth Ward of the City of New York.

NOTICE IS HEREBY GIVEN THAT THE undersigned were appointed by orders of the Supreme Court, bearing date the 6th and 15th days of June, 1892, Commissioners of Estimate and Assessment, for the purpose of making a just and equitable estimate and assessment of the loss, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damage, as the case may be, to the respective owners, lessees, parties and persons respectively entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose by and in consequence of opening a certain avenue herein designated as Lexington avenue, as said avenue was laid out and extended by chapter 469 of the Laws of 1881, and by the Board of Street Opening and Improvement of the City of New York on the 17th day of May, 1884, and more particularly set forth in the petition of the Board of Street Opening and Improvement filed in the office of the Clerk of the City and County of New York; and a just and equitable estimate and assessment of the value of the benefit and advantage of said avenue so to be opened or laid out and formed, to the respective owners, lessees, parties and persons respectively entitled to or interested in the said respective lands, tenements, hereditaments and premises not required for the purpose of opening, laying out and forming the same, but benefited thereby, and of ascertaining and defining the extent and boundaries of the respective tracts or parcels of land to be taken or to be assessed therefor, and of performing the trusts and duties required of them by chapter 16, title 5, of the act entitled "An act to consolidate into one act and to declare the special and local laws affecting public interest in the City of New York," passed July 1, 1882, and the acts or parts of acts in addition thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of opening the said avenue, or affected thereby, and having any claim or demand on account thereof, are hereby required to present the same, duly verified, to the undersigned Commissioners of Estimate and Assessment, at their office, No. 51 Chambers street, in the City of New York, Room No. 3, with such affidavits or other proofs as the said owners or claimants may desire, within thirty days after the date of this notice (July 21, 1892).

And we, the said Commissioners, will be in attendance at our said office on the 25th day of August, 1892, at 11 o'clock in the forenoon of that day, to hear the said parties and persons in relation thereto. And at such time and place, and at such further or other time and place as we may appoint, we will hear such owners in relation thereto and examine the proofs of such claimant or claimants or such additional proofs and allegations as may then be offered by such owner, or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, July 21, 1892.

THOMAS P. WICKES,
THEODORE WESTON,
ISIDOR GRAYHEAD,
Commissioners.

MATTHEW P. RYAN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to ONE HUNDRED AND THIRTY-FIRST STREET, from Tenth avenue to Convent avenue, in the Twelfth Ward of the City of New York.

NOTICE IS HEREBY GIVEN THAT THE BILL of costs, charges and expenses incurred by reason of the proceedings in the above-entitled matter, will be presented for taxation to one of the Justices of the Supreme Court, at the Chambers thereof, in the County Court house, at the City Hall in the City of New York, on the 2d day of August, 1892, at 10.30 o'clock in the forenoon of that day, or as soon thereafter as counsel can be heard thereon, and that the said bill of costs, charges and expenses has been deposited in the office of the Department of Public Works, there to remain for and during the space of ten days.

Dated NEW YORK, July 21, 1892.

OWEN W. FLANAGAN,
WILLIAM G. DAVIS,
JOSEPH C. WOLFF,
Commissioners.

MATTHEW P. RYAN, Clerk.

In the matter of the application of the Board of Education by the Counsel to the Corporation of the City of New York, relative to acquiring title by the Mayor, Aldermen and Commonalty of the City of New York to certain lands at KINGSBRIDGE, in the Twenty-fourth Ward of said city, duly selected and approved by said Board as a site for school purposes, under and in pursuance of the provisions of chapter 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890.

PURSUANT TO THE PROVISIONS OF CHAPTER 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof, in the County Court-house in the City of New York, on the 13th day of August, 1892, at the opening of the Court on that day or as soon thereafter as counsel can be heard thereon, for the appointment of Commissioners of Estimate in the above-entitled matter.

The nature and extent of the improvement hereby intended is the acquisition of title by the Mayor, Aldermen and Commonalty of the City of New York, to certain lands and premises, with the buildings thereon and the appurtenances thereto belonging, at Kingsbridge, in the Twenty-fourth Ward of the said city, in fee simple absolute, the same to be converted, appropriated and used to and for the purposes specified in said chapter 191 of the Laws of 1888, as amended by said chapter 35 of the Laws of 1890, said property having been duly selected and approved by the Board of Education as a site for school purposes under and in pursuance of the provisions of said chapter 191 of the Laws of 1888, as amended by said chapter 35 of the Laws of 1890, being the following described lots, pieces or parcels of land, namely:

All that certain piece or parcel of land situate, lying and being at Kingsbridge, in the Twenty-fourth Ward of the City of New York, bounded and described as follows:

Beginning at the northwesterly corner of Church street and Webers lane, and running thence westerly along the northerly side of Webers lane, one hundred and fifty feet; thence northerly, parallel with Church street, two hundred feet; thence easterly, parallel with Webers lane, one hundred and fifty feet to the westerly side of Church street, and thence southerly along the westerly side of Church street, two hundred feet to the point or place of beginning.

Dated NEW YORK, July 13, 1892.

WILLIAM H. CLARK,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Education by the Counsel to the Corporation of the City of New York, relative to acquiring title by the Mayor, Aldermen and Commonalty of the City of New York, to certain lands on the northerly side of THIRTY-FIFTH STREET, between Eighth and Ninth avenues, in the Twentieth Ward of said city, duly selected and approved by said Board as a site for school purposes, under and in pursuance of the provisions of chapter 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890.

PURSUANT TO THE PROVISIONS OF CHAPTER 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof, in the County Court-house in the City of New York, on the 13th day of August, 1892, at the opening of the Court on that day or as soon thereafter as counsel can be heard thereon, for the appointment of Commissioners of Estimate in the above-entitled matter.

The nature and extent of the improvement hereby intended is the acquisition of title by the Mayor, Aldermen and Commonalty of the City of New York, to certain lands and premises, with the buildings thereon and the appurtenances thereto belonging, on the northerly side of Thirty-fifth street, between Eighth and Ninth avenues, in the Twentieth Ward of the said city, in fee simple absolute, the same to be converted, appropriated and used to and for the purposes specified in said chapter 191 of the Laws of 1888, as amended by said chapter 35 of the Laws of 1890, said property having been duly selected and approved by the Board of Education as a site for school purposes, under and in pursuance of the provisions of said chapter 191 of the Laws of 1888, as amended by said chapter 35 of the Laws of 1890, being the following described lots, pieces or parcels of land, namely:

All that certain lot, piece or parcel of land situate, lying and being in the Twentieth Ward of the City of New York, bounded and described as follows:

Beginning at a point on the northerly side of Thirty-fifth street, distant one hundred and twenty-five feet one inch easterly from the northeasterly corner of Ninth avenue and Thirty-fifth street, and running thence easterly along the northerly side of Thirty-fifth street, twenty-four feet eleven inches; thence northerly, parallel with Ninth avenue, ninety-eight feet nine inches; thence westerly, parallel with Thirty-fifth street, twenty-four feet eleven inches, and thence southerly, parallel with Ninth avenue, ninety-eight feet nine inches to the point or place of beginning.

Dated NEW YORK, July 13, 1892.

WILLIAM H. CLARK,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Armory Board by the Counsel to the Corporation of the City of New York, under and in pursuance of the provisions of chapter 330 of the Laws of 1887, as amended by chapter 485 of the Laws of 1890, relative to acquiring, by the Mayor, Aldermen and Commonalty of the City of New York, certain rights, interests, privileges and easements of, in and to certain lands on the northerly side of FOURTEENTH STREET, between Sixth and Seventh avenues in said city, title to which lands has been heretofore acquired by said Mayor, Aldermen and Commonalty of the City of New York, pursuant to the aforesaid acts of the Legislature, as part and parcel of a site for armory purposes.

PURSUANT TO THE PROVISIONS OF CHAPTER 330 of the Laws of 1887, as amended by chapter 485 of the Laws of 1890, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court to be held at Chambers thereof, in the County Court-house, in the City of New York, on the 13th day of August, 1892, at the opening of the Court on that day, or as soon thereafter as counsel can be heard thereon, for the appointment of Commissioners of Estimate in the above entitled matter.

The nature and extent of the improvement hereby intended is the acquisition by the Mayor, Aldermen and Commonalty of the City of New York of all the rights, interests, privileges and easements of every kind and nature whatsoever of, in and to the lands and premises hereafter described, held, owned, possessed or enjoyed by any person or persons, parties or estates, arising, existing or growing out of a certain agreement or covenant bearing date the 26th day of May, 1845, and recorded in the office of the Register of the City and County of New York on the 30th day of May, 1845, in Liber 463 of Conveyances, at page 170, made and entered into by and between John Tonnele, the then owner of the lands hereinafter described, and C. E. Cornell, James McCullough, the estate and heirs of A. M. Muir, deceased, and Samuel Longstreet, the then owners of certain other and adjacent lands on Fourteenth street, in and by which it was provided that the buildings thereafter to be erected on said lands should set back from the building line of Fourteenth street, and distant northerly therefrom eight feet, said rights, interests, privileges and easements to be appropriated, converted and used to and for the purposes specified in said chapter 330 of the Laws of 1887, as amended by chapter 485 of the Laws of 1890, said lands having been duly selected by the Armory Board, and approved by the Commissioners of the Sinking Fund, and the title thereto having been acquired by said Mayor, Aldermen and Commonalty as part and parcel of a site for armory purposes in pursuance of the aforesaid acts of said Legislature.

The following is a description of the lands hereinbefore referred to: All those certain lots, pieces or parcels of land, situate, lying and being in said City of New York, and bounded and described as follows, viz.: Beginning at a point on the northerly side of Fourteenth street, distant three hundred feet westerly from the northwesterly corner of Sixth avenue and Fourteenth street, and running thence northerly and parallel with Sixth avenue, one hundred and three feet and three inches; thence westerly and parallel with Fourteenth street, one hundred feet; thence southerly and again parallel with Sixth avenue, one hundred and three feet and three inches to the northerly side of Fourteenth street, and thence easterly along said northerly side of Fourteenth street, one hundred feet to the point or place of beginning.

Dated NEW YORK, July 13, 1892.

WILLIAM H. CLARK,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Education by the Counsel to the Corporation of the City of New York, relative to acquiring title by the Mayor, Aldermen and Commonalty of the City of New York, to certain lands on EDGECOMBE AVENUE, WEST ONE HUNDRED AND FORTIETH AND WEST ONE HUNDRED AND FORTY-FIRST STREETS, in the Twelfth Ward of said city, duly selected and approved by said Board as a site for school purposes, under and in pursuance of the provisions of chapter 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890.

PURSUANT TO THE PROVISIONS OF CHAPTER 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof, in the County Court-house in the City of New York, on the thirteenth day of August, 1892, at the opening of the Court on that day or as soon thereafter as counsel can be heard thereon, for the appointment of Commissioners of Estimate in the above-entitled matter.

The nature and extent of the improvement hereby intended is the acquisition of title by the Mayor, Aldermen and Commonalty of the City of New York to certain lands and premises, with the buildings thereon and the appurtenances thereto belonging, on Edgecombe avenue, West One Hundred and Fortieth and West One Hundred and Forty-first streets, in the Twelfth Ward of the said city, in fee simple absolute, the same to be converted, appropriated and used to and for the purposes specified in said chapter 191 of the Laws of 1888, as amended by said chapter 35 of the Laws of 1890, said property having been duly selected and approved by the Board of Education as a site for school purposes under and in pursuance of the provisions of said chapter 191 of the Laws of 1888, as amended by said chapter 35 of the Laws of 1890, being the following-described lots, pieces or parcels of land, namely: All that certain piece or parcel of land situate, lying and being in the Twelfth Ward of the City of New York, bounded and described as follows:

Beginning at the northeasterly corner of One Hundred and Fortieth street and Edgecombe avenue, and running thence northerly along the easterly side of Edgecombe avenue, one hundred and ninety-nine feet ten inches to the southeasterly corner of Edgecombe avenue and One Hundred and Forty-first street; thence easterly along the southerly side of One Hundred and Forty-first street, one hundred feet; thence southerly, parallel with Edgecombe avenue, ninety-nine feet eleven inches; thence easterly, parallel with One Hundred and Forty-first street, fifty feet; thence southerly, parallel with Edgecombe avenue, ninety-nine feet eleven inches to the northerly side of One Hundred and Fortieth street; and thence westerly along the northerly side of One Hundred and Fortieth street, one hundred and fifty feet to the point or place of beginning.

Dated NEW YORK, July 13, 1892.

WILLIAM H. CLARK,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Education by the Counsel to the Corporation of the City of New York, relative to acquiring title by the Mayor, Aldermen and Commonalty of the City of New York, to certain lands on the northerly side of RIVINGTON STREET, between Lewis and Cannon streets, in the Eleventh Ward of said city, duly selected and approved by said Board as a site for school purposes, under and in pursuance of the provisions of chapter 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890.

PURSUANT TO THE PROVISIONS OF CHAPTER 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof, in the County Court-house in the City of New York, on the 13th day of August, 1892, at the opening of the Court on that day, or as soon thereafter as counsel can be heard thereon, for the appointment of Commissioners of Estimate in the above-entitled matter.

The nature and extent of the improvement hereby intended is the acquisition of title by the Mayor, Aldermen and Commonalty of the City of New York, to certain lands and premises with the buildings thereon, and the appurtenances thereto belonging, on the northerly side of Rivington street, between Lewis and Cannon streets, in the Eleventh Ward of the said city, in fee simple absolute, the same to be converted, appropriated and used to and for the purposes specified in said chapter 191 of the Laws of 1888, as amended by said chapter 35 of the Laws of 1890, said property having been duly selected and approved by the Board of Education as a site for school purposes under and in pursuance of the provisions of said chapter 191 of the Laws of 1888, as amended by said chapter 35 of the Laws of 1890, being the following described lots, pieces or parcels of land, namely: All that certain piece or parcel of land situate, lying and being in the Eleventh Ward of the City of New York, bounded and described as follows:

Beginning at a point on the northerly side of Rivington street, distant one hundred feet westerly from the northwesterly corner of Lewis and Rivington streets, and running thence westerly along the northerly side of Rivington street, fifty feet; thence northerly, parallel with Lewis street, eighty-nine feet; thence easterly, parallel with Rivington street, twenty-three feet; thence northerly, parallel with Lewis street, thirty-six feet; thence easterly, parallel with Rivington street, twenty-seven feet, and thence southerly, parallel with Lewis street, one hundred and twenty-five feet to the point or place of beginning.

Dated NEW YORK, July 13, 1892.

WILLIAM H. CLARK,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Education by the Counsel to the Corporation of the City of New York, relative to acquiring title by the Mayor, Aldermen and Commonalty of the City of New York, to certain lands on the northerly side of HESTER STREET, between Norfolk and Essex streets, in the Tenth Ward of said city, duly selected and approved by said Board as a site for school purposes, under and in pursuance of the provisions of chapter 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890.

PURSUANT TO THE PROVISIONS OF CHAPTER 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court-house, in the City of New York, on the 13th day of August, 1892, at the opening of the Court on that day, or as soon thereafter as counsel can be heard thereon, for the appointment of Commissioners of Estimate in the above entitled matter.

The nature and extent of the improvement hereby intended is the acquisition of title by the Mayor, Aldermen and Commonalty of the City of New York to certain lands and premises, with the buildings thereon and the appurtenances thereto belonging, on the northerly side of Hester street, between Norfolk and Essex streets, in the Tenth Ward of the said city, in fee simple absolute, the same to be converted, appropriated and used to and for the purposes specified in said chapter 191 of the Laws of 1888, as amended by said chapter 35 of the Laws of 1890, said property having been duly selected and approved by the Board of Education as a site for school purposes, under and in pursuance of the provisions of said chapter 191 of the Laws of 1888, as amended by said chapter 35 of the Laws of 1890, being the following described lots, pieces or parcels of land, namely:

All that certain piece or parcel of land situate, lying and being in the Tenth Ward of the City of New York, bounded and described as follows:

Beginning at a point on the northerly side of Hester street, distant fifty feet westerly from the northwesterly corner of Norfolk and Hester streets, and running thence westerly along the northerly side of Hester street, twenty-five feet; thence northerly and parallel with Norfolk street, seventy-five feet seven inches; thence easterly, parallel with Hester street, twenty-five feet, and thence southerly, parallel with Norfolk street, seventy-five feet seven inches to the point or place of beginning.

Dated NEW YORK, July 13, 1892.

WILLIAM H. CLARK,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Education by the Counsel to the Corporation of the City of New York, relative to acquiring title by the Mayor, Aldermen and Commonalty of the City of New York to certain lands on the northerly side of SEVENTY-SEVENTH STREET, between Columbus and Amsterdam avenues, in the Twenty-second Ward of said city, duly selected and approved by said Board as a site for school purposes, under and in pursuance of the provisions of chapter 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890.

PURSUANT TO THE PROVISIONS OF CHAPTER 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890, notice is hereby given that an application will be made to the Supreme Court of the State of New York, at a Special Term of said Court, to be held at Chambers thereof in the County Court house, in the City of New York, on the 13th day of August, 1892, at the opening of the Court on that day or as soon thereafter as counsel can be heard thereon, for the appointment of Commissioners of Estimate in the above entitled matter.

The nature and extent of the improvement hereby intended is the acquisition of title by the Mayor, Aldermen and Commonalty of the City of New York to certain lands and premises, with the buildings thereon and the appurtenances thereto belonging, on the northerly side of Seventy-seventh street, between Columbus and Amsterdam avenues, in the Twenty-second Ward of the said city, in fee simple absolute, the same to be converted, appropriated and used to and for the purposes specified in said chapter 191 of the Laws of 1888, as amended by said chapter 35 of the Laws of 1890, said property having been duly selected and approved by the Board of Education as a site for school purposes under and in pursuance of the provisions of said chapter 191 of the Laws of 1888, as amended by said chapter 35 of the Laws of 1890, being the following described lots, pieces or parcels of land, namely:

All that certain piece or parcel of land situate, lying and being in the Twenty-second Ward of the City of New York, bounded and described as follows:

Beginning at a point on the northerly line of Seventy-seventh street, distant one hundred feet easterly from the northeasterly corner of Amsterdam avenue and Seventy-seventh street, and running thence easterly along the northerly side of Seventy-seventh street, fifty feet; thence northerly, parallel with Amsterdam avenue one hundred and two feet two inches; thence westerly, parallel with Seventy-seventh street, fifty feet, and thence southerly, parallel with Amsterdam avenue, one hundred and two feet two inches to the point or place of beginning.

Dated NEW YORK, July 13, 1892.

WILLIAM H. CLARK,
Counsel to the Corporation,
No. 2 Tryon Row, New York City.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to the lands required for the opening and extension of BETHUNE STREET (although not yet named by proper authority), from Greenwich street to Hudson street, in the Ninth Ward of the City of New York.

NOTICE IS HEREBY GIVEN, PURSUANT TO the provisions of section 980, chapter 410, Laws of 1882, by the undersigned Commissioners of Estimate and Assessment, to all persons interested in these proceedings or in any lands affected thereby, and to any person or persons who may consider themselves aggrieved by our estimate and assessment.

First—That we did deposit with the Commissioner of Public Works, at his office, No. 31 Chambers street, in the City of New York, for and during the space of forty days, an abstract of our estimate of assessment, accompanied by copies of the diagrams prepared by us, which distinctly indicate, by separate numbers, the names of the owners of or the claimants to the respective tracts or parcels to be taken or assessed in these proceedings, and which also specify, in figures, with sufficient accuracy, the dimensions and bounds of each of said tracts or parcels. Whenever we have been unable to ascertain with sufficient certainty the name of any owner of any parcel of said land, we have indicated such parcel upon the diagram embracing it as belonging to unknown owners. We have also published a notice for thirty days in the CITY RECORD, beginning the 15th day of January, 1892, stating our intention to present our report for confirmation to the Supreme Court, at the time and place therein specified, and that all persons interested in such proceeding or in any of the lands affected thereby, having objections thereto, shall file the same in writing with the undersigned Commissioners, within thirty days after the first publication of said notice, and that we would hear such objections within the ten week days next after the expiration of said thirty days, in the manner prescribed by section 984 of chapter 410, Laws of 1882.

Second—That we have assessed for benefit in these proceedings all those lots, pieces or parcels of land, situate, lying and being in the City of New York, which taken together are bounded and described as follows, viz: Beginning at the intersection of the new bulkhead line in the North river with the prolongation westerly of the centre line of the blocks between Bethune and West Twelfth streets; thence easterly along last-mentioned centre line and its westerly prolongation to the centre line of the block between Thirteenth avenue and West street; thence northerly along the centre line of the blocks between Thirteenth avenue and West street to the centre line of the block between West Twelfth and Jane streets; thence easterly along the centre line of the blocks between West Twelfth and Jane streets to the centre line of the block between West and Washington streets; thence northerly along last-mentioned centre line to the centre line of the block between Jane and Horatio streets; thence easterly along last-mentioned centre line to the centre line of the block between Washington and Greenwich streets; thence northerly along last-mentioned centre line to the centre line of the block between Horatio and Gansevoort streets; thence easterly along last-mentioned centre line to the centre line of the block between Hudson and West Fourth streets; thence southerly along last-mentioned centre line to the centre line of the block between Horatio and Jane streets; thence easterly along last-mentioned centre line to the line of the block between West Fourth street and Greenwich avenue; thence southerly along last-mentioned centre line to the centre line of the block between West Twelfth and Bank streets; thence easterly along last-mentioned centre line to the prolongation northerly of the centre line of the blocks between Waverley place and Greenwich avenue; thence southerly along last-mentioned centre line to the centre line of the block between West Eleventh and Perry streets; thence westerly along last-mentioned centre line to the centre line of the

block between Waverley place and West Fourth street; thence southerly along last-mentioned centre line to the centre line of the block between Perry and Charles streets; thence westerly along last-mentioned centre line to the centre line of the block between West Fourth and Bleecker streets; thence southerly along last-mentioned centre line to the centre line of the block between Charles and West Tenth streets; thence westerly along last-mentioned centre line to the centre line of the block between Greenwich and Washington streets; thence northerly along last-mentioned centre line to the centre line of the block between Perry and West Eleventh streets; thence westerly along last-mentioned centre line to the centre line of the block between Washington and West streets; thence northerly along last-mentioned centre line to the centre line of the block between West Eleventh and Bank streets; thence westerly along last-mentioned centre line to the centre line of the block between West street and Thirteenth avenue; thence northerly along last-mentioned centre line to the centre line of the block between Bank and Bethune streets; thence westerly along last-mentioned centre line prolonged westerly to the new bulkhead line in the North river; thence northerly along said new bulkhead line to the place or point of beginning; excepting from said area all the land included within the lines of streets, avenues and roads, or portions thereof, heretofore legally opened.

Third—That our abstract of estimate and assessment, together with the diagrams embracing the respective tracts or parcels of lands to be taken or assessed in these proceedings, may be inspected and examined at our office, Rooms 3 and 4, No. 51 Chambers street, in the City of New York.

Fourth—That we will hear any person or persons who may consider themselves aggrieved by such estimate and assessment in opposition to the same, on the 1st day of August, 1892, at four o'clock in the afternoon of that day, at our said office.

Fifth—That it is our intention to present our report for confirmation to the Supreme Court, at a Special Term thereof, to be held at Chambers thereof, at the County Court-house, in the City of New York, on the 4th day of August, 1892, at the opening of the Court on that day, to which day the motion to confirm the same will be adjourned, and that then and there, or as soon thereafter as counsel can be heard thereon, a motion will be made that the said report be confirmed.

Dated NEW YORK, July 19, 1892.

WILLIAM J. LACEY, Chairman,
EDWARD F. O'DWYER,
JACOB MARKS,
Commissioners.

JOHN P. DUNN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to UNDERCLIFF AVENUE (although not yet named by proper authority), extending from the Twenty-third Ward line to Sedgwick avenue, in the Twenty-fourth Ward of the City of New York.

NOTICE IS HEREBY GIVEN THAT THE bill of costs, charges and expenses incurred by reason of the proceedings in the above-entitled matter, will be presented for taxation to one of the Justices of the Supreme Court, at the Chambers thereof, in the County Court-house, at the City Hall, in the City of New York, on the 2d day of August, 1892, at 10.30 o'clock in the forenoon of that day, or as soon thereafter as counsel can be heard thereon; and that the said bill of costs, charges and expenses has been deposited in the office of the Department of Public Works, there to remain for and during the space of ten days.

Dated NEW YORK, July 20, 1892.

JAMES F. C. BLACKHURST,
WILMOT T. COX,
WILLIAM H. BARKER,
Commissioners.

JOHN P. DUNN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to WELCH STREET (although not yet named by proper authority), extending from the New York and Harlem Railroad to Webster avenue, in the Twenty-fourth Ward of the City of New York.

NOTICE IS HEREBY GIVEN THAT THE undersigned were appointed by an order of the Supreme Court, bearing date the 24th day of November, 1891, Commissioners of Estimate and Assessment for the purpose of making a just and equitable estimate and assessment of the loss, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damage, as the case may be, to the respective owners, lessees, parties and persons, respectively, entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose, by and in consequence of opening a certain street herein designated as Welch street, as shown and delineated on certain maps made by the Commissioners of the Department of Public Parks and filed in the office of the Secretary of State of the State of New York on the fifth day of January, 1877, on the first day of March, 1879, and on January 23, 1888, in the office of the Register of the City and County of New York on the fourth day of January, 1877, on the 28th day of February, 1879, and on the 23d day of January, 1888, and in the office of the Department of Public Parks on the 3d day of January, 1877, on the 21st day of February, 1879, and on January, 23, 1888, and more particularly set forth in the aforesaid order of appointment and the petition of the Board of Street Opening and Improvement filed therewith in the office of the Clerk of the City and County of New York; and a just and equitable estimate and assessment of the value of the benefit and advantage of said street so to be opened or laid out and formed, to the respective owners, lessees, parties and persons, respectively, entitled to or interested in the said respective lands, tenements, hereditaments and premises not required for the purpose of opening, laying out and forming the same, but benefited thereby, and of ascertaining and defining the extent and boundaries of the respective tracts or parcels of land to be taken or to be assessed therefor, and of performing the trusts and duties required of them by chapter 16, title 5, of the act entitled "An act to consolidate into one act and to declare the special and local laws affecting public interests in the City of New York," passed July 1, 1882, and the acts or parts of acts in addition thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of opening the said street, or affected thereby, and having any claim or demand on account thereof, are hereby required to present the same, duly verified, to the undersigned Commissioners of Estimate and Assessment, at their office, No. 51 Chambers street, in the City of New York, Room No. 3, with such affidavits or other proofs as the said owners or claimants may desire, within thirty days after the date of this notice (July 19, 1892).

And we, the said Commissioners, will be in attendance at our said office on the 25th day of August, 1892, at three o'clock in the afternoon of that day to hear the said parties and persons in relation thereto. And at such time and place, and at such further or other time and place as we may appoint, we will hear such owners in relation thereto and examine the proofs of such claimant or claimants, or such additional proofs and allegations as may then be offered by such owner or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, July 19, 1892.

MICHAEL J. LANGAN,
CHARLES F. WILDEY,
JOHN COTTER,
Commissioners.

JOHN P. DUNN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to PELHAM AVENUE (although not yet named by proper authority), westerly to Webster avenue, in the Twenty-fourth Ward of the City of New York.

NOTICE IS HEREBY GIVEN THAT WE, THE undersigned, were appointed by an order of the Supreme Court, bearing date the 24th day of November, 1891, Commissioners of Estimate and Assessment for the purpose of making a just and equitable estimate and assessment of the loss, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damage, as the case may be, to the respective owners, lessees, parties and persons, respectively entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose by and in consequence of opening a certain avenue herein designated as Pelham avenue, as shown and delineated on certain maps made by the Commissioners of the Department of Public Parks, and filed in the office of the Secretary of State of the State of New York on the 5th day of January, 1877, on the 1st day of March, 1879, and on January 27, 1888; in the office of the Register of the City and County of New York on the 4th day of January, 1877, on the 28th day of February, 1879, and on the 23d day of January, 1888, and in the office of the Department of Public Parks on the 3d day of January, 1877, on February 21, 1879, and on January 23, 1888, and more particularly set forth in the aforesaid order of appointment and the petition of the Board of Street Opening and Improvement filed therewith in the office of the Clerk of the City and County of New York; and a just and equitable estimate and assessment of the value of the benefit and advantage of said avenue, so to be opened or laid out and formed, to the respective owners, lessees, parties and persons, respectively entitled to or interested in the said respective lands, tenements, hereditaments and premises not required for the purpose of opening, laying out and forming the same, but benefited thereby, and of ascertaining and defining the extent and boundaries of the respective tracts or parcels of land to be taken or to be assessed therefor, and of performing the trusts and duties required of them by chapter 16, title 5, of the act entitled "An Act to consolidate into one act and to declare the special and local laws affecting public interests in the City of New York," passed July 1, 1882, and the acts or parts of acts in addition thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of opening the said avenue, or affected thereby, and having any claim or demand on account thereof, are hereby required to present the same, duly verified, to the undersigned Commissioners of Estimate and Assessment, at our office, No. 51 Chambers street, in the City of New York, Room No. 3, with such affidavits or other proofs as the said owners or claimants may desire, within thirty days after the date of this notice (July 19, 1892).

And we, the said Commissioners, will be in attendance at our said office on the 25th day of August, 1892, at 3.30 o'clock in the afternoon of that day, to hear the said parties and persons in relation thereto. And at such time and place, and at such further or other time and place as we may appoint, we will hear such owners in relation thereto and examine the proofs of such claimant or claimants, or such additional proofs and allegations as may then be offered by such owner or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, July 19, 1892.

MICHAEL J. LANGAN,
CHARLES F. WILDEY,
JOHN COTTER,
Commissioners.

JOHN P. DUNN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to EAST ONE HUNDRED AND SEVENTY NINTH STREET (although not yet named by proper authority), extending from Tiebout avenue to Third avenue, in the Twenty-fourth Ward of the City of New York.

NOTICE IS HEREBY GIVEN THAT THE undersigned were appointed, by an order of the Supreme Court, bearing date the 17th day of January, 1890, Commissioners of Estimate and Assessment, for the purpose of making a just and equitable estimate and assessment of the loss, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damage, as the case may be, to the respective owners, lessees, parties and persons respectively entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose by and in consequence of opening a certain street herein designated as East One Hundred and Seventy-ninth street, as shown and delineated on certain maps made by the Commissioners of the Department of Public Parks, and filed in the office of the Secretary of State of the State of New York on the 1st day of March, 1879, and on the 31st day of July, 1890, in the office of the Register of the City and County of New York on the 28th day of February, 1879, and the 30th day of July, 1890, and in the office of the Department of Public Parks on the 21st day of February, 1879, and on the 28th day of July, 1890, and more particularly set forth in the aforesaid order of appointment and the petition of the Board of Street Opening and Improvement filed therewith in the office of the Clerk of the City and County of New York; and a just and equitable estimate and assessment of the value of the benefit and advantage of said street, so to be opened or laid out and formed, to the respective owners lessees, parties and persons respectively entitled to or interested in the said respective lands, tenements, hereditaments and premises not required for the purpose of opening, laying out and forming the same, but benefited thereby, and of ascertaining and defining the extent and boundaries of the respective tracts or parcels of land to be taken or to be assessed therefor, and of performing the trusts and duties required of them by chapter 16, title 5, of the act entitled "An Act to consolidate into one act and to declare the special and local laws affecting public interests in the City of New York," passed July 1, 1882, and the acts or parts of acts in addition thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of opening the said street or affected thereby, and having any claim or demand on account thereof, are hereby required to present the same, duly verified, to the undersigned Commissioners of Estimate and Assessment, at their office, No. 51 Chambers street, in the City of New York, Room No. 3, with such affidavits or other proofs as the said owners or claimants may desire, within thirty days after the date of this notice.

And we, the said Commissioners, will be in attendance at our said office on the 15th day of August, 1892, at 3.30 o'clock in the afternoon of that day to hear the said parties and persons in relation thereto. And at such time and place, and at such further or other time and place as we may appoint, we will hear such owners in relation thereto and examine the proofs of such claimant or claimants or such additional proofs and allegations as may then be offered by such owner, or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, July 13, 1892.

THOMAS J. MILLER,
THEODORE M. ROCHE,
Commissioners.

JOHN P. DUNN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to UNDERCLIFF AVENUE (although not yet named by proper authority), extending from the Twenty-third Ward line to Sedgwick avenue, in the Twenty-fourth Ward, etc.

NOTICE IS HEREBY GIVEN, PURSUANT TO the provisions of section 986, chapter 410, Laws of 1882, by the undersigned Commissioners of Estimate and Assessment, and all persons interested in these proceedings or in any lands affected thereby, and to any person or persons who may consider themselves aggrieved by our estimate and assessment.

First—That we did deposit with the Commissioner of Public Works, at his office, No. 31 Chambers street, in the City of New York, for and during the space of forty days, an abstract of our estimate of assessment, accompanied by copies of the diagram prepared by us, which distinctly indicate, by separate numbers, the names of the owners of or the claimants to the respective tracts or parcels to be taken or assessed in these proceedings, and which also specify, in figures, with sufficient accuracy, the dimensions and bounds of each of said tracts or parcels. Whenever we have been unable to ascertain with sufficient certainty the name of any owner of any parcel of said land, we have indicated such parcel upon the diagram embracing it as belonging to unknown owners. We have also published a notice for thirty days in the CITY RECORD, beginning the 19th day of February, 1892, stating our intention to present our report for confirmation to the Supreme Court at the time and place therein specified, and that all persons interested in such proceeding or in any of the lands affected thereby having objections thereto shall file the same, in writing, with the undersigned Commissioners within thirty days after the first publication of said notice, and that we would hear such objections within the ten week days next after the expiration of said thirty days, in the manner prescribed by section 984 of chapter 410, Laws of 1882.

Second—That we have assessed for benefit in these proceedings on the several lots, pieces or parcels of land situate, lying and being in the City of New York which, taken together, are bounded and described as follows: Northerly by the southerly side of Sedgwick avenue, and by a line drawn at a right angle to the southerly side of Sedgwick avenue; from the intersection of said southerly line of Sedgwick avenue with the easterly line of Undercliff avenue to the centre of the block between Sedgwick avenue and Andrews avenue; easterly, by the centre line of the blocks between Andrews avenue, Aqueduct avenue and Undercliff avenue; southerly, by the boundary line between the Twenty-third and Twenty-fourth Wards; westerly, by Sedgwick avenue and the centre line of the blocks between Sedgwick avenue and Undercliff avenue; excepting from said area all the streets, avenues and roads, or portions thereof, heretofore legally opened, and all the unimproved land included within the lines of streets, avenues, roads, public squares and places shown and laid out upon any map or maps filed by the Commissioners of the Department of Public Parks, pursuant to the provisions of chapter 604 of the Laws of 1874, and the laws amendatory thereof, or of chapter 410 of the Laws of 1882.

Third—That our abstract of estimate and assessment, together with the diagrams embracing the respective tracts or parcels of lands to be taken or assessed in these proceedings, may be inspected and examined at our office, Rooms 3 and 4, No. 51 Chambers street, in the City of New York.

Fourth—That we will hear any person or persons who may consider themselves aggrieved by such estimate and assessment in opposition to the same on the 27th day of July, 1892, at one o'clock in the afternoon of that day, at our said office.

Fifth—That it is our intention to present our report for confirmation to the Supreme Court at a Special Term thereof, to be held at Chambers thereof, at the County Court-house in the City of New York, on the 2d day of August, 1892, at the opening of the Court on that day, to which day the motion to confirm the same will be adjourned, and that then and there or as soon thereafter as counsel can be heard thereon a motion will be made that the said report be confirmed.

Dated NEW YORK, July 13, 1892.

JAMES F. C. BLACKHURST,
WILMOT T. COX,
WILLIAM H. BARKER,
Commissioners.

JOHN P. DUNN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to BOSTON AVENUE (although not yet named by proper authority), extending from Sedgwick avenue to Bailey avenue, in the Twenty-fourth Ward.

NOTICE IS HEREBY GIVEN THAT THE undersigned were appointed, by an order of the Supreme Court bearing date the 23d day of October, 1890, Commissioners of Estimate and Assessment for the purpose of making a just and equitable estimate and assessment of the loss, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damages, as the case may be, to the respective owners, lessees, parties and persons respectively entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose, by and in consequence of opening a certain avenue herein designated as Boston avenue, as shown and delineated on certain maps made by the Commissioners of the Department of Public Parks and filed in the office of the Secretary of State of the State of New York, on the 4th day of February, 1890, and in the office of the Register of the City and County of New York on the 3d day of February, 1890, and in the office of the Department of Public Parks on the 3d day of February, 1890, and more particularly set forth in the aforesaid order of appointment and the petition of the Board of Street Opening and Improvement, filed therewith in the office of the Clerk of the City and County of New York; and a just and equitable estimate and assessment of the value of the benefit and advantage of said avenue, so to be opened or laid out and formed, to the respective owners, lessees, parties and persons respectively entitled to or interested in the said respective lands, tenements, hereditaments and premises not required for the purpose of opening, laying out and forming the same, but benefited thereby, and of ascertaining and defining the extent and boundaries of the respective tracts or parcels of land to be taken or to be assessed therefor, and of performing the trusts and duties required of them by chapter 16, title 5, of the act entitled "An Act to consolidate into one act and to declare the special and local laws affecting public interests in the City of New York," passed July 1, 1882, and the acts or parts of acts in addition thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of opening the said avenue, or affected thereby, and having any claim or demand on account thereof, are hereby required to present the same, duly verified, to the undersigned Commissioners of Estimate and Assessment, at their office, No. 51 Chambers street, in the City of New York, Room No. 3, with such affidavits or other proof as the said owners or claimants may desire, within thirty days after the date of this notice.

And we, the said Commissioners, will be in attendance at our said office on the 16th day of August, 1892, at 11 o'clock in the forenoon of that day, to hear the said parties and persons in relation thereto. And at such time and place and at such further or other time and place as we may appoint, will hear such owners in relation thereto and examine the proofs of such claimant or claimants, or such additional proofs and allegations as may then be offered by such owner, or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, July 13, 1892.

JOHN CONNELLY,
SAMUEL W. MILBANK,
Commissioners.

MATTHEW P. RYAN, Clerk.

In the matter of the application of the Board of Education by the Counsel to the Corporation of the City of New York, relative to acquiring title by the Mayor, Aldermen and Commonalty of the City of New York, to certain lands on the northerly side of One Hundred and Fourth street, between Amsterdam (formerly Tenth) avenue and Columbus (formerly Ninth) avenue, in the Twelfth Ward of said city, duly selected and approved by said Board as a site for school purposes under and in pursuance of the provisions of chapter 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890.

WE, THE UNDERSIGNED COMMISSIONERS of Estimate in the above-entitled matter, appointed pursuant to the provisions of chapter 191 of the Laws of 1888, as amended by chapter 35 of the Laws of 1890, hereby give notice to the owner or owners, lessee or lessees, parties and persons, respectively, entitled to or interested in the lands, tenements, hereditaments and premises, title to which is sought to be acquired in this proceeding, and to all others whom it may concern, to wit:

First—That a majority of said commissioners have completed their estimate of the loss and damage to the respective owners, lessees, parties and persons, interested in the lands or premises affected by this proceeding, or having any interest therein, and have filed a true report or transcript of such estimate in the office of the Board of Education for the inspection of whomsoever it may concern.

Second—That all parties or persons whose rights may be affected by the said estimate, and who may object to the same or any part thereof, may, within ten days after the first publication of this notice, file their objections to such estimate in writing with us at our office, Room No. 904, on the ninth floor of No. 44 Pine street, in said city, as provided by section 4 of chapter 191 of the Laws of 1888, as amended by chapter 35, of the Laws of 1890, and that we, the said Commissioners, will hear parties so objecting at our said office on the 25th day of July, 1892, at 10.30 o'clock A. M., and upon such subsequent days as may be found necessary.

Third—That our report herein will be presented to the Supreme Court of the State of New York, at a Special Term thereof, to be held at Chambers in the County Court-house, in the City of New York, on the 29th day of July, 1892, at the opening of the Court on that day, and that then and there, or as soon thereafter as counsel can be heard thereon, a motion will be made that the said report be confirmed.

Dated NEW YORK, July 11, 1892.

WILLIAM T. GRAY,
SAMUEL W. MILBANK,
L. K. UNGRICH,
Commissioners.

MALCOM KERR, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title (wherever the same has not been heretofore acquired) to FOREST AVENUE, extending from the southerly side of Home street to the northerly side of East One Hundred and Sixty-eighth street, in the Twenty-third Ward of the City of New York, as the same has been heretofore laid out and designated as a fist-class street or road by the Department of Public Parks.

WE, THE UNDERSIGNED COMMISSIONERS of Estimate and Assessment in the above-entitled matter, hereby give notice to all persons interested in this proceeding, and to the owner or owners, occupant or occupants, of all houses and lots and improved and unimproved lands affected thereby, and to all others whom it may concern, to wit:

First—That we have completed our supplemental or amended estimate and assessment, and that all persons interested in this proceeding, or in any of the lands affected thereby, and having objections thereto, do present their said objections in writing, duly verified, to us at our office, No. 51 Chambers street (Rooms 3 and 4), in said city, on or before the thirtieth day of July, 1892, and that we, the said Commissioners, will hear parties so objecting within ten week days next after the said thirtieth day of July, 1892, and for that purpose will be in attendance at our said office on each of said ten days at 3 o'clock P. M.

Second—That the abstract of our said estimate and assessment, together with our damage and benefit maps, and also all the affidavits, estimates and other documents used by us in making our report, have been deposited with the Commissioner of Public Works of the City of New York, at his office, No. 31 Chambers street, in the said city, there to remain until the 31st day of July, 1892.

Third—That the limits of our assessment for benefit include all those lots, pieces or parcels of land, situate, lying and being in the City of New York, which, taken together, are bounded and described as follows, viz.: Beginning at the point of intersection of the easterly side of Boston road and the centre line of the block between East One Hundred and Sixty-eighth and East One Hundred and Sixty-ninth streets; running thence easterly along the centre line of the blocks between East One Hundred and Sixty-eighth and East One Hundred and Sixty-ninth streets, to the centre line of the blocks between Tinton and Union avenues; thence southerly along said centre line of the blocks between Tinton and Union avenues, to the centre line of the blocks between Home and George streets; thence westerly along the centre line of the blocks between Home and George streets to the centre line of the blocks between Forest and Tinton avenues; thence southerly along the centre line of the blocks between Forest and Tinton avenues to the centre line of the blocks between George and East One Hundred and Sixty-fifth streets; thence westerly along the centre line of the blocks between George and East One Hundred and Sixty-fifth streets to the centre line of the blocks between Forest and Jackson avenues; thence northerly along the centre line of the blocks between Forest and Jackson avenues to the centre line of the block between George and Home streets; thence westerly along the last-mentioned centre line to the centre line of Jackson avenue; thence northerly along the centre line of Jackson avenue to the easterly side of Boston road; thence northeasterly along the easterly side of Boston road to the point or place of beginning, excepting from said area all the streets, avenues and roads, or portions thereof, heretofore legally opened, and all the unimproved land included within the lines of streets, avenues, roads, public squares and places shown and laid out upon any map or maps filed by the Commissioners of the Department of Public Parks, pursuant to the provisions of chapter 604 of the Laws of 1874, and the laws amendatory thereof, or of chapter 410 of the Laws of 1882, as such area is shown upon our benefit map deposited as aforesaid.

Fourth—That our supplemental or amended report herein will be presented to the Supreme Court of the State of New York, at a Special Term thereof, to be held at the Chambers thereof, in the County Court house, in the City of New York, on the seventeenth day of August, 1892, at the opening of the Court on that day, and that then and there, or as soon thereafter as counsel can be heard thereon, a motion will be made that the said report be confirmed.

Dated NEW YORK, July 5, 1892.

JAMES MITCHELL, Chairman,
JOHN H. ROGAN,
LEICESTER HOLME,
Commissioners.

JOHN P. DUNN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to FORT INDEPENDENCE STREET (although not yet named by proper authority), extending from its junction with Boston avenue to Broadway, in the Twenty-fourth Ward of the City of New York.

NOTICE IS HEREBY GIVEN THAT THE undersigned were appointed by an order of the Supreme Court, bearing date the 23d day of December, 1890, Commissioners of Estimate and Assessment, for the purpose of making a just and equitable estimate and assessment of the loss, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damage, as the case may be, to the respective owners, lessees, parties and persons respectively entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose by and in consequence of opening a certain street, herein designated as Fort Independence street, as shown and delineated on certain maps made by the Commissioners of the Department of Public Parks and filed in the office of the Secretary of State of the State of New York on the 4th day of February, 1890, in the office of the Register of the City and County of New York on the 18th day of January, 1878, and on the 3d day of February, 1890, and in the office of the Department of Public Parks on the 17th day of January, 1878, and on the 3d day of February, 1890, and more particularly set forth in the aforesaid order of appointment and the petition of the Board of Street Opening and Improvement filed therewith in the office of the Clerk of the City and County of New York; and a just and equitable estimate and assessment of the value of the benefit and advantage of said street so to be opened or laid out and formed, to the respective owners, lessees, parties and persons respectively entitled to or interested in the said respective lands, tenements, hereditaments and premises not required for the purpose of opening, laying out and forming the same, but benefited thereby, and of ascertaining and defining the extent and boundaries of the respective tracts or parcels of land to be taken or to be assessed therefor, and of performing the trusts and duties required of them by chapter 16, title 5, of the act entitled "An act to consolidate into one act and to declare the special and local laws affecting public interests in the City of New York," passed July 1, 1882, and the acts or parts of acts in addition thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of opening the said street or affected thereby, and having any claim or demand on account thereof, are hereby required to present the same duly verified to the undersigned Commissioners of Estimate and Assessment, at their office, No. 51 Chambers street, in the City of New York, Room No. 3, with such affidavits or other proofs as the said owners or claimants may desire, within thirty days after the date of this notice.

And we, the said Commissioners, will be in attendance at our said office on the 10th day of August, 1892, at 2 o'clock in the afternoon of that day, to hear the said parties and persons in relation thereto. And at such time and place, and at such further or other time and place as we may appoint, we will hear such owners in relation thereto and examine the proofs of such claimant or claimants, or such additional proofs and allegations as may then be offered by such owner, or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, June 30, 1892.

LEICESTER HOLME,
HENRY STEINERT,
JAMES F. C. BLACKHURST,
Commissioners.

MATTHEW P. RYAN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to EAST ONE HUNDRED AND SEVENTY-EIGHTH STREET (although not yet named by proper authority), from Burnside avenue to Lafontaine avenue, in the Twenty-fourth Ward of the City of New York.

NOTICE IS HEREBY GIVEN THAT THE undersigned were appointed by an order of the Supreme Court, bearing date the 23d day of December, 1890, Commissioners of Estimate and Assessment for the purpose of making a just and equitable estimate and assessment of the loss, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damage, as the case may be, to the respective owners, lessees, parties and persons respectively entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose by and in consequence of opening a certain street herein designated as East One Hundred and Seventy-eighth street, as shown and delineated on certain maps made by the Commissioners of the Department of Public Parks and filed in the office of the Secretary of State, on the 6th day of August, 1888, on the 1st day of June, 1889, and on the 13th day of June, 1890; in the office of the Register of the City and County of New York, on the 16th day of August, 1888, on the 1st day of June, 1889, and on the 12th day of June, 1890, and in the office of the Department of Public Parks on the 14th day of August, 1888, on the 31st day of May, 1889, and on the 11th day of June, 1890, and more particularly set forth in the aforesaid order of appointment and the petition of the Board of Street Opening and Improvement filed therewith in the office of the Clerk of the City and County of New York, and a just and equitable estimate and assessment of the value of the benefit and advantage of said street so to be opened or laid out and formed to the respective owners, lessees, parties and persons respectively entitled to or interested in the said respective lands, tenements, hereditaments and premises not required for the purpose of opening, laying out and forming the same, but benefited thereby, and of ascertaining and defining the extent and boundaries of the respective tracts or parcels of land to be taken or to be assessed therefor, and of performing the trusts and duties required of them by chapter 16, title 5, of the act entitled "An Act to consolidate into one act and to declare the special and local laws affecting public interests in the City of New York," passed July 1, 1882, and the acts or parts of acts in addition thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of opening the said street, or affected thereby and having any claim or demand on account thereof, are hereby required to present the same duly verified to the undersigned Commissioners of Estimate and Assessment, at their office, No. 51 Chambers street, in the City of New York, Room No. 3, with such affidavits or other proofs as the said owners or claimants may desire, within thirty days after the date of this notice.

And we, the said Commissioners, will be in attendance at our said office on the 28th day of July, 1892, at 11 o'clock in the forenoon of that day, to hear the said parties and persons in relation thereto. And at such time and place, and at such further or other time and place as we may appoint, we will hear such owners in relation thereto and examine the proofs of such claimant or claimants or such additional proofs and allegations as may then be offered by such owner, or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, June 21, 1892.

MICHAEL J. MULQUEEN,
EMANUEL M. FRIEND,
HENRY G. CASSIDY,
Commissioners.

MATTHEW P. RYAN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to INTERVALE AVENUE (although not yet named by proper authority), from the Southern Boulevard to Wilkins place, in the Twenty-third Ward of the City of New York.

NOTICE IS HEREBY GIVEN THAT THE undersigned were appointed by an order of the Supreme Court, bearing date the 23d day of September 1891, Commissioners of Estimate and Assessment for the purpose of making a just and equitable estimate and assessment of the loss, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damage, as the case may be, to the respective owners, lessees, parties and persons respectively entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose by and in consequence of opening a certain avenue herein designated as Intervale avenue, as shown and delineated on certain maps made by the Commissioners of the Department of Public Parks and filed in the office of the Secretary of State of the State of New York, on the 5th day of June, 1879, and on the 4th day of June, 1890; in the office of the Register of the City and County of New York on the 8th day of August, 1877, on the 4th day of June, 1879, and on the 12th day of June, 1890; and in the office of the Department of Public Parks on the 2d day of August, 1878, on the 4th day of June, 1879, and on the 3d day of June, 1890, and more particularly set forth in the aforesaid order of appointment and the petition of the Board of Street Opening and Improvement filed therewith in the office of the Clerk of the City and County of New York, and a just and equitable estimate and assessment of the value of the benefit and advantage of said avenue so to be opened or laid out and formed, to the respective owners, lessees, parties and persons respectively entitled to or interested in the said respective lands, tenements, hereditaments and premises not required for the purpose of opening, laying out and forming the same, but benefited thereby, and of ascertaining and defining the extent and boundaries of the respective tracts or parcels of land to be taken or to be assessed therefor, and of performing the trusts and duties required of them by chapter 16, title 5, of the act entitled "An act to consolidate into one act and to declare the special and local laws affecting public interests in the City of New York," passed July 1, 1882, and the acts or parts of acts in addition thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of opening the said avenue, or affected thereby and having any claim or demand on account thereof, are hereby required to present the same duly verified to the undersigned Commissioners of Estimate and Assessment at their office, No. 51 Chambers street, in the City of New York, Room No. 3, with such affidavits or other proofs as the said owners or claimants may desire, within thirty days after the date of this notice.

And we, the said Commissioners, will be in attendance at our said office on the 27th day of July, 1892, at 12 o'clock, noon, of that day, to hear the said parties and persons in relation thereto. And at such time and place, and at such further or other time and place as we may appoint, we will hear such owners in relation thereto and examine the proofs of such claimant or claimants, or such additional proofs and allegations as may then be offered by such owner, or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, June 21, 1892.

THOMAS P. WICKES,
WILLIAM H. BARKER,
DANIEL SHERRY,
Commissioners.

JOHN P. DUNN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to EAST ONE HUNDRED AND SIXTY-FOURTH STREET (although not yet named by proper authority), extending from East One Hundred and Sixty-fifth street to Railroad avenue, West, and from Brook avenue to Trinity avenue, in the Twenty-third Ward of the City of New York, as the same has been heretofore laid out and designated as a first class street or road by the Department of Public Parks.

NOTICE IS HEREBY GIVEN THAT WE, THE undersigned, have been appointed, by an order of the Supreme Court duly made and entered in the above entitled matter, Commissioners of Estimate and Assessment for the purpose of making a just and equitable estimate and assessment of the loss and damage, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damage, as the case may be, to the respective owners, lessees, parties and persons, respectively, entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose, by and in consequence of the opening of that certain street, road or avenue, known and designated as East One Hundred and Sixty-fourth street (although not yet named by proper authority), extending from East One Hundred and Sixty-fifth street to Railroad avenue, West, and from Brook avenue to Trinity avenue, and the acquisition of title by the City to the land included within the lines of such street or avenue, as the same was laid out by the Commissioners of the Department of Public Parks and shown and delineated on certain maps made by the said Commissioners of the Department of Public Parks, under authority of chapters 329 and 604 of the Laws of 1874, chapter 436 of the Laws of 1876, chapter 410 of the Laws of 1882 and chapter 577 of the Laws of 1887, and filed in the office of the Secretary of State of the State of New York on the 4th day of August, 1888, in the office of the Register of the City and County of New York on the 3d day of August, 1888, and in the office of the Department of Public Parks on the 31st day of July, 1888, and more particularly set forth and described in the petition of the Commissioners of the Department of Public Parks and in the order appointing us Commissioners, which said petition and order are now on file in the office of the Clerk of the City and County of New York; and for the purpose also of making a just and equitable estimate and assessment of the value of the benefit and advantage of such street or avenue, so to be opened, to the respective owners, lessees, parties and persons, respectively, entitled unto or interested in the respective lands, tenements, hereditaments and premises not required for the purpose of opening said street or avenue, but deemed by us to be benefited thereby, and for the purpose of executing the trusts and duties imposed upon us as such Commissioners by title 5 of chapter 16 of chapter 410 of the Laws of 1882, entitled "An Act to consolidate into one act and to declare the special and local laws affecting public interests in the City of New York," passed July 1, 1882, and by such acts or parts of acts as relate to or prescribe our duties as such Commissioners, passed subsequent thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of the opening of the said street or avenue, or affected thereby and having any claim or demand on account thereof, are hereby required to present the same to us, duly verified, with such affidavits or other proof as the owners or claimants may desire, at our office, No. 200 Broadway (fifth floor, Room 25), in the City of New York, within thirty days after the date of this notice (June 23, 1892). And we, the said Commissioners, will be in attendance at our said office on the 29th day of July, 1892, at 12 o'clock noon on that day, to hear the said parties and persons in relation thereto. And at such time and place, or at such further or other time and place as we may appoint, we will hear such owners and examine the proofs of such claimant or claimants, or such additional proofs and allegations as may be then offered by such owner or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, June 23, 1892.

ADOLPH L. SANGER,
LAMONT McLOUGHLIN,
CHARLES W. DAYTON,
Commissioners.

CARROLL BERRY, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever same has not been heretofore acquired, to ONE HUNDRED AND SIXTEENTH STREET, from the Boulevard to Riverside avenue, in the Twelfth Ward.

NOTICE IS HEREBY GIVEN THAT THE undersigned were appointed by an order of the Supreme Court, bearing date the 17th day of June, 1890, Commissioners of Estimate and Assessment for the purpose of making a just and equitable estimate and assessment of the loss, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damages, as the case may be, to the repective owners, lessees, parties and persons respectively entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose by and in consequence of opening a certain street herein designated as One Hundred and Sixteenth street, as shown and delineated on a certain map of the City of New York, made by the Commissioner of Streets and Roads of the City of New York, and filed in the office of the Street Commissioner of the City of New York April 1, 1811, and as shown and delineated on a certain map made by the Board of Commissioners of the Central Park, and filed in the office of the Street Commissioner of the City of New York on March 7, 1868, and more particularly set forth in the aforesaid order of appointment and the petition of the Board of Street Opening and Improvement filed therewith in the office of the Clerk of the City and County of New York, and a just and equitable estimate and assessment of the value of the benefit and advantage of said street so to be opened or laid out and formed, to the respective owners, lessees, parties and persons respectively entitled to or interested in the said respective lands, tenements, hereditaments and premises not required for the purpose of opening, laying out and forming the same, but benefited thereby, and of ascertaining and defining the extent and boundaries of the respective tracts or parcels of land to be taken or to be assessed therefor, and of performing the trusts and duties required of them by chapter 16, title 5, of the act entitled "An Act to consolidate into one act and to declare the special and local laws affecting public interests in the City of New York," passed July 1, 1882, and the acts or parts of acts in addition thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of opening the said street, or affected thereby, and having any claim or demand on account thereof, are hereby required to present the same, duly verified, to the undersigned Commissioners of Estimate and Assessment, at their office, No. 51 Chambers street, in the City of New York, Room No. 3, with such affidavits or other proofs as the said owners or claimants may desire, within thirty days after the date of this notice.

And we, the said Commissioners, will be in attendance at our said office on the 27th day of July, 1892, at 11 o'clock in the forenoon of that day, to hear the said parties and persons in relation thereto. And at such time and place, and at such further or other time and place as we may appoint, we will hear such owners in relation thereto and examine the proofs of such claimant or claimants or such additional proofs and allegations as may then be offered by such owner, or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, June 20, 1892.

ROLLIN M. MORGAN,
JOHN H. ROGAN,
JAMES F. C. BLACKHURST,
Commissioners.

MATTHEW P. RYAN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to ONE HUNDRED AND NINETIETH STREET (although not yet named by proper authority), between Audubon avenue and Eleventh avenue, in the Twelfth Ward of the City of New York.

NOTICE IS HEREBY GIVEN THAT THE UNdersigned were appointed by an order of the Supreme Court, bearing date the 2d day of May, 1891, Commissioners of Estimate and Assessment, for the purpose of making a just and equitable estimate and assessment of the loss, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damage, as the case may be, to the respective owners, lessees, parties and persons respectively entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose by and in consequence of opening a certain street herein designated as One Hundred and Ninetieth street, as shown and delineated on a certain map made by the Board of Commissioners of the Central Park, by and under authority of chapter 697 of the Laws of 1867, and filed in the office of the Register of the City and County of New York on the 17th day of September, 1869, and more particularly set forth in the aforesaid order of appointment and the petition of the Board of Street Opening and Improvement filed therewith in the office of the Clerk of the City and County of New York; and a just and equitable estimate and assessment of the value of the benefit and advantage of said street, so to be opened or laid out and formed, to the respective owners, lessees, parties and persons respectively entitled to or interested in the said respective lands, tenements, hereditaments and premises not required for the purpose of opening, laying out and forming the same, but benefited thereby, and of ascertaining and defining the extent and boundaries of the respective tracts or parcels of land to be taken or to be assessed therefor, and of performing the trusts and duties required of them by chapter 16, title 5, of the act entitled "An act to consolidate into one act and to declare the special and local laws affecting public interests in the City of New York," passed July 1, 1882, and the acts or parts of acts in addition thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of opening the said street, or affected thereby, and having any claim or demand on account thereof, are hereby required to present the same duly verified to the undersigned Commissioners of Estimate and Assessment, at their office, No. 51 Chambers street, in the City of New York, Room No. 3, with such affidavits or other proofs as the said owners or claimants may desire, within thirty days after the date of this notice.

And we, the said Commissioners, will be in attendance at our said office on the 25th day of July, 1892, at two o'clock in the afternoon of that day, to hear the said parties and persons in relation thereto, and at such time and place, and at such further or other time and place as we may appoint, we will hear such owners in relation thereto and examine the proofs of such claimant or claimants, or such additional proofs and allegations as may then be offered by such owner, or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, June 15, 1892.

EZEKIEL THOMSON, JR.,
JACOB BLUMENTHAL,
JOSEPH I. McKEON,
Commissioners.

MATTHEW P. RYAN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to ONE HUNDRED AND SIXTY-SIXTH STREET (although not yet named by proper authority), between Tenth avenue and Edgecombe avenue, in the Twelfth Ward of the City of New York.

NOTICE IS HEREBY GIVEN THAT THE undersigned were appointed by an order of the Supreme Court, bearing date the 2d day of May, 1891, Commissioners of Estimate and Assessment for the purpose of making a just and equitable estimate and assessment of the loss, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damage, as the case may be, to the respective owners, lessees, parties and persons respectively entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose by and in consequence of opening a certain street herein designated as One Hundred and Sixty-sixth street, as shown and delineated on a certain map made by the Board of Commissioners of the Central Park, by and under authority of chapter 697 of the Laws of 1867, and filed in the office of the Register of the City and County of New York, on the 17th day of September, 1869, and more particularly set forth in the aforesaid order of appointment and the petition of the Board of Street Opening and Improvement filed therewith in the office of the Clerk of the City and County of New York; and a just and equitable estimate and assessment of the value of the benefit and advantage of said street, so to be opened or laid out and formed, to the respective owners, lessees, parties and persons respectively entitled to or interested in the said respective lands, tenements, hereditaments and premises not required for the purpose of opening laying out and forming the same, but benefited thereby, and of ascertaining and defining the extent and boundaries of the respective tracts or parcels of land to be taken or to be assessed therefor, and of performing the trusts and duties required of them by chapter 16, title 5, of the act entitled "An Act to consolidate into one act, and to declare the special and local laws affecting public interests in the City of New York," passed July 1, 1882, and the acts or parts of acts in addition thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of opening the said street, or affected thereby, and having any claim or demand on account thereof, are hereby required to present the same duly verified to the undersigned Commissioners of Estimate and Assessment, at their office, No. 51 Chambers street, in the City of New York, Room No. 3, with such affidavits or other proofs as the said owners or claimants may desire, within thirty days after the date of this notice.

And we, the said Commissioners, will be in attendance at our said office on the 25th day of July, 1892, at 3 o'clock in the afternoon of that day, to hear the said parties and persons in relation thereto. And at such time and place, and at such further or other time and place as we may appoint, we will hear such owners in relation thereto and examine the proofs of such claimant or claimants, or such additional proofs and allegations, as may then be offered by such owner, or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, June 15, 1892.

MAX MOSES,
BRYAN L. KENNELLY,
EDWARD PURCELL,
Commissioners.

MATTHEW P. RYAN, Clerk.

In the matter of the application of the Board of Street Opening and Improvement of the City of New York, for and on behalf of the Mayor, Aldermen and Commonalty of the City of New York, relative to acquiring title, wherever the same has not been heretofore acquired, to ONE HUNDRED AND EIGHTY-SEVENTH STREET (although not yet named by proper authority), from Tenth avenue to Kingsbridge road, in the Twelfth Ward of the City of New York.

NOTICE IS HEREBY GIVEN THAT THE undersigned were appointed by an order of the Supreme Court, bearing date the 23d day of September, 1891, Commissioners of Estimate and Assessment, for the purpose of making a just and equitable estimate and assessment of the loss, if any, over and above the benefit and advantage, or of the benefit and advantage, if any, over and above the loss and damage, as the case may be, to the respective owners, lessees, parties and persons respectively entitled unto or interested in the lands, tenements, hereditaments and premises required for the purpose by and in consequence of opening a certain street herein designated as One Hundred and Eighty-seventh street, as shown and delineated on a certain map made by the Board of Commissioners of the Central Park, and duly filed in the office of the Register of the City and County of New York on the 17th day of September, 1869, and more particularly set forth in the aforesaid order of appointment and the petition of the Board of Street Opening and Improvement filed therewith in the office of the Clerk of the City and County of New York; and a just and equitable estimate and assessment of the value of the benefit and advantage of said street, so to be opened or laid out and formed, to the respective owners, lessees, parties and persons respectively entitled to or interested in the said respective lands, tenements, hereditaments and premises not required for the purpose of opening, laying out and forming the same, but benefited thereby, and of ascertaining and defining the extent and boundaries of the respective tracts or parcels of land to be taken or to be assessed therefor, and of performing the trusts and duties required of them by chapter 16, title 5, of the act entitled "An act to consolidate into one act and to declare the special and local laws affecting public interests in the City of New York," passed July 1, 1882, and the acts or parts of acts in addition thereto or amendatory thereof.

All parties and persons interested in the real estate taken or to be taken for the purpose of opening the said street, or affected thereby, and having any claim or demand on account thereof, are hereby required to present the same duly verified to the undersigned Commissioners of Estimate and Assessment, at their office, No. 51 Chambers street, in the City of New York, Room No. 3, with such affidavits or other proofs as the said owners or claimants may desire, within thirty days after the date of this notice.

And we, the said Commissioners, will be in attendance at our said office on the 25th day of July, 1892, at two o'clock in the afternoon of that day, to hear the said parties and persons in relation thereto, and at such time and place, and at such further or other time and place as we may appoint, we will hear such owners in relation thereto and examine the proofs of such claimant or claimants or such additional proofs and allegations as may then be offered by such owner, or on behalf of the Mayor, Aldermen and Commonalty of the City of New York.

Dated NEW YORK, June 15, 1892.

MICHAEL J. MULQUEEN,
DAVID K. SCHUSTER,
HERMAN BOLTE,
Commissioners.

MATTHEW P. RYAN, Clerk.

THE CITY RECORD.

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W. J. K. KENNY,
Supervisor