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MILK-SANITATION RATINGS OF CITIES

Cities for Which Milk-Sanitation Ratings of 90 Percent or More Were Reported by State Milk-Sanitation Authorities During the Months of July, August, and September 1935

The last complete revision of the list of American municipalities for which milk-sanitation ratings of 90 percent or more were reported by their respective State milk-sanitation authorities was published in the Public Health Reports for July 26, 1935 (Reprint No. 1694). A supplementary list is presented herewith showing the additional cities for which ratings of 90 percent or more were reported during the months of July, August, and September 1935.

The rules governing inclusion in these lists and the significance of the milk-sanitation ratings made in accordance with the Public Health Service rating methods were published in the Public Health Reports for July 26, 1935.

Cities included in this and the previous list are advised to bring their milk-sanitation status to the level required by the latest edition of the Public Health Service Milk Ordinance and Code. Cities which are not now on the list should improve their milk supplies as much as possible and then request the State milk-control authority to determine their ratings.

State milk-control authorities are urged to equip themselves to make milk-sanitation ratings of their cities as soon as possible, in fairness to their cities. States already equipped for this work should not permit ratings of their cities to lapse, as no rating more than 2 years old will be included in the complete semiannual revision of the list to be published next January.

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Cities having ratings of 90 percent or more according to reports received during July, August, and September 1935

City	Percentage of milk pasteurized	Date of rating	City	Percentage of milk pasteurized	Date of rating
ARIZONA			NORTH CAROLINA		
Flagstaff	32	February 1935.	Kinston	17	Sept. 17, 1935.
Tucson	85	June 21, 1935.	Tarboro	100	Apr. 18, 1935.
Yuma	39	June 14, 1935.			
MISSISSIPPI			TEXAS		
Greenville	26	Aug. 29, 1935.	Big Spring	27	Aug. 5 1935.
Pascagoula	0	Sept. 5, 1935.	Gainesville	46	Sept. 6, 1935.
Picayune	0	June 5, 1935.	Victoria	0	February 1935.
Vicksburg	41	June 20, 1935.	Waco	31	Sept. 20, 1935.
			Yoakum	0	March 1935.
MISSOURI					
Columbia	39	June 7, 1935.			
St. Joseph	31	Aug. 9, 1935.			
Springfield	39	Aug. 24, 1935.			

PROVISIONAL SUMMARY OF MORTALITY STATISTICS FOR THE UNITED STATES, 1932, 1933, AND 1934

According to figures compiled by the Bureau of the Census there were 1,396,903 deaths from all causes in the United States in 1934, representing a mortality rate of 11 per 1,000 estimated population—an increase over 1933, when the rate was 10.7. The 1933 death rate was the lowest ever recorded since the annual collection of mortality statistics was begun in 1900.

The accompanying table gives the number of deaths and the death rates in each year from 1932 to 1934, inclusive, for each cause according to the titles of the International List of Causes of Death.

Provisional summary of mortality statistics for the United States for the years 1932, 1933, and 1934

Cause of death	Number of deaths			Rate per 100,000 estimated population		
	1934	1933	1932*	1934	1933	1932*
Total deaths (all causes exclusive of stillbirths)	1,396,903	1,342,106	1,308,529	1,104.9	1,067.8	1,089.3
I. Infectious and parasitic diseases	*148,124*	*155,821*	*156,979*	*117.2*	*124.0*	*130.7*
Typhoid fever	4,162	4,389	4,363	3.3	3.5	3.6
Paratyphoid fever	75	84	78	.1	.1	.1
Typhus fever	86	81	36	.1	.1	(1)
Relapsing fever	1			(1)		
Undulant fever	65	72	62	.1	.1	.1
Smallpox	24	39	38	(1)	(1)	(1)
Measles	6,986	2,813	1,941	5.5	2.2	1.6
Scarlet fever	2,524	2,546	2,577	2.0	2.0	2.1
Whooping cough	7,518	4,463	5,364	5.9	3.6	4.5
Diphtheria	4,159	4,937	5,418	3.3	3.9	4.5
Influenza	21,868	33,193	37,066	17.3	26.4	30.9
Respiratory complications specified	13,966	21,052	24,120	11.0	16.7	20.1
Respiratory complications not specified	7,902	12,141	12,946	6.3	9.7	10.8
Dysentery	3,373	2,815	2,083	2.7	2.2	1.7

See footnotes at end of table.

Provisional summary of mortality statistics for the United States for the years 1932, 1933, and 1934—Continued

Cause of death	Number of deaths			Rate per 100,000 estimated population		
	1934	1933	1932*	1934	1933	1932*
I. Infectious and parasitic diseases—Con.						
Plague	2	1		(1)	(1)	
Erysipelas	1,947	2,017	1,934	1.5	1.6	1.6
Acute poliomyelitis, acute polioencephalitis	852	797	828	.7	.6	.7
Lethargic or epidemic encephalitis	923	1,357	874	.7	1.1	.7
Epidemic cerebrospinal meningitis	1,272	1,482	1,677	1.0	1.2	1.4
Glanders	2			(1)		
Anthrax (Bacillus anthracis), malignant pustule	9	11	12	(1)	(1)	(1)
Rabies	80	65	55	.1	.1	(1)
Tetanus	1,226	1,253	1,119	1.0	1.0	.9
Tuberculosis (all forms)	71,609	74,842	75,509	56.6	59.5	62.9
Respiratory system	64,706	67,422	67,789	51.2	53.6	56.4
Meninges and central nervous system	2,109	2,212	2,317	1.7	1.8	1.9
Intestines and peritoneum	1,579	1,815	1,942	1.2	1.4	1.6
Vertebral column	738	755	809	.6	.6	.7
Bones and joints (vertebral column excepted)	398	382	426	.3	.3	.4
Bones	133	164	169	.1	.1	.1
Joints	265	218	257	.2	.2	.2
Skin and subcutaneous cellular tissue	27	38	59	(1)	(1)	(1)
Lymphatic system (bronchial, mesenteric, and retroperitoneal glands excepted)	150	177	164	.1	.1	.1
Genitourinary system	569	564	520	.5	.4	.4
Other organs	96	101	119	.1	.1	.1
Disseminated tuberculosis	1,237	1,376	1,364	1.0	1.1	1.1
Acute	1,095	1,195	1,193	.9	1.0	1.0
Chronic	142	17	14	.1	(1)	(1)
Unspecified		164	157		.1	.1
Leprosy	32	27	25	(1)	(1)	(1)
Syphilis	11,726	11,039	10,684	9.3	8.8	8.9
Gonococcus infection and other venereal diseases	1,051	998	916	.8	.8	.8
Purulent infection, septicemia (nonpuerperal)	928	931	869	.7	.7	.7
Malaria	4,520	4,678	2,568	3.6	3.7	2.1
Other diseases due to protozoal parasites	52	61	52	(1)	(1)	(1)
Ankylostomiasis	24	20	24	(1)	(1)	(1)
Hydatid cysts	26	36	36	(1)	(1)	(1)
Liver	18	26	24	(1)	(1)	(1)
Other organs	8	10	12	(1)	(1)	(1)
Other diseases caused by helminths	107	101	114	.1	.1	.1
Mycoses	287	261	249	.2	.2	.2
Other infectious and parasitic diseases	608	412	408	.5	.3	.3
II. Cancers and other tumors	*140,771*	*134,539*	*128,597*	*111.3*	*107.0*	*107.1*
Cancer and other malignant tumors	134,428	128,479	122,739	106.3	102.2	102.2
Of the buccal cavity and pharynx	5,009	4,845	4,596	4.0	3.9	3.8
Lip	712	692	670	.6	.6	.6
Tongue	1,056	1,036	946	.8	.8	.8
Mouth	555	505	441	.4	.4	.4
Jaw	1,053	1,054	1,034	.8	.8	.9
Other and unspecified parts of the buccal cavity	611	620	585	.5	.5	.5
Pharynx	1,022	938	920	.8	.7	.8
Of the digestive tract and peritoneum	65,476	63,176	60,810	51.8	50.3	50.6
Esophagus	2,243	2,111	2,063	1.8	1.7	1.7
Stomach and duodenum	26,869	26,566	25,509	21.3	21.1	21.6
Intestines (except duodenum, rectum, anus)	14,105	12,972	12,137	11.2	10.3	10.1
Rectum and anus	6,740	6,372	5,890	5.3	5.1	4.9
Liver and biliary passages	10,668	10,595	10,452	8.4	8.4	8.7
Pancreas	3,775	3,567	3,371	3.0	2.8	2.8
Mesentery and peritoneum	999	915	927	.8	.7	.8
Others under this title	77	78	61	.1	.1	.1
Of the respiratory system	5,473	4,940	4,549	4.3	3.9	3.8
Larynx	1,100	1,079	1,048	.9	.9	.9
Lungs and pleura	3,877	3,410	3,166	3.1	2.7	2.6
Other respiratory organs	496	451	335	.4	.4	.3
Of the uterus	15,635	15,221	14,908	12.4	12.1	12.4
Of other female genital organs	3,271	2,890	2,684	2.6	2.3	2.2
Ovary and Fallopian tube	2,676	2,304	2,167	2.1	1.8	1.8
Vagina and vulva	545	534	478	.4	.4	.4
Other female genital organs	50	52	39	(1)	(1)	(1)
Of the breast	13,171	12,484	11,889	10.4	9.9	9.9

See footnotes at end of table.

Provisional summary of mortality statistics for the United States for the years 1932, 1933, and 1934—Continued

Cause of death	Number of deaths			Rate per 100,000 estimated population		
	1934	1933	1932*	1934	1933	1932*
II. Cancers and other tumors—Continued.						
Cancer and other malignant tumors—Con.						
Of the male genitourinary organs	11,342	10,455	9,594	9.0	8.3	8.0
Kidneys and suprarenals (male)	1,149	1,040	945	.9	.8	.8
Bladder (male)	2,825	2,725	2,493	2.2	2.2	2.1
Prostate	6,578	5,980	5,466	5.2	4.8	4.6
Testes	452	394	352	.4	.3	.3
Scrotum	30	34	44	(1)	(1)	(1)
Other male genitourinary organs	308	282	294	.2	.2	.2
Of the skin	3,315	3,358	3,137	2.6	2.7	2.6
Of other or unspecified organs	11,736	11,110	10,572	9.3	8.8	8.8
Kidneys and suprarenals (female)	855	812	762	.7	.6	.6
Bladder (female)	1,351	1,368	1,266	1.1	1.1	1.1
Brain	1,164	1,018	932	.9	.8	.8
Bones (except jaw)	1,832	1,814	1,639	1.4	1.4	1.4
Other or unspecified organs	6,524	6,098	5,973	5.2	4.9	5.0
Nonmalignant tumors	4,500	4,054	3,897	3.6	3.2	3.2
Ovary	183	156	167	.1	.1	.1
Uterus	2,707	2,484	2,432	2.1	2.0	2.0
Other female genital organs	8	3	12	(1)	(1)	(1)
Other organs	1,602	1,411	1,286	1.3	1.1	1.1
Tumors of which the nature is not specified	1,843	2,066	1,961	1.5	1.6	1.6
Ovary	18	21	22	(1)	(1)	(1)
Uterus	12	10	18	(1)	(1)	(1)
Other female genital organs	3	2	1	(1)	(1)	(1)
Other organs	1,810	1,973	1,920	1.4	1.6	1.6
III. Rheumatic diseases, nutritional diseases, diseases of the endocrine glands, and other general diseases	*42,568*	*41,614*	*40,983*	*33.7*	*33.1*	*34.1*
Acute rheumatic fever	2,330	2,570	2,601	1.8	2.0	2.2
Chronic rheumatism, osteoarthritis	1,695	1,615	1,501	1.3	1.3	1.2
Gout	2	3	1	(1)	(1)	(1)
Diabetes mellitus	28,000	26,835	26,368	22.1	21.3	22.0
Scurvy	36	28	33	(1)	(1)	(1)
Beriberi	5	1	5	(1)	(1)	(1)
Pellagra	3,602	3,955	3,694	2.8	3.1	3.1
Rickets	292	339	354	.2	.3	.3
Osteomalacia	21	18	13	(1)	(1)	(1)
Diseases of the pituitary body	117	70	60	.1	.1	(1)
Diseases of thyroid and parathyroid glands	4,228	4,114	4,344	3.3	3.3	3.6
Simple goiter	247	277	290	.2	.2	.2
Exophthalmic goiter	3,502	3,398	3,666	2.8	2.7	3.1
Others under this title	479	439	388	.4	.3	.3
Diseases of the thymus gland	1,369	1,259	1,230	1.1	1.0	1.0
Diseases of the adrenals (Addison's disease, not specified as tuberculous)	347	366	357	.3	.3	.3
Other general diseases	524	441	422	.4	.4	.4
IV. Diseases of the blood and blood-making organs	*10,250*	*10,186*	*9,866*	*8.1*	*8.1*	*8.2*
Hemorrhagic conditions	825	829	791	.7	.7	.7
Anemias	3,943	4,288	4,390	3.1	3.4	3.7
Pernicious anemia	3,374	3,703	3,890	2.7	2.9	3.2
Other anemias	569	585	500	.5	.5	.4
Leukemias and pseudoleukemias	4,915	4,528	4,142	3.9	3.6	3.4
True leukemias	3,403	3,088	2,802	2.7	2.5	2.3
Pseudoleukemias (Hodgkin's disease)	1,512	1,440	1,340	1.2	1.1	1.1
Diseases of the spleen	430	412	431	.3	.3	.4
Other diseases of blood and blood-making organs	137	129	112	.1	.1	.1
V. Chronic poisonings and intoxications	*3,921*	*3,561*	*3,300*	*3.1*	*2.8*	*2.7*
Alcoholism (acute or chronic)	3,655	3,297	3,049	2.9	2.6	2.5
Chronic poisoning by other organic substances	123	123	146	.1	.1	.1
Chronic poisoning by mineral substances	143	141	105	.1	.1	.1
Lead	118	117	78	.1	.1	.1
Others under this title	25	24	27	(1)	(1)	(1)
VI. Diseases of the nervous system and of the organs of special sense	*134,365*	*130,959*	*129,665*	*106.3*	*104.2*	*107.9*
Encephalitis (nonepidemic)	1,527	1,535	1,293	1.2	1.2	1.1
Meningitis	2,360	2,411	2,359	1.9	1.9	2.0
Simple meningitis	2,094	2,108	2,037	1.7	1.7	1.7
Nonepidemic cerebrospinal meningitis	266	303	322	.2	.2	.3
Progressive locomotor ataxia (tabes dorsalis)	1,151	1,126	1,188	.9	.9	1.0

See footnotes at end of table.

Provisional summary of mortality statistics for the United States for the years 1932, 1933, and 1934—Continued

Cause of death	Number of deaths			Rate per 100,000 estimated population		
	1934	1933	1932*	1934	1933	1932*
VI. Diseases of the nervous system—Contd.						
Other diseases of the spinal cord	3,137	3,014	3,026	2.5	2.4	2.5
Cerebral hemorrhage, cerebral embolism, and thrombosis	108,110	105,555	104,897	85.5	84.0	87.3
Cerebral hemorrhage	97,148	94,573	94,694	76.8	75.2	78.8
Cerebral embolism and thrombosis	6,392	5,930	5,397	5.1	4.7	4.5
Softening of brain	720	703	688	.6	.6	.6
Hemiplegia and other paralysis, cause unspecified	3,850	4,349	4,118	3.0	3.5	3.4
General paralysis of the insane	4,805	4,538	4,573	3.8	3.6	3.8
Dementia praecox and other psychoses	1,468	1,449	1,342	1.2	1.2	1.1
Epilepsy	2,913	2,724	2,842	2.3	2.2	2.4
Convulsions (under 5 years of age)	774	797	841	.6	.6	.7
Other diseases of the nervous system	3,929	3,751	3,367	3.1	3.0	2.8
Diseases of the organs of vision	91	85	77	.1	.1	.1
Diseases of the ear and mastoid process	4,100	3,974	3,860	3.2	3.2	3.2
Diseases of ear	2,543	2,404	2,322	2.0	1.9	1.9
Diseases of mastoid process	1,557	1,570	1,538	1.2	1.2	1.3
VII. Diseases of the circulatory system	*333,296*	*314,004*	*295,569*	*263.6*	*249.8*	*246.0*
Pericarditis	709	879	907	.6	.7	.8
Acute endocarditis	3,574	3,433	3,559	2.8	2.7	3.0
Specified as acute	2,982	2,829	2,953	2.4	2.3	2.5
Unspecified (under 45 years of age)	592	604	606	.5	.5	.5
Chronic endocarditis, valvular diseases	57,762	58,902	61,335	45.7	46.9	51.0
Endocarditis, specified as chronic, and other valvular diseases	54,048	55,009	57,358	42.8	43.8	47.7
Endocarditis, unspecified (45 years and over)	3,714	3,893	3,977	2.9	3.1	3.3
Diseases of the myocardium	136,726	130,484	125,526	108.1	103.8	104.5
Acute myocarditis	4,800	4,357	4,375	3.8	3.5	3.6
Myocarditis, unspecified (under 45 years)	1,221	1,251	1,457	1.0	1.0	1.2
Chronic myocarditis, myocardial degeneration	99,679	94,720	91,181	78.8	75.4	75.9
Unspecified	31,026	30,156	28,513	24.5	24.0	23.7
Diseases of coronary arteries, angina pectoris	54,089	47,486	37,346	42.8	37.8	31.1
Angina pectoris	19,922	19,996	19,893	15.8	15.9	16.6
Diseases of coronary arteries	34,167	27,490	17,453	27.0	21.9	14.5
Other diseases of the heart	50,864	45,176	40,023	40.2	35.9	33.3
Functional diseases of heart	878	855	716	.7	.7	.6
Other and unspecified	49,986	44,321	39,307	39.5	35.3	32.7
Aneurysm (except of heart)	2,393	2,281	2,181	1.9	1.8	1.8
Arteriosclerosis (coronary arteries excepted)	22,696	21,062	20,534	18.0	16.8	17.1
Gangrene	900	959	924	.7	.8	.8
Other diseases of the arteries	1,684	1,529	1,526	1.3	1.2	1.3
Diseases of veins (varices, hemorrhoids, phlebitis, etc.)	715	700	698	.6	.6	.6
Diseases of lymphatic system (lymphangitis, etc.)	169	175	172	.1	.1	.1
Idiopathic anomalies of the blood pressure	743	655	529	.6	.5	.4
Other diseases of the circulatory system	272	283	249	.2	.2	.2
VIII. Diseases of the respiratory system	*114,879*	*100,548*	*105,935*	*90.9*	*80.0*	*88.2*
Diseases of the nasal fossae and annexae	1,097	1,041	1,089	.9	.8	.9
Diseases of nasal fossae	375	311	381	.3	.2	.3
Others under this title	722	730	708	.6	.6	.6
Diseases of the larynx	522	504	488	.4	.4	.4
Bronchitis	4,145	4,062	4,338	3.3	3.2	3.6
Acute	1,422	1,276	1,597	1.1	1.0	1.3
Chronic	1,794	1,853	1,840	1.4	1.5	1.5
Unspecified	929	933	901	.7	.7	.8
Broncho-pneumonia (including capillary bronchitis)	41,923	37,209	39,174	33.2	29.6	32.6
Broncho-pneumonia	41,520	36,827	38,708	32.8	29.3	32.2
Capillary bronchitis	403	382	466	.3	.3	.4
Lobar pneumonia	54,794	45,740	49,524	43.3	36.4	41.2
Pneumonia, unspecified	3,856	4,000	3,776	3.1	3.2	3.1
Pleurisy	2,897	2,646	2,618	2.3	2.1	2.2
Congestion, edema, embolism, hemorrhagic infarct, thrombosis of lungs	2,051	1,963	1,798	1.6	1.6	1.5
Pulmonary embolism and thrombosis	511	536	442	.4	.4	.4
Others under this title	1,540	1,427	1,356	1.2	1.1	1.1
Asthma	1,983	1,863	1,804	1.6	1.5	1.5
Pulmonary emphysema	119	147	114	.1	.1	.1
Other diseases of the respiratory system (tuberculosis excepted)	1,492	1,373	1,212	1.2	1.1	1.0

See footnotes at end of table.

Provisional summary of mortality statistics for the United States for the years 1932, 1933, and 1934—Continued

Cause of death	Number of deaths			Rate per 100,000 estimated population		
	1934	1933	1932*	1934	1933	1932*
IX. Diseases of the digestive system	*95,961*	*92,573*	*87,300*	*75.9*	*73.7*	*72.7*
Diseases of buccal cavity and annexa and of pharynx, tonsils	5,970	5,680	5,191	4.7	4.5	4.3
Diseases of pharynx and tonsils	4,994	4,747	4,350	4.0	3.8	3.6
Others under this title	976	933	841	.8	.7	.7
Diseases of esophagus	169	155	140	.1	.1	.1
Ulcer of stomach and duodenum	7,620	7,539	7,192	6.1	6.0	6.0
Ulcer of stomach	5,328	5,197	4,909	4.2	4.1	4.1
Ulcer of duodenum	2,362	2,342	2,283	1.9	1.9	1.9
Other diseases of stomach (cancer excepted)	3,650	3,853	3,670	2.9	3.1	3.1
Diarrhea and enteritis (under 2 years of age)	17,019	15,707	14,375	13.5	12.5	12.0
Diarrhea and enteritis (2 years and over)	6,192	5,966	5,244	4.9	4.7	4.4
Appendicitis	18,129	17,717	17,111	14.3	14.1	14.2
Hernia, intestinal obstruction	13,023	12,607	12,269	10.3	10.0	10.2
Hernia	5,093	4,931	4,863	4.0	3.9	4.0
Intestinal obstruction	7,930	7,676	7,406	6.3	6.1	6.2
Other diseases of intestines	1,455	1,369	1,185	1.2	1.1	1.0
Cirrhosis of liver	9,733	9,349	8,681	7.7	7.4	7.2
Other diseases of liver (including yellow atrophy of liver)	1,800	1,678	1,615	1.4	1.3	1.3
Yellow atrophy of liver	511	500	491	.4	.4	.4
Others under this title	1,289	1,178	1,124	1.0	.9	.9
Biliary calculi	4,749	4,541	4,577	3.8	3.6	3.8
Other diseases of gall-bladder, biliary passages	4,058	4,119	3,866	3.2	3.3	3.2
Diseases of pancreas	746	677	677	.6	.5	.6
Peritonitis, cause not specified	1,578	1,616	1,507	1.2	1.3	1.3
X. Diseases of the genitourinary system	*125,171*	*121,572*	*120,631*	*99.0*	*96.7*	*100.4*
Acute nephritis (including unspecified under 10 years of age)	4,508	4,732	4,323	3.6	3.8	3.6
Chronic nephritis	93,922	90,805	92,051	74.3	72.2	76.6
Nephritis, unspecified (10 years and over)	8,154	8,727	8,377	6.4	6.9	7.0
Other diseases of kidneys and ureters (puerperal diseases excepted)	3,730	3,513	3,382	3.0	2.8	2.8
Calculi of urinary passages	1,372	1,238	1,183	1.1	1.0	1.0
Diseases of bladder (tumor excepted)	740	750	751	.6	.6	.6
Diseases of urethra, urinary abscess, etc	468	514	410	.4	.4	.3
Disease of prostate	8,357	7,690	6,730	6.6	6.1	5.6
Diseases of male genital organs, not specified as venereal	135	109	125	1.0	.1	.1
Diseases of female genital organs, not specified as venereal	3,785	3,494	3,299	3.0	2.8	2.7
Cysts of ovary	754	697	700	.6	.6	.6
Other diseases of ovaries, diseases of tubes and parametrium	1,993	1,911	1,723	1.6	1.5	1.4
Diseases of uterus	943	814	787	.7	.6	.7
Nonpuerperal diseases of breast (cancer excepted)	16	11	18	(1)	(1)	(1)
Others under this title	79	61	71	.1	(1)	.1
XI. Diseases of pregnancy, childbirth, and the puerperal state	*12,859*	*12,885*	*13,293*	*10.2*	*10.3*	*11.1*
Abortion with septic conditions	2,204	2,037	2,057	1.7	1.6	1.7
Abortion without mention of septic conditions (to include hemorrhages)	570	640	717	.5	.5	.6
Ectopic gestation	571	610	571	.5	.5	.5
Septic conditions specified	106	121	108	.1	.1	.1
Septic conditions not mentioned	465	489	463	.4	.4	.4
Other accidents of pregnancy (not to include hemorrhages)	94	88	86	.1	.1	.1
Puerperal hemorrhage	1,404	1,339	1,392	1.1	1.1	1.2
Placenta praevia	432	411	422	.3	.3	.4
Other puerperal hemorrhages	972	928	970	.8	.7	.8
Puerperal septicemia (not specified as due to abortion)	2,808	2,729	2,774	2.2	2.2	2.3
Puerperal septicemia and pyemia	2,800	2,719	2,761	2.2	2.2	2.3
Puerperal tetanus	8	10	13	(1)	(1)	(1)
Puerperal albuminuria and eclampsia	2,431	2,520	2,692	1.9	2.0	2.2
Other toxemias of pregnancy	559	535	499	.4	.4	.4
Puerperal phlegmasia, alba dolens, embolus, sudden death (not specified as septic)	561	592	628	.4	.5	.5
Other accidents of childbirth	1,621	1,750	1,827	1.3	1.4	1.5
Other and unspecified conditions of puerperal state	36	45	50	(1)	(1)	(1)

See footnotes at end of table.

Provisional summary of mortality statistics for the United States for the years 1932, 1933, and 1934—Continued

Cause of death	Number of deaths			Rate per 100,000 estimated population		
	1934	1933	1932*	1934	1933	1932*
XII. Diseases of the skin and cellular tissue	*2,144*	*2,133*	*1,895*	*1.7*	*1.7*	*1.6*
Furuncle, carbuncle	605	634	538	.5	.5	.4
Phlegmon, acute abscess	766	753	654	.6	.6	.5
Other diseases of skin and annexa, and of cellular tissue	773	746	703	.6	.6	.6
XIII. Diseases of the bones and organs of locomotion	*1,694*	*1,596*	*1,606*	*1.3*	*1.3*	*1.3*
Osteomyelitis	1,115	1,071	1,070	.9	.9	.9
Other diseases of the bones (tuberculosis excepted)	189	177	179	.1	.1	.1
Diseases of joints and other organs of locomotion	390	348	357	.3	.3	.3
XIV. Congenital malformations	*12,640*	*12,112*	*12,363*	*10.0*	*9.6*	*10.3*
Congenital malformations	12,640	12,112	12,363	10.0	9.6	10.3
Congenital hydrocephalus	1,653	1,542	1,642	1.3	1.2	1.4
Spina bifida and meningocele	1,317	1,257	1,400	1.0	1.0	1.2
Congenital malformations of the heart	6,368	6,208	6,294	5.0	4.9	5.2
Others under this title	3,302	3,105	3,027	2.6	2.5	2.5
XV. Diseases of early infancy	*54,348*	*51,453*	*51,571*	*43.0*	*40.9*	*42.9*
Congenital debility	4,223	4,067	3,860	3.3	3.2	3.2
Premature birth	35,102	32,953	33,143	27.8	26.2	27.6
Injury at birth	9,860	9,506	9,681	7.8	7.6	8.1
Other diseases peculiar to early infancy	5,163	4,927	4,887	4.1	3.9	4.1
XVI. Senility	*10,961*	*11,318*	*10,207*	*8.7*	*9.0*	*8.5*
XVII. Violent and accidental deaths	*132,022*	*123,204*	*117,830*	*104.4*	*98.0*	*98.1*
Suicide	18,828	19,993	20,927	14.9	15.9	17.4
By solid or liquid poisons or by absorption of corrosive substances	2,960	3,141	3,320	2.3	2.5	2.8
By poisonous gas	2,374	2,694	3,001	1.9	2.1	2.5
By hanging or strangulation	3,517	3,543	3,632	2.8	2.8	3.0
By drowning	872	980	996	.7	.8	.8
By firearms	7,296	7,798	8,075	5.8	6.2	6.7
By cutting or piercing instruments	847	821	874	.7	.7	.7
By jumping from high places	633	689	702	.5	.5	.6
By crushing	147	141	156	.1	.1	.1
By other means	182	186	171	.1	.1	.1
Homicide	12,055	12,124	11,035	9.5	9.6	9.2
By firearms	7,702	7,863	7,458	6.1	6.3	6.2
By cutting or piercing instruments	2,122	2,065	1,650	1.7	1.6	1.4
By other means	2,231	2,196	1,927	1.8	1.7	1.6
Accidental, other, or undefined	101,139	91,087	85,868	80.0	72.5	71.5
Attack by venomous animals	147	155	127	.1	.1	.1
Poisoning by food	738	689	638	.6	.5	.5
Absorption of poisonous gas	1,639	1,594	1,988	1.3	1.3	1.7
Supplemental	56	74	64	(1)	.1	.1
Other acute accidental poisonings (gas excepted)	1,417	1,490	1,605	1.1	1.2	1.3
Conflagration	1,752	1,521	1,555	1.4	1.2	1.3
Burns (conflagration excepted)	5,758	5,232	5,358	4.6	4.2	4.5
Supplemental	751	588	561	.6	.5	.5
Mechanical suffocation	1,055	934	904	.8	.7	.8
Supplemental	69	65	40	.1	.1	(1)
Drowning	6,006	6,219	6,199	4.8	4.9	5.2
Supplemental	1,320	1,246	1,228	1.0	1.0	1.0
Traumatism:						
By firearms (wounds of war excepted)	3,023	3,026	2,928	2.4	2.4	2.4
By cutting or piercing instruments (wounds of war excepted)	925	836	757	.7	.7	.6
Supplemental	329	265	230	.3	.2	.2
By fall, crushing, landslide	32,854	29,376	26,677	26.0	23.4	22.2
By fall	20,762	18,933	17,834	16.4	15.1	14.8
Supplemental	3,066	2,813	2,606	2.4	2.2	2.2
By crushing, landslide	613	556	502	.5	.4	.4
Supplemental	8,413	7,074	5,735	6.7	5.6	4.8
Cataclysm	117	503	404	.1	.4	.3
Injuries by animals	660	591	571	.5	.5	.5

See footnotes at end of table.

Provisional summary of mortality statistics for the United States for the years 1932, 1933, and 1934—Continued

Cause of death	Number of deaths			Rate per 100,000 estimated population		
	1934	1933	1932*	1934	1933	1932*
XVII. Violent and accidental deaths—Con.						
Accidental, other, or undefined—Continued.						
Hunger and thirst	21	39	27	(1)	(1)	(1)
Excessive cold	437	319	287	.3	.3	.2
Excessive heat	3,250	1,025	689	2.6	.8	.6
Lightning	442	372	362	.3	.3	.3
Due to electric currents	623	575	589	.5	.5	.5
Supplemental	100	104	86	.1	.1	.1
Other accidents	37,483	34,083	31,858	29.6	27.1	26.5
Foreign bodies	681	669	633	.5	.5	.5
Others under this title	4,558	4,311	3,835	3.6	3.4	3.2
Supplemental	32,244	29,103	27,390	25.5	23.2	22.8
Violent deaths of unknown nature	5	11	5	(1)	(1)	(1)
Wounds of war		2			(1)	
Legal executions	162	153	131	.1	.1	.1
XVIII. Ill-defined causes of death	*20,929*	*22,028*	*20,999*	*16.6*	*17.5*	*17.5*
Sudden death	2,004	2,089	1,951	1.6	1.7	1.6
Cause of death not specified or ill-defined	18,925	19,939	19,048	15.0	15.9	15.9
Ill-defined	5,128	5,476	4,804	4.1	4.4	4.0
Not specified or unknown	13,797	14,463	14,244	10.9	11.5	11.9

The following tabulation is made in accordance with the requirements of the International Conference at Paris, 1929. The deaths included represent a reclassification of accidental deaths for comparison with figures reported in prior years.

Cause of death	Number of deaths			Rate per 100,000 estimated population		
	1934	1933	1932*	1934	1933	1932*
Accidents in mines and quarries	1,480	1,338	1,520	1.2	1.1	1.3
Accidents from agricultural machinery	226	275	285	.2	.2	.2
Elevator accidents	231	217	218	.2	.2	.2
Accidents from machinery used for recreation	14	8	14	(1)	(1)	(1)
Other machinery accidents	1,139	931	878	.9	.7	.7
Railroad and automobile collisions	1,457	1,437	1,466	1.2	1.1	1.2
Other railroad accidents	3,789	3,973	3,502	3.0	3.2	2.9
Street car and automobile collisions	332	318	304	.3	.3	.3
Other street car accidents	552	529	523	.4	.4	.4
Automobile accidents (primary)	33,980	29,323	26,350	26.9	23.3	21.9
Motorcycle accidents	332	285	241	.3	.2	.2
Other land transportation accidents	1,202	1,235	1,131	1.0	1.0	.9
Water transportation accidents	1,186	1,029	1,122	.9	.8	.9
Air transportation accidents	428	434	386	.3	.3	.3

Deaths in the preceding table are included under their appropriate titles of the International List as shown in the following table:

Absorption of poisonous gas	56	74	64	(1)	0.1	0.1
Burns (conflagration excepted)	751	588	561	0.6	.5	.5
Mechanical suffocation	69	65	40	.1	.1	(1)
Drowning	1,320	1,246	1,228	1.0	1.0	1.0
Cutting or piercing instruments	329	265	230	.3	.2	.2
Fall	3,066	2,813	2,606	2.4	2.2	2.2
Crushing	8,413	7,074	5,735	6.7	5.6	4.8
Due to electric currents	100	104	86	.1	.1	.1
Other accidents	32,244	29,103	27,390	25.5	23.2	22.8

* Included 96.3 percent of United States population.
1 Less than 1/10 of 1 per 100,000 population.

BACTERIOLOGICAL EXAMINATIONS OF OYSTERS AND WATER FROM NARRAGANSETT BAY DURING THE WINTER AND SPRING OF 1927-28

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During the winter of 1927–28, the United States Public Health Service, in connection with its investigations relating to the sanitary control of the shellfish industry, undertook a fairly extensive series of bacteriological examinations of oysters taken from selected beds in Narragansett Bay, with coincident examinations of the immediately overlying waters. The special purpose in view was to ascertain the relation between the bacteriological quality of oysters and that of the overlying water during the active marketing season in a northern area where low water temperatures are sustained.

METHODS

The field work was carried on jointly by the authors, on board the United States Public Health Service Laboratory launch *Shearwater*, which was used both for the collection and examination of samples. Oysters for examination were taken directly from their beds by means of a small hand dredge towed by the launch. Samples of the overlying waters were collected at the same time, both from the surface and from near the bottom.

The surface-water samples were collected primarily for comparison with similar samples collected in the same area during the previous summer, and also to ascertain in a rough way whether a material difference existed between the bacterial quality of surface water and that near the bottom. No material difference was found, and therefore the results of examinations of surface samples are omitted from this report.

In examination of the bottom-water samples, fermentation tests were made precisely as in the examination of oysters, using a total of 15 tubes for each sample. In the early months of the work, the amounts of water tested were 10 cc, 1 cc, and 0.1 cc, five tubes in each amount. It was found, however, that the 10-cc portions were almost uniformly positive. Hence after January 29, 1928, examinations were made in portions of 1 cc, 0.1 cc, and 0.01 cc, precisely as in the examination of oysters.

Examinations of the shell liquor of oysters were made strictly in accordance with the Standard Methods of the American Public Health Association, and all positive results in fermentation tubes, whether from water or from shell liquor, were confirmed by streaking on Endo plates and transfer to a second fermentation tube.

In addition to the regular standard examination of shell liquor, a series of parallel examinations was made of some samples to determine the bacteriological content of oyster meats. After draining away the oyster liquor for sampling in the regular way, the oyster meats were transferred to sterile Petri dishes, where they were cut into small pieces with a sterile knife. Enough cut-up material was transferred to a wide-mouth sampling bottle containing 200 cc sterile salt solution to bring the total volume to 400 cc, as nearly as possible without leaving part of an oyster out of the sample. The examination was then made in accordance with the Standard Methods for the examination of shucked oysters.

After February 3, the following procedure, which was much simpler and quicker, was adopted: After draining away the shell liquor for the regular examination, the adductor muscle was cut at each valve, permitting the oyster meat to slide from the valves into a wide-mouth sampling bottle containing 200 cc of sterile 2 percent salt solution. Whole meats were added to bring the total volume as close to 400 cc as possible. About a tablespoonful of sterilized bird shot was added, the glass stopper replaced on the bottle, and the bottle shaken until an emulsion was obtained. This agitation resulted in cutting out the stomach and intestinal tract, together with the softer parts of the oyster, and diffusing their contents through the solution from which the liquid quantities were taken for examination. The examination was then made in accordance with Standard Methods for examination of shucked oysters. While the results of these analyses are presented in the accompanying tables, a discussion of the findings as compared with standard examinations of shell liquor is deferred to some future time.

In the tabulations which follow, the results of both water and oyster examinations are expressed primarily in terms of the standard score set up by the American Public Health Association in its Standard Methods for Examination of Shellfish.[1] Parallel columns of the same tables, or separate tables, give the same results expressed in terms of "most probable numbers of *coli-aerogenes* per 100 cc" (referred to hereafter as MPN) as derived from McCrady's "Tables for rapid interpretation of fermentation tube tests."[2] Numbers calculated in this way correspond roughly to the *coli-aerogenes* index obtained when the standard score is multiplied by 20. The correspondence between this index and the MPN is, however, only approximate, because the ratio of the MPN to the score varies with different score values; and, moreover, the several combinations which give the same score may give quite different MPN'S. For instance, the *coli-aerogenes* index corresponding to a score of 14 is

[1] Report of Committee on Standard Methods for the Bacteriological Examination of Shellfish, Am. Jour. of Public Health, July 1922.

[2] Tables for rapid interpretation of fermentation tube results. By M. H. McCrady. The Public Health Journal (Canadian), vol. 9, May 1918.

280 (=score×20). There are, however, a number of different combinations of positive and negative fermentation tubes which give a score of 14; and considering only the combinations actually encountered in the examinations here recorded in the score 14 range, the MPN's varied from 170 to 350, the most frequent value being 350.

The variable relationship between the standard score and the MPN when both are calculated from the same fermentation tests is shown in detail in table A of the Appendix, which shows for each theoretically possible combination of positive and negative results in a set of 15 fermentation tubes (1) the resulting standard score and (2) the corresponding MPN. The scope of theoretically possible MPN values corresponding to each value of the score as derived from this table is shown graphically in figure 1. It may be noted that of the 216 possible combinations included in table A, only 37 were actually observed in this series of examinations, which comprises a total of 565 samples. Hence, for certain scores, the ranges of MPN values actually observed in this work were considerably narrower than is theoretically possible. The MPN ranges actually encountered in this work are shown in the summary below, and are included in the solid portions of the bars of figure 1. Ten percent of the water samples gave results which were "inconsistent"; i. e., one or more of the high dilution tubes were positive, although not all 5 of the next lower dilution tubes were positive—for example, 5–4–1 instead of 5–5–0. Among the oyster results, 17 percent were "inconsistent" figures.

The relationship between standard score and MPN's of *coli-aerogenes* per 100 cc, as actually observed in the water and oyster examinations here presented, is as shown below. The maximum figures were encountered much more frequently than the minimum figures.

Score	MPN as observed		Coli-aerogenes index (=score×20)
	Minimum	Maximum	
0	0	Less than 20	0
1	20	20	20
2	40	50	40
3	70	80	60
4	110	130	80
5	140	250	100
14	170	350	280
23	250	500	460
32	350	900	640
41	400	1,600	820
50	1,400	2,500	1,000
140	2,500	3,500	2,800
230	3,000	6,000	4,600
320	9,000	9,000	6,400
410	16,000	16,000	8,200
500+	18,000	18,000+	10,000

It is unnecessary here to enter into any general discussion of the methods of expressing results in scores or in MPN's. Both expressions are included in this study because the score is in general use for

reporting results of oyster examination, hence it is almost necessary to use it; but, on the other hand, expression in terms of MPN rests on a better scientific basis, gives data which are in some respects better adapted to statistical treatment, and expresses the results more

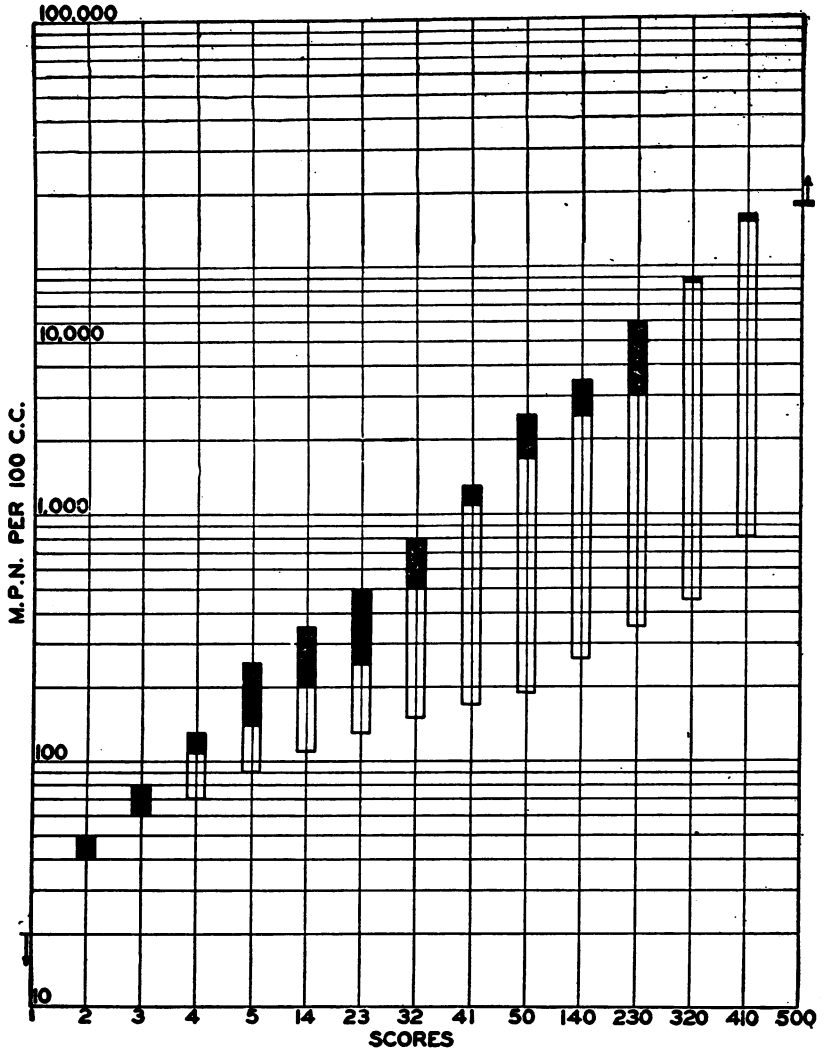

FIGURE 1.—Range of theoretically possible MPN values for each value in the standard score. Solid bars indicate ranges actually observed.

precisely. However, it will be shown later that, as regards final interpretations, it makes no great difference which method of statement is used.

AREA IN WHICH STUDIES WERE MADE

The stations from which samples were collected are shown in figure 2. The principal source of pollution affecting the area in which the samples were taken is the sewage from Providence, about

5 miles above the nearest regular collecting point, Station A. Float studies made during the course of this investigation showed that a float released at the outfall of the Providence sewage treatment plant reached the area in the vicinity of Station A on the second ebb tide,

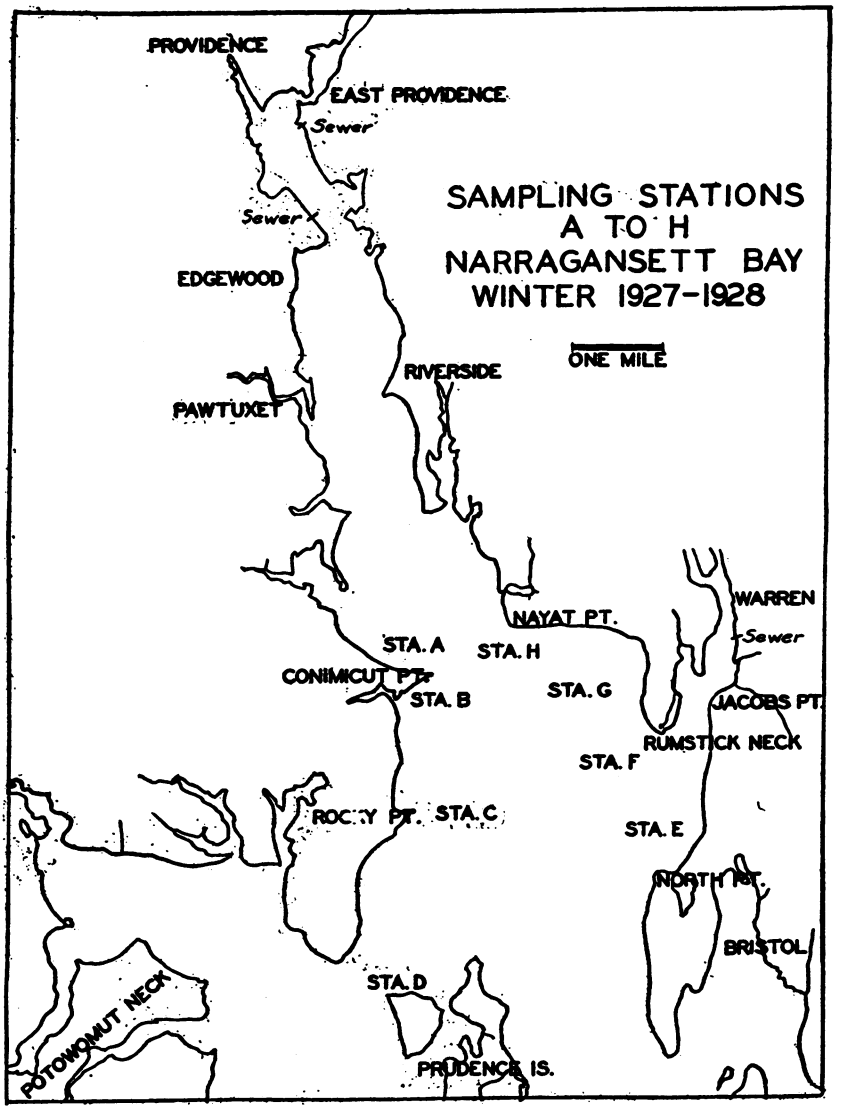

FIGURE 2.—Sampling stations.

that is, within about 18 hours. Practically all of the Providence sewage is passed through chemical precipitation tanks. The effluent is chlorinated but not completely sterilized.

Below Providence, a number of private sewers discharge directly into Providence River, and a small amount of sewage may at times

be contributed by the shipping on the bay. Station H, on account of its proximity to the ship channel, is probably exposed to this contamination more than any of the other stations.

In addition to these sources of pollution, there are the more distant sources on the Seekonk River, on which are located East Providence and Pawtucket, and, further upstream, pollution from cities on the Blackstone. A total population in excess of 680,000 resides on the watershed above the point where the Providence sewer discharges. A large part of the sewage, but not all, receives some treatment before it reaches the water courses.

All this pollution is rather highly diluted in Narragansett Bay by admixture with salt water. The tides carry it back and forth in a shuttlelike motion as it slowly moves out into the bay. Stations A, B, H, and G, being closer in, are naturally more affected by this contamination than the more distant stations. On the other hand, Station F is exposed to the sewage from the city of Warren, about 2 miles away. This sewage is settled and chlorinated, but not completely sterilized. Stations C, D, and E are affected in a lesser degree, but are not free from the effects of the general contamination noticeable in the area.

All of the stations except A are in areas from which the marketing of oysters has been permitted in cold weather.

PRESENTATION OF DATA

Table B (see Appendix) records all the examinations made, grouped according to stations in chronological order. It shows, for each sample, the date of collection, water temperature, and the results of the bacteriological examination expressed in terms of standard score and most probable number of *coli-aerogenes* per 100 cc.

The examinations extend over a period of 6 months, from November 21, 1927, to May 21, 1928. During this time water temperatures ranged from −2.5° C. to 14.4° C.; but for 5 consecutive months, December to April, inclusive, the temperature was consistently under 10°, and from January 4 to the latter part of March it was constantly under 5°.

The total number of examinations included in this table is 565, comprising the following examinations: Oyster liquor, 281; oyster meats, 89; and water samples, 195. There are 182 entries giving results of the examination of standard oyster samples and of corresponding water samples taken at the same time and place. In a few instances the results recorded for examination of oyster samples are the means of two oyster samples taken at the same time and place at which a single water sample was taken. This, however, is exceptional.

The 8 principal sampling stations fall into 2 groups, separated on a definite geographic basis, namely, (1) in the upper bay, stations A, B, H, and G, and (2) in the lower bay, stations C, D, E, and F.

The results of bacteriological examination of the samples taken at both upper and lower stations are shown in tables 1 and 2, results in the former being expressed in terms of the standard score and in the latter in terms of MPN.

TABLE 1.—*Summary of results of examinations of water samples in "upper" and "lower" station groups*

Score	Number of samples giving indicated score at each station									
	Upper stations					Lower stations				
	A	B	G	H	Total, A, B, G, H	C	D	E	F	Total, C, D, E, F
0	0	1	------	1	2	5	2	0	1	8
1	1	1	------	1	3	3	3	2	4	12
2	0	0	------	2	2	1	4	0	5	10
3	3	0	2	1	6	2	0	3	2	7
4	3	1	2	6	12	2	1	1	6	10
5	5	2	2	8	17	1	3	1	5	10
14	4	4	3	8	19	5	3	1	1	10
23	1	0	0	6	7	3	0	3	2	8
32	2	0	6	4	12	1	1	1	2	5
41	2	1	1	5	9	0	------	------	------	------
50	2	------	------	5	7	1	------	------	1	2
140	------	------	1	2	3	------	------	------	------	------
230	------	------	------	------	------	------	------	------	------	------
320	------	------	------	------	------	------	------	------	------	------
410	------	------	------	------	------	------	------	------	------	------
500	------	------	------	------	------	------	------	------	1	1
Total	23	10	17	49	99	24	17	12	30	83
Medians	5	9.5	14	14	14	4	2	4.5	4	4
Percentage under 3	------	------	------	------	7	------	------	------	------	36
Percentage over 5	------	------	------	------	58	------	------	------	------	32

TABLE 2.—*Summary of results of examinations of water samples in "upper" and "lower" station groups*

MPN per 100 cc	Number of samples showing indicated MPN									
	Upper stations					Lower stations				
	A	B	G	H	Total, A, B, G, H	C	D	E	F	Total, C, D, E, F
20 and under	1	1	------	2	4	7	5	2	4	18
21-40	0	1	------	2	3	1	------	------	1	2
41-80	3	------	2	2	7	3	4	3	7	17
81-160	3	1	2	5	11	2	1	1	6	10
161-320	4	2	4	8	18	2	4	1	5	12
321-640	6	4	1	14	25	6	2	4	3	15
641-1280	2	------	6	4	12	2	1	1	2	6
1281-2560	4	1	1	9	15	1	------	------	1	2
2561-5120	------	------	1	3	4	------	------	------	------	------
5121-10240	------	------	------	------	------	------	------	------	------	------
10241-20480	------	------	------	------	------	------	------	------	1	1
Total	23	10	17	49	99	24	17	12	30	83
Medians	350	350	350	350	350	130	50	190	130	130
Percentage under 81	------	------	------	------	8	------	------	------	------	36
Percentage over 250	------	------	------	------	55	------	------	------	------	29

It will be seen from tables 1 and 2 that the 4 upper stations as a group show materially higher pollution than the 4 lower stations. Considering scores under 3, or MPN under 81, as indicating fairly clean water, and scores over 5, or MPN in excess of 250, as indicative of rather gross pollution, it is noted that the water at the upper stations was usually found quite heavily polluted, while that at the lower stations was of distinctly better quality: through still subject at times to high pollution.

For purposes of studying bacteriological results in relation to temperature and season, the 6 months during which samples were taken are subdivided into 3 periods, namely, (1) November and December,[3] temperatures ranging over 5°; (2) January 4 to March 25, temperatures constantly under 5°; and (3) March 27 to May 21, temperatures over 5°. The first and third of these periods are similar with respect to temperature range but different in that the first represents a period of falling temperature which has been preceded by a warm season while the third is a period of rising temperature following the winter season.

With respect to seasonal variation, both upper and lower stations show their highest pollution in the late fall, prior to December 12, while no material difference is shown between the winter period, January–March, and the spring period, March 26–May 21. Both periods show a better quality of water than the fall period. For all stations the median water scores for these periods are 23, 5, and 5, respectively.

RELATION OF WATER POLLUTION TO OYSTER POLLUTION

Table 3 presents, in the form of a correlation table, the scores found in 182 pairs of examinations, each pair including an oyster sample and a water sample collected at the same time and from the same place. Table 4 presents the results of the same examinations expressed in terms of MPN.

Referring to table 3 and figure 3, taking the whole season into consideration, it is seen that the water scores fall into a fairly symmetrical distribution, with a mode in the range of 5 to 14, while the distribution of oyster scores is highly skew, showing the greatest number of observations in the ranges 0 and 1. That is, the table shows what has long been recognized as a general fact, that oyster scores in cold weather are usually lower than corresponding water scores. The oyster scores, however, are more variable, so that values over 50 are encountered 11 times in oyster examinations as against 4 times in water samples. As the result of these occasional excessive high values, the arithmetic mean of the oyster scores is greatly dis-

[3] No samples were taken between Dec. 12 and Jan. 4.

torted, and is greater than the mean water score, notwithstanding that as a rule the oyster scores are lower. Omitting only the positive indeterminate scores (500+), the average oyster score is 15.2 and the

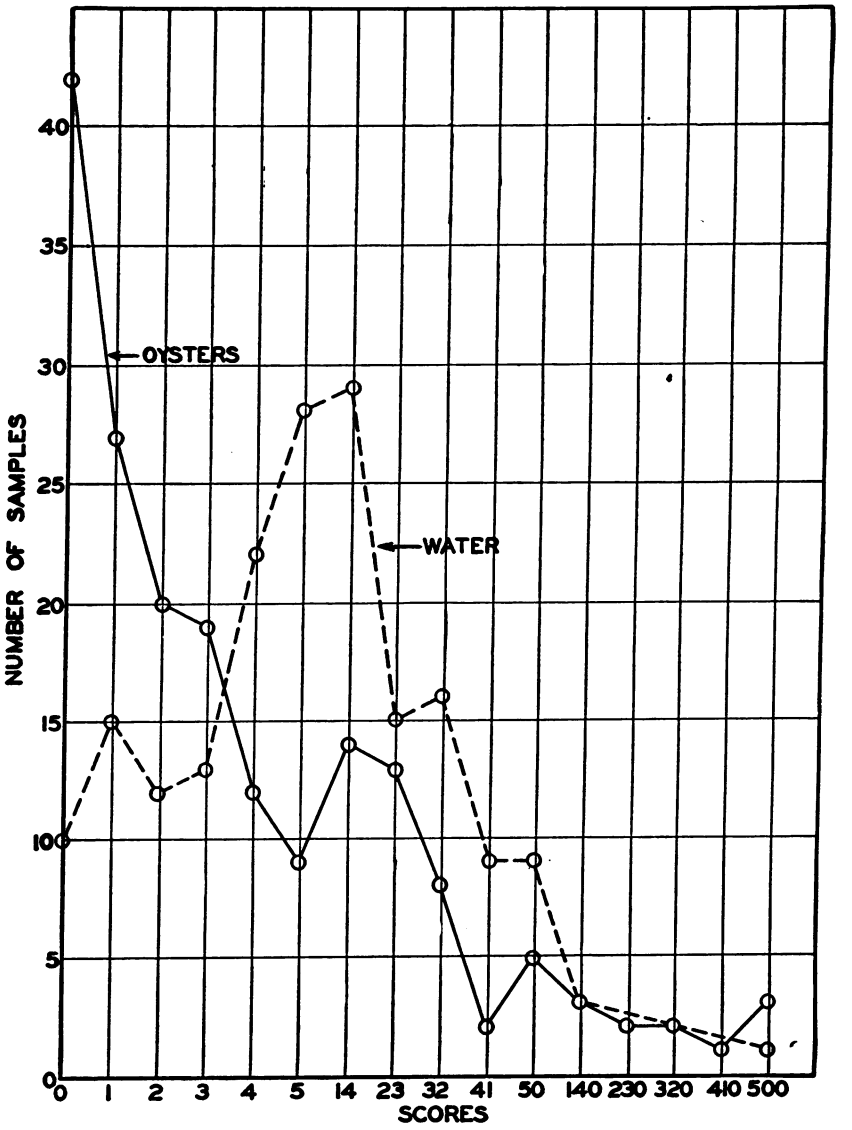

FIGURE 3.—Frequency distribution of water and oyster scores

average water score 15.5. In dealing with results such as these, however, a comparison of medians or of geometric means is more instructive. The median water and oyster scores for the whole series are 5 and 3, respectively.

TABLE 3.—*Correlation table, water and oyster scores* [1]*—Total of 182 fall, winter, and spring samples*

[Coefficient of correlation = +.271±.046]

WATER SCORES	OYSTER SCORES 0	1	2	3	4	5	14	23	32	41	50	140	230	320	410	500+	Total
0	2	5	2	1													10
1	6	2	2	2								1				2	15
2	8	2	1	1													12
3	2	4	2	1	1		2		1								13
4	5	2	5		2	2	2	3					1				22
5	7	4	2	4	2	2	3	2			1	1					28
14	5	4	3	4	1	2	4	1	1	1	1	1		1			29
23	3	1		3		1	1	1	2	1	1		1				15
32	3	1		1	1		1	4	2		1			1		1	16
41			1	1	2			2	2						1		9
50	1	1	2	1	1	2	1										9
140					2						1						3
230																	
320																	
410																	
500+		1															1
Total	42	27	20	19	12	9	14	13	8	2	5	3	2	2	1	3	182

[1] Average scores such as 27.5 are regarded as falling into the *next lower* group, 23, rather than into the next higher.

TABLE 4.—*Correlation table, water and oyster MPN's—Total of 182 fall, winter, and spring samples*

[Coefficient of correlation = +.256±.039]

Water MPN's	OYSTER MPN'S Under 20	20–39	40–79	80–159	160–319	320–639	640–1,279	1,280–2,559	2,560–5,119	5,120–10,239	10,240–18,000+	Total
Under 20	2	5	2	1								10
20–39	6	2	2	2					1		2	15
40–79	8	2	1	1						1		13
80–159	7	5	7	4	4	7						34
160–319	7	4	2	6	4	4	1	2	1			31
320–639	8	5	4	7	3	6	1	3	1	2		40
640–1,279	3	2		2	1	4	2	1		1	1	17
1,280–2,559	1	1	3	5	3	2	2				1	18
2,560–5,119				2				1				3
5,120–10,239												
10,240–18,000+		1										1
Total	42	27	21	30	15	23	6	7	3	4	4	182

As regards correspondence between water and oyster scores, inspection of table 3 and figure 3 shows a general tendency for oyster scores to increase as water scores increase, but with numerous instances of irregularity where high oyster scores correspond to low water scores and vice versa. The coefficient of correlation between oyster and water scores as derived from this table is $+0.271 \pm 0.046$. In calculating this coefficient, the class interval represented by the difference between any two successive scores in the standard scale is taken as unity. Thus, the same weight is given to the difference between scores of 1 and 2 as to the difference between scores of 5 and 14, or 50 and 140.[4]

This coefficient is significant in relation to its probable error, but of a rather low order, indicating what has previously been observed by inspection of table 3 and figure 3, namely, that water scores and oyster scores tend to some degree of correspondence when viewed broadly, but that, considered in detail, this correspondence is by no means close. A fact indicative of the rough general correspondence underlying the irregularity in individual results is that for all water samples scoring under 14 the mean oyster score is 19.6, and for all water samples scoring 14 or over, the mean corresponding oyster score is 34.8. In terms of MPN's, for waters having an MPN of 250 or less the mean oyster MPN is 637, while for waters having an MPN of over 250, the mean oyster MPN is 1,260. Also, by arranging the 182 pairs of water and oyster MPN's in order of water MPN magnitude in 4 approximately equal groups, and comparing the medians in each group, we find the following:

Number of samples	MPN median	
	Water	Oyster
38	20	20
42	130	50
58	350	80
44	1,600	225
182	250	75

[4] For advice in regard to use of this procedure and for checking the calculation of the correlation coefficient, the writer is indebted to Dr. Lowell J. Reed, professor of biometry and vital statistics, the Johns Hopkins University School of Hygiene and Public Health.

These figures show that, under the conditions here operating, as the water contamination increases, oyster contamination also increases, but not at the same rate.[5]

In table 4 the data which have been presented in table 3 in terms of standard scores are restated in terms of most probable numbers of *coli-aerogenes* per 100 cc (MPN), grouped into geometric frequency distributions. The general picture is similar to that presented in table 3, and the coefficient of correlation is of the same order, its value being $+0.256 \pm 0.069$. In this calculation, as in that based on table 3, the class interval between successive groups in the geometric distribution has been taken as unity.[6]

It will be noted from tables 3 and 4 that water samples showed greater contamination than corresponding oyster samples in about two-thirds of the observations, and less contamination than oysters in about one-fourth of the observations. Occasionally, however, oyster samples show contamination *very much* greater than the water samples. Comparison of arithmetic means may, therefore, be misleading, due to the distortion by occasional excessively high oyster scores.

This relationship between the water and oyster analyses contained herein may also be summarized as follows:[7]

	Score	MPN
	Percent	*Percent*
Water samples showing greater contamination than oyster samples	64	68
Water samples showing equal contamination to oyster samples	9	5
Water samples showing less contamination than oyster samples	27	27
	100	100

[5] In a group of samples reported to us by the Rhode Island Shellfish Commission during the winter of 1929–30, the following results are obtained when similarly grouped:

Number of samples	Median score	
	Water	Oyster
97	0	0
97	1	1
97	3	3
96	23	4
387	----------	----------

[6] Acknowledgment is again made to Dr. Reed for advice as to procedure.

[7] The results obtained by the Rhode Island Shellfish Commission in the winter of 1929–30 give:

	Percent
Water samples showing greater contamination than oyster samples	36.4
Water samples showing equal contamination to oyster samples	19.9
Water samples showing less contamination than oyster samples	43.7
	100

EFFECT OF TEMPERATURE ON RELATION BETWEEN OYSTER SCORE AND WATER SCORE

In table 3 the seasonal effects on the relation between water contamination and oyster contamination are obscured. They become more apparent in studying the fall, winter, and spring groupings

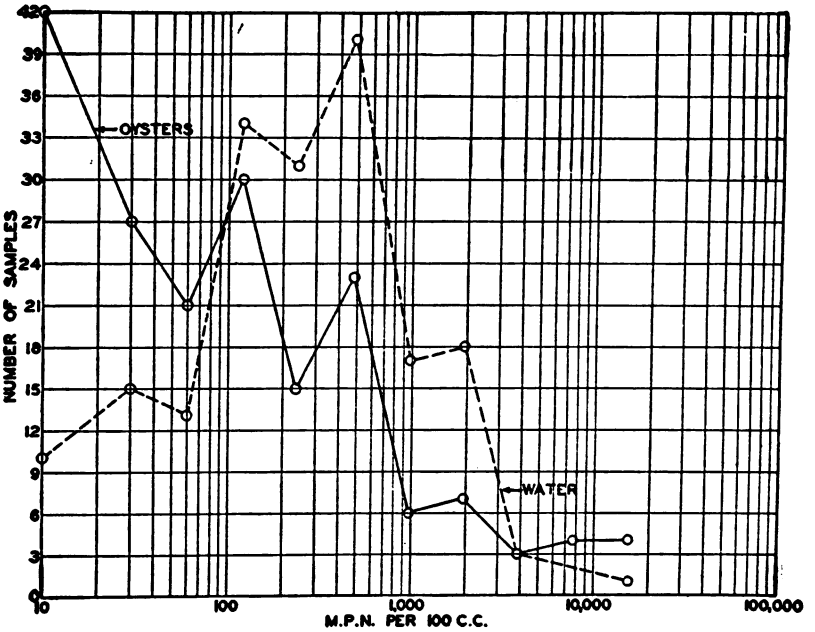

FIGURE 4.—Frequency distribution of water and oyster MPN's.

separately, as shown in tables 5 to 10, inclusive. It will be noted by inspection of tables 5 and 6 (fall results) that a rather high degree of correlation between water and oyster samples exists in this temperature range and season. This close correspondence disappears as the effects of cold weather are felt, as shown in tables 7 and 8 (winter results) and 9 and 10 (spring results).

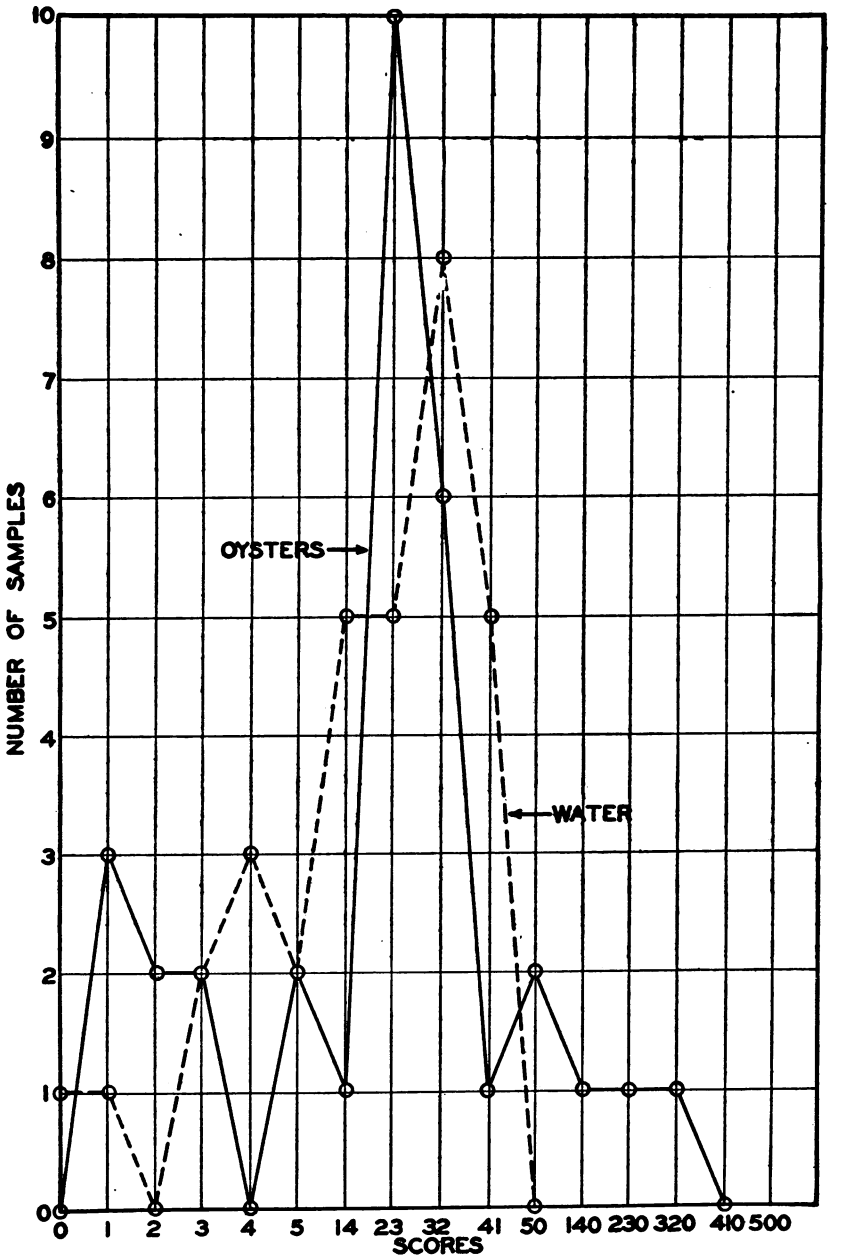

FIGURE 5.—Frequency distribution of water and oyster scores in the fall. Temperature of water above 5° C.

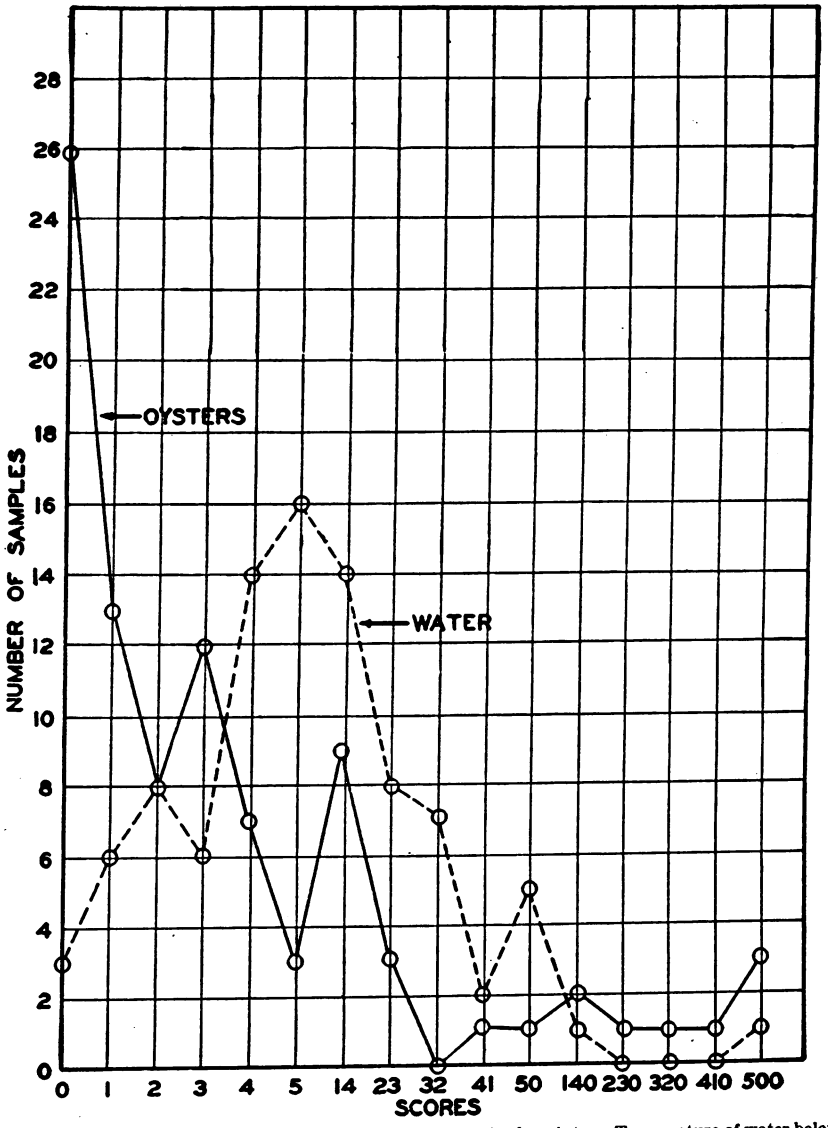

FIGURE 6.—Frequency distribution of water and oyster scores in the winter. Temperature of water below 5° C.

The difference is shown strikingly by comparing figures 5 and 6.

TABLE 5.—*Correlation table, water and oyster scores.—Fall samples (temperature above 5° C.)*

WATER SCORES \ OYSTER SCORES	0	1	2	3	4	5	14	23	32	41	50	140	230	320	410	500+	Total
0			1														1
1				1													1
2																	
3		1					1										2
4		1	1					1									3
5											1	1					2
14		1				2		1	1								5
23								1	2	1			1				5
32								4	2		1			1			8
41				1				3	1								5
50																	
140																	
230																	
320																	
410																	
500+																	
Total	----	3	2	2	----	2	1	10	6	1	2	1	1	1	-----	-----	32

TABLE 6.—*Correlation table, water and oyster MPN's.—Fall samples (temperature above 5° C.)*

WATER MPN's \ OYSTER MPN's	Under 20	20–39	40–79	80–159	160–319	320–639	640–1,279	1,280–2,559	2,560–5,119	5,120–10,239	10,240–18,000+	Total
Under 20			1									1
20–39				1								1
40–79												
80–159		2	1		1	1						5
160–319					1		1	1	1			4
320–639		1			1	3	2			1		8
640–1,279						4	2	1		1		8
1,280–2,559				1	1	1	2					5
2,560–5,119												
5,120–10,239												
10,240–18,000+												
Total	------	3	2	2	4	9	7	2	1	2	--------	32

TABLE 7.—*Correlation table, water and oyster scores—Winter samples (temperature 5° C., or lower)*

WATER SCORES	OYSTER SCORES																
	0	1	2	3	4	5	14	23	32	41	50	140	230	320	410	500+	Total
0	1	1		1													3
1	2	1										1				2	6
2	5	1	1	1													8
3	2	2		1			1										6
4	5		1		2	1	2	2					1				14
5	4	3	1	3	2	1	1	1									16
14	2	1	2	2	1		3			1		1		1			14
23	2	1		3			1				1						8
32	2	1	1		1		1									1	7
41			1												1		2
50	1	1	1	1		1											5
140					1												1
230																	
320																	
410																	
500+		1															1
Total	26	13	8	12	7	3	9	3		1	1	2	1	1	1	3	91

TABLE 8.—*Correlation table, water and oyster MPN's—Winter samples (temperature 5° C., or lower)*

WATER MPN's	OYSTER MPN's											
	Under 20	20–39	40–79	80–159	160–319	320–639	640–1,279	1,280–2,559	2,560–5,119	5,120–10,239	10,240–18,000+	Total
Under 20	1	1		1								3
20–39	2	1							1		2	6
40–79	5	1	1	1						1		9
80–159	7	2	1	3	1	5						19
160–319	4	3	2	4	2	2		1				18
320–639	4	2	3	5		3		1	1	1		20
640–1,279	2	2		1	1						1	7
1,280–2,559	1	1	2	1	1						1	7
2,560–5,119				1								1
5,120–10,239												
10,240–18,000+		1										1
Total	26	14	9	17	5	10		2	2	2	4	91

TABLE 9.—*Correlation table, oyster and water scores—Spring samples (temperature above 5° C.)*

WATER SCORES \ OYSTER SCORES	0	1	2	3	4	5	14	23	32	41	50	140	230	320	410	500+	Total
0	1	4	1	·													6
1	4	1	2	1													8
2	3	1															4
3		1	2		1				1								5
4		1	3			1											5
5	3	1	1	1		1	1	1									9
14	3	2	1	2			1				1						10
23	1					1											2
32	1			1													2
41					2												2
50			1		1	1	1										4
140					1						1						2
230																	
320																	
410																	
500+																	
Total	16	11	11	5	5	4	3	1	1	----	2	-----	-----	-----	-----	-----	59

TABLE 10.—*Correlation table, oyster and water MPN's—Spring samples (temperature above 5°C.)*

WATER MPN'S \ OYSTER MPN'S	Under 20	20-39	40-79	80-159	160-319	320-639	640-1,279	1,280-2,559	2,560-5,119	5,120-10,239	10,240-18,000+	Total
Under 20	1	4	1									6
20-39	4	1	2	1								8
40-79	3	1										4
80-159		2	5	1	1	1						10
160-319	3	1	1	1	1	2						9
320-639	4	2	1	2	2			1				12
640-1,279	1			1								2
1,280-2,559			1	3	1	1						6
2,560-5,119				1				1				2
5,120-10,239												
10,240-18,000+												
Total	16	11	11	10	5	4	------	2	------	--------	--------	59

The influence of temperature on the relation between bacterial contamination of oysters and that of overlying water is indicated in table 11, which shows for each temperature range the number of instances in which the oyster liquor showed contamination, less than, equal to, or greater than that of the corresponding water sample.

TABLE 11.—*Frequency of occurrence of oyster MPN (1) less than, (2) equal to, and (3) greater than MPN of corresponding water samples in various temperature ranges*

Temperature, ° C.	Number of pairs	Number of samples showing oyster MPN			Percent oyster samples less than water samples
		Less than water MPN	Greater than water MPN	Same as water MPN	
0 and under	15	12	2	1	87
0.1 to 1	29	24	4	1	86
1.1 to 2	16	10	3	3	81
2.1 to 3	23	15	7	1	70
3.1 to 4	10	5	5	0	50
4.1 to 5	9	5	4	0	55
5.1 to 6	16	11	4	1	76
6.1 to 7	7	5	1	1	86
7.1 to 8	5	5	0	0	100
8.1 to 9	8	3	5	0	37
9.1 to 10	22	13	8	1	64
10.1 to 11	5	5	0	0	100
11.1 to 12	14	10	3	1	79
12.1 to 14	3	2	1	0	67
Total	182				

In most of the temperature ranges the number of observations is small and there is a good deal of irregularity in the relationship of oyster to water samples. When the observations are grouped in greater temperature ranges, the relationship becomes more regular, as shown in the following:

Temperature range	Number of observations [1]	Percent of oyster samples showing MPN coli-aerogenes less than water samples
2° C. and under	55	83.5
2.1°–7°	62	66
7.1°–14°	55	65

[1] Exclusive of pairs in which water sample and oyster sample gave identical results.

According to the above summary, the tendency of the oyster score to be less than the water score is most marked at temperatures under 2° C.

SUMMARY

1. From a study of water samples in shellfish growing areas of Narragansett Bay, it is apparent that the quality of the water is better in winter and early spring than it is in the late fall.

2. Just as the quality of the water is better in winter and spring than in the fall, so also does the quality of the oysters tend to improve. This tendency is perhaps more marked in the case of the oysters than in the case of the water. It should be noted, however, that the oyster results are likely to be more erratic in that excessively high scores are likely to occur rather frequently along with low scores.

3. There is a general tendency in northern oyster-growing areas during the marketing season for oyster scores to increase as water scores increase, and vice versa, when viewed broadly. In individual comparisons, differences may be extreme.

4. A marked improvement in the quality of oysters occurs within about 1° C. of the freezing point. This improvement was much more consistent at these lower ranges of temperature than at other cold-weather ranges.

ACKNOWLEDGMENTS

Acknowledgment is made of valuable assistance rendered by Dr. W. H. Frost, of the Johns Hopkins School of Public Health and Hygiene, and to Asst. Surg. Gen. C. E. Waller and Sanitary Engineer R. E. Tarbett, of the United States Public Health Service.

Appendix

TABLE A.—*Combinations of fermentation tubes results from which each value of the standard score may be derived, and the most probable number (of coli-acrogenes per 100 cc) corresponding to each combination when tests are made in five tubes of each indicated amount*

Score and index (=score×20)	Number of positives in each amount			MPN	Score and index (=score×20)	Number of positives in each amount			MPN
	1 cc	0.1 cc	0.01 cc			1 cc	0.1 cc	0.01 cc	
0	0	0	0	[1]0–20		4	0	0	[1]130
1 (index=20)	1	0	0	[1]20		3	1	0	[1]110
	0	1	0	[1]20		3	0	1	[1]110
	0	0	1	20		2	2	0	90
2 (index=40)	2	0	0	[1]50		2	0	2	90
	1	1	0	[1]40		2	1	1	90
	1	0	1	40		1	3	0	80
	0	2	0	40	4 (index=80)	1	0	3	80
	0	1	1	40		1	2	1	80
	0	0	2	40		1	1	2	80
3 (index=60)	3	0	0	[1]80		0	4	0	80
	2	1	0	[1]70		0	3	1	70
	2	0	1	60		0	2	2	80
	1	2	0	60		0	1	3	70
	1	1	1	60		0	0	4	70
	1	0	2	60		5	0	0	[1]250
	0	3	0	60		4	1	0	[1]170
	0	2	1	60	5 (index=100)	4	0	1	170
	0	1	2	60		3	2	0	140
	0	0	3	60		3	1	1	140

[1] Indicates combinations actually observed.

TABLE A.—*Combinations of fermentation tubes results from which each value of the standard score may be derived, and the most probable number (of coli-aerogenes per 100 cc) corresponding to each combination when tests are made in five tubes of each indicated amount*—Continued

Score and index (=score×20)	Number of positives in each amount			MPN	Score and index (=score×20)	Number of positives in each amount			MPN
	1 cc	0.1 cc	0.01 cc			1 cc	0.1 cc	0.01 cc	
	3	0	2	[1] 140		4	3	1	300
	2	3	0	120		4	2	2	300
	2	2	1	120		4	1	3	300
	2	1	2	120		4	0	4	300
	2	0	3	120		3	5	0	250
	1	4	0	110		3	4	1	250
	1	3	1	100		3	3	2	250
	1	2	3	100		3	2	3	250
5 (index=100)	1	1	3	100		3	1	4	250
	1	0	4	100		3	0	5	250
	0	5	0	100	32 (index=640)	2	5	1	200
	0	4	1	100		2	4	2	200
	0	3	2	90		2	3	3	190
	0	2	3	90		2	2	4	200
	0	1	4	90		2	1	5	190
	0	0	5	90		1	5	2	170
	5	1	0	[1] 350		1	4	3	170
	5	0	1	300		1	3	4	170
	4	2	0	[1] 200		1	2	5	170
	4	1	1	200		0	5	3	150
	4	0	2	200		0	4	4	150
	3	3	0	170		0	3	5	150
	3	2	1	170		5	4	0	[1] 1,300
	3	1	2	170		5	3	1	[1] 1,100
	3	0	3	160		5	2	2	950
	2	4	0	140		5	1	3	850
	2	3	1	140		5	0	4	750
	2	2	2	140		4	5	0	400
14 (index=280)	2	1	3	150		4	4	1	400
	2	0	4	140		4	3	2	400
	1	5	0	130		4	2	3	360
	1	4	1	130		4	1	4	350
	1	3	2	120		4	0	5	350
	1	2	3	120		3	5	1	300
	1	1	4	120	41 (index=820)	3	4	2	300
	1	0	5	120		3	3	3	300
	0	5	1	120		3	2	4	300
	0	4	2	120		3	1	5	300
	0	3	3	110		2	5	2	230
	0	2	4	110		2	4	3	250
	0	1	5	110		2	3	4	230
	5	2	0	[1] 500		2	2	5	250
	5	1	1	[1] 450		1	5	3	200
	5	0	2	[1] 200		1	4	4	200
	4	3	0	[1] 250		1	3	5	190
	4	2	1	[1] 250		0	5	4	170
	4	1	2	250		0	4	5	170
	4	0	3	250		5	5	0	[1] 2,500
	3	4	0	200		5	4	1	[1] 1,700
	3	3	1	200		5	3	2	1,400
	3	2	2	200		5	2	3	1,200
	3	1	3	200		5	1	4	1,100
	3	0	4	200		5	0	5	900
	2	5	0	170		4	5	1	450
23 (index=460)	2	4	1	170		4	4	2	450
	2	3	2	170		4	3	3	450
	2	2	3	170		4	2	4	420
	2	1	4	170	50 (index=1,000)	4	1	5	400
	2	0	5	160		3	5	2	330
	1	5	1	150		3	4	3	330
	1	4	2	150		3	3	4	350
	1	3	3	150		3	2	5	350
	1	2	4	150		2	5	3	280
	1	1	5	140		2	4	4	280
	0	5	2	140		2	3	5	280
	0	4	3	130		1	5	4	230
	0	3	4	130		1	4	5	250
	0	2	5	130		0	5	5	190
	5	3	0	[1] 800		5	5	1	[1] 3,500
	5	2	1	[1] 700		5	4	2	[1] 2,500
32 (index=640)	5	1	2	600	140 (index=2,800)	5	3	3	1,750
	5	0	3	600		5	2	4	1,500
	4	4	0	[1] 350		5	1	5	1,200

[1] Indicates combinations actually observed.

TABLE A.—*Combinations of fermentation tubes results from which each value of the standard score may be derived, and the most probable number (of coli-aerogenes per 100 cc) corresponding to each combination when tests are made in five tubes of each indicated amount*—Continued

Score and index (=score×20)	Number of positives in each amount			MPN	Score and index (=score×20)	Number of positives in each amount			MPN
	1 cc	0.1 cc	0.01 cc			1 cc	0.1 cc	0.01 cc	
140 (index=2,800)	4	5	2	550	230 (index=4,600)	4	4	4	600
	4	4	3	500		4	3	5	600
	4	3	4	500		3	5	4	400
	4	2	5	500		3	4	5	400
	3	5	3	360		2	5	5	350
	3	4	4	360	320 (index=6,400)	5	5	3	[1] 9,000
	3	3	5	400		5	4	4	3,500
	2	5	4	300		5	3	5	2,500
	2	4	5	300		4	5	4	700
	1	5	5	260		4	4	5	700
230 (index)=4,600	5	5	2	[1] 6,000		3	5	5	450
	5	4	3	[1] 3,000	410 (index=8,200)	5	5	4	[1] 16,000
	5	3	4	2,000		5	4	5	4,500
	5	2	5	1,750	500+(index=10,000+)	5	5	5	[1] 18,000+
	4	5	3	650					

[1] Indicates combinations actually observed.

SUMMARY

Tubes	Score	Number MPN values		Tubes	Score	Number MPN values	
		Theoretically possible	Actually encountered			Theoretically possible	Actually encountered
0	0	1	1	8	32	27	3
1	1	3	2	9	41	25	3
2	2	6	2	10	50	21	2
3	3	10	2	11	140	15	2
4	4	15	3	12	230	10	2
5	5	21	3	13	320	6	1
6	14	25	3	14	410	3	1
7	23	27	4	15	500+	1	1

TABLE B.—*Water and oyster examinations arranged chronologically by stations*

STATION A—1,500 YARDS NORTH OF CONIMICUT POINT

Date	Temperature (water) °C.	Oyster results				Water results		
		Liquor		Meats		Score	MPN	Density
		Score	MPN	Score	MPN			
Nov. 21, 1927	10	23	250			41	1,600	1.019
Jan. 5, 1928	2	3	70					
Jan. 9, 1928	2.5	500+	18,000+			41	1,600	18
Jan. 9, 1928	2.5	410	16,000					18
Jan. 10, 1928	3	140	3,500			1	20	19
Jan. 11, 1928	3	5	250					18
Jan. 12, 1928	3	4	130					
Jan. 16, 1928	2	14	350			14	350	20
Jan. 17, 1928	3.5	0						19
Jan. 18, 1928	4	410	16,000					18
Jan. 19, 1928	2.5	14	200					18
Jan. 23, 1928	1.5	1	20					
Jan. 24, 1928	0	1	20					18
Jan. 25, 1928	3	0						19
Jan. 26, 1928	2	0						19
Jan. 30, 1928	−0.5	23	500					19
Jan. 31, 1928	−0.5	2	50					20
Feb. 1, 1928	−0.5	1	20					16
Feb. 2, 1928	1	1	20					20

TABLE B.—*Water and oyster examinations arranged chronologically by stations*—Continued

STATION A—1,500 YARDS NORTH OF CONIMICUT POINT—Continued

Date	Temperature (water) ° C.	Oyster results				Water results		
		Liquor		Meats		Score	MPN	Density
		Score	MPN	Score	MPN			
Feb. 6, 1928	0	0				23	500	18
Feb. 7, 1928	0	4	110			4	130	19
Feb. 8, 1928	2	140	3,500			14	350	19
Feb. 13, 1928	1	3	80			50	2,500	20
Feb. 14, 1928	2	4	140			23	800	19
Feb. 15, 1928	2	3	80			3	80	20
Feb. 16, 1928	4	1	20			5	250	16
Feb. 20, 1928	2	0		0		3	80	21
Feb. 21, 1928	1	3	70	0		5	250	
Feb. 22, 1928	0	1	20	0		5	250	18
Feb. 27, 1928	1	4	110	32	700	5	170	19
Feb. 28, 1928	1	0		0		4	130	18
Feb. 29, 1928	1	4	130	0		5	170	19
Mar. 1, 1928	2	0		0		32	800	18
Mar. 5, 1928	1	1	20	0		3	80	20
Mar. 6, 1928	0	2	50	3	80	14	350	20
Mar. 7, 1928	1	1	20	2	50	50	1,700	20
Mar. 8, 1928	1	0		1	20	14	350	20
Apr. 19, 1928	7	1	20			4	130	225

STATION B—2,000 YARDS SOUTH OF CONIMICUT POINT

Nov. 23, 1927	10	140	3,500			5	250	1.019
Nov. 30, 1927	10	2	50			.1	2	20
Dec. 12, 1927	5	23	500			41	1,600	18
Jan. 4, 1928	1	2	50			14	350	19
Jan. 5, 1928	2	3	80					20
Jan. 9, 1928	2.5	5	250					18
Jan. 11, 1928	3	4	130			14	350	20
Jan. 12, 1928	3	3	80			14	350	
Jan. 16, 1928	2	2	50					20
Jan. 17, 1928	3	2	50					19
Jan. 18, 1928	4	140	3,500					18
Jan. 19, 1928	2.5	5	250					18
Jan. 23, 1928	1.5	0						19
Jan. 25, 1928	3	0				1.4	35	19
Jan. 31, 1928	−0.5	1	20					18
Feb. 1, 1928	−0.5	1	20					16
Feb. 2, 1928	1	1	20					19
Apr. 10, 1928	6.5	0		1	20	5	250	20
Apr. 25, 1928	7.2	2	50			4	130	22
Apr. 25, 1928	8	0				14	350	19

STATION C—1,500 YARDS NORTHEAST OF ROCKY POINT

Nov. 23, 1927	10	23	500			14	350	19
Nov. 23, 1927	10	41	1,300			23	600	19
Nov. 30, 1927	10	3	80			1	20	20
Nov. 30, 1927	10	2	50			4	130	20
Dec. 12, 1927	6	5	250			14	250	19
Jan. 4, 1928	1	50	2,500			23	500	19
Jan. 5, 1928	2	0				14	350	20
Jan. 5, 1928	2	32	800					
Jan. 9, 1928	2.5	14	200			14	200	18
Jan. 10, 1928	3	500+	18,000+			1.4	35	20
Jan. 11, 1928	3	0						
Jan. 12, 1928	3	2	50					
Jan. 16, 1928	3	1	20					
Jan. 17, 1928	4	0						
Jan. 18, 1928	4	410	16,000					
Jan. 19, 1928	2.5	4	90					
Jan. 23, 1928	1.5	1	20					
Jan. 23, 1928	1.5	0						
Jan. 25, 1928	3	0				0		
Jan. 25, 1928	3	3	80			0		
Jan. 30, 1928	−2.5	4	130			4	130	1.019

TABLE B.—*Water and oyster examinations arranged chronologically by stations*—Continued

STATION C—1,500 YARDS NORTHEAST OF ROCKY POINT—Continued

Date	Temperature (water) ° C.	Oyster results				Water results		
		Liquor		Meats		Score	MPN	Density
		Score	MPN	Score	MPN			
Jan. 31, 1928	−0.5	0						
Feb. 1, 1928	−0.5	0						
Feb. 2, 1928	1	0						
Apr. 16, 1928	7	2	50			1	20	235
Apr. 23, 1928	6.7	0				32	800	22
Apr. 26, 1928	8	0				2	50	22
May 1, 1928	8.9	14	200			14	350	175
May 2, 1928	11.1	3	80			14	350	12
May 3, 1928	11.6	2	50			50	2,500	17
May 8, 1928	11.1	5	170			23	500	205
May 10, 1928	10	0				5	250	20
May 14, 1928	10	2	50			0	0	23
May 15, 1928	12.2	1	20			0	0	22
May 16, 1928	14.4	1	20			0	0	22
May 17, 1928	13.4	2	50			3	80	22
May 21, 1928	12	2	50			3	80	22
STATION D—500 FEET NORTH OF PATIENCE ISLAND								
Jan. 4, 1928	1	14	200			32	900	19
Jan. 4, 1928	1	14	200			5	250	19
Jan. 5, 1928	2	0				2.3	50	20
Jan. 10, 1928	3	41	1,300					
Jan. 11, 1928	3	0						
Jan. 12, 1928	3	3	80			14	350	
Jan. 16, 1928	3	1	20					
Apr. 12, 1928	6	1	20			14	350	22
Apr. 18, 1928	6	0				1	20	24
Apr. 26, 1928	7.5	0				2	50	225
May 1, 1928	8.3	2	50			1	20	215
May 2, 1928	11.1	0				1	20	20
May 3, 1928	11.6	2	50			3	50	17
May 8, 1928	11.1	14	500			5	170	20
May 10, 1928	10	3	80			5	250	21
May 14, 1928	10.5	1	20			2	50	23
May 15, 1928	12	1	20			0	0	20
May 16, 1928	12.2	0				0	0	23
May 17, 1928	13.4	0				2	50	22
May 21, 1928	12	5	170			4	130	22
STATION E—200 FEET WEST OF DEYER ROCK								
Nov. 30, 1927	10	1	20			3	80	1.020
Dec. 7, 1927	7	32	500			23	600	21
Dec. 12, 1927	6	23	350			32	900	19
Jan. 5, 1928	2	1	20			3	80	20
Jan. 9, 1928	2.5	3	80					18
Jan. 10, 1928	3	50	2,500					20
Jan. 12, 1928	3	14	350					
Jan. 16, 1928	2.5	0						20
Feb. 6, 1928	1	3	80	4	110	23	500	20
Feb. 7, 1928	0	14	350	2	40	4	130	20
Apr. 23, 1928	4.5	14	350			3	80	23
May 1, 1928	8.9	0				14	350	18
May 2, 1928	11.6	0				5	250	145
May 3, 1928	11.6	0				23	500	16
May 8, 1928	10	3	80			1	20	22
May 10, 1928	9.4	1	20			1	20	225

TABLE B.—*Water and oyster examinations arranged chronologically by stations*—Continued

STATION F—100 FEET WEST OF RUMSTICK SHOAL LIGHT BUOY

Date	Temperature (water) ° C.	Oyster results				Water results		
		Liquor.		Meats		Score	MPN	Density
		Score	MPN	Score	MPN			
Nov. 22, 1927	9	50	1,700	-------	-------	32	900	20
Nov. 30, 1927	10	1	20	-------	-------	4	130	20
Dec. 7, 1927	6	14	350	-------	-------	3.2	80	-------
Dec. 12, 1927	6	23	500	-------	-------	23	600	19
Jan. 9, 1928	2.5	5	170	-------	-------	4.5	130	18
Jan. 10, 1928	3	500+	18,000+	-------	-------	32	900	20
Jan. 12, 1928	3	5	170	-------	-------	-------	-------	-------
Jan. 16, 1928	2.5	2	50	-------	-------	4.1	130	19
Feb. 6, 1928	0.5	0	-------	3	80	5	170	19
Feb. 7, 1928	0	0	-------	0	-------	5	250	20
Feb. 13, 1928	1	5	250	320	9,000	5	250	21
Feb. 13, 1928	1	1	20	1	20	-------	-------	21
Feb. 14, 1928	2	1	20	0	-------	1	20	20
Feb. 14, 1928	2	1	20	0	-------	-------	-------	20
Feb. 15, 1928	3	0	-------	5	170	2	50	20
Feb. 15, 1928	3	1	20	0	-------	-------	-------	20
Feb. 16, 1928	3	0	-------	500+	18,000+	50	2,500	18
Feb. 16, 1928	3	1	20	23	500	-------	-------	18
Feb. 20, 1928	2	1	20	2	50	2	50	21
Feb. 21, 1928	0.5	0	-------	3	70	4	130	-------
Feb. 22, 1928	0	0	-------	0	-------	2	50	19
Feb. 29, 1928	1	23	500	32	700	4	130	20
Mar. 1, 1928	1.5	0	-------	0	-------	1	20	20
Mar. 5, 1928	1	0	-------	3	80	2	50	20
Mar. 6, 1928	0	3	80	1	20	2	50	20
Mar. 7, 1928	1	500+	18,000+	500+	18,000+	1	20	20
Mar. 8, 1928	1	1	20	0	-------	0	-------	1.020
Mar. 15, 1928	4	1	20	0	-------	500+	18,000+	19
Mar. 20, 1928	3	0	-------	0	-------	4	130	20
Mar. 21, 19 8	3	14	350	5	250	23	500	21
Mar. 22, 1928	3.5	23	450	1	20	5	250	23
Mar. 26, 1928	6.25	0	-------	0	-------	1	20	215
Mar. 27, 1928	5.5	4	130	0	-------	3	80	22
Mar. 28, 1928	5	50	2,500	41	1,300	14	350	21
Mar. 29, 1928	5	1	20	0	-------	5	170	195

STATION G—1,500 YARDS SOUTHWEST OF BARRINGTON BEACH

Nov. 22, 1927	9	50	2,500	-------	-------	5	250	20
Nov. 22, 1927	9	320	9,000	-------	-------	32	900	20
Nov. 23, 1927	10.5	32	700	-------	-------	32	900	18
Nov. 29, 1927	10.5	32	800	-------	-------	41	1,600	19
Nov. 29, 1927	10.5	23	500	-------	-------	-------	-------	19
Nov. 29, 1927	10.5	14	200	-------	-------	32	900	19
Nov. 29, 1927	10.5	23	500	-------	-------	-------	-------	19
Nov. 30, 1927	10	23	250	-------	-------	4	130	20
Dec. 7, 1927	6	32	800	-------	-------	14	250	185
Dec. 7, 1927	6	5	250	-------	-------	14	350	-------
Dec. 7, 1927	6	23	500	-------	-------	32	900	18
Dec. 12, 1927	6	32	800	-------	-------	32	900	19
Jan. 4, 1928	1	5	250	-------	-------	-------	-------	-------
Jan. 9, 1928	2.5	5	170	-------	-------	-------	-------	18
Jan. 10, 1928	3	410	16,000	-------	-------	-------	-------	-------
Jan. 12, 1928	3	3	80	-------	-------	-------	-------	-------
Jan. 16, 1928	3	2	50	-------	-------	-------	-------	20
Feb. 6, 1928	0.5	0	-------	-------	-------	-------	-------	17
Feb. 7, 1928	0	0	-------	-------	-------	-------	-------	20
Mar. 15, 1928	4	4	130	0	-------	140	3,500	19
Mar. 20, 1928	3	0	-------	0	-------	32	800	20
Mar. 21, 1928	4	14	350	230	3,000	14	200	21
Mar. 22, 1928	3.5	14	350	32	800	4	130	23
Mar. 27, 1928	6	1	20	0	-------	3	80	21
Mar. 28, 1928	5	32	800	3	80	3	80	21
Mar. 29, 1928	5	2	50	0	-------	5	250	20

TABLE B.—*Water and oyster examinations arranged chronologically by stations*—Continued

STATION H—1,500 YARDS SOUTH OF NAYAT POINT

Date	Temperature (water) °F.	Oyster results				Water results		
		Liquor		Meats				
		Score	MPN	Score	MPN	Score	MPN	Density
Nov. 22, 1927	48.2	230	6,000			23	600	21
Nov. 23, 1927	50	23	450			32	900	19
Nov. 29, 1927	50.9	4	130			41	1,600	17
Nov. 29, 1927	50.9	3	70					17
Nov. 30, 1927	50	1	20			14	350	20
Dec. 7, 1927	42.8	32	800			23	600	1.0185
Dec. 12, 1927	42.8	32	800			41	1,600	19
Jan. 4, 1928	33.8	32	800					
Jan. 5, 1928	35.6	3	70					
Jan. 9, 1928	36.5	14	200					
Jan. 10, 1928	37.4	230	6,800					20
Jan. 12, 1928	37.4	4	130					
Jan. 16, 1928	37.4	2	50					18
Jan. 17, 1928	38.3	23	500	140	3,500	5	170	19
Jan. 17, 1928	38.3	3	80					19
Jan. 17, 1928	38.3	14	200					19
Jan. 18, 1928	40.1	140	3,500	320	9,000	4.1	40	19
Jan. 18, 1928	40.1	410	16,000	32	800			19
Jan. 19, 1928	37.4	1	20	0		14	350	20
Jan. 19, 1928	37.4	2	50	3	70			20
Jan. 23, 1928	34.7	3	70	1	20			19
Jan. 23, 1928	34.7	1	20	0				19
Jan. 24, 1928	32	0		0		4.1	110	19
Jan. 24, 1928	32	0		0				19
Jan. 26, 1928	35.6	0		0		5	170	19
Jan. 26, 1928	35.6	0		0				19
Jan. 30, 1928	27.5	0		0				19
Jan. 30, 1928	27.5	2	50	1	20	32	800	19
Jan. 31, 1928	31	2	50	0		5	250	18
Jan. 31, 1928	31	3	80	3	80			18
Feb. 1, 1928	31	1	20	3	80	50	2,500	16
Feb. 1, 1928	31	3	80	2	50			15
Feb. 2, 1928	32.8	1	20	0		32	800	19
Feb. 2, 1928	32.8	1	20	4	130			19
Feb. 6, 1928	32	3	80					18
Feb. 7, 1928	32	0						19
Feb. 8, 1928	35.6	23	500	5	250	4	130	20
Feb. 13, 1928	33.8	2	50					20
Feb. 14, 1928	35.6	14	200					19
Feb. 15, 1928	35.6	3	80					20
Feb. 16, 1928	39.2	0						
Feb. 20, 1928	36.5	1	20	3	80	5	250	21
Feb. 21, 1928	33.8	3	80	0		5	250	
Feb. 22, 1928	32	0		0		3	80	19
Feb. 27, 1928	33.8	2	50	0		2	50	19
Feb. 28, 1928	33.8	0		0		23	500	18
Feb. 29, 1928	33.8	1	20	1	20	23	500	19
Mar. 1, 1928	35.6	3	80	0		23	500	18
Mar. 5, 1928	35.6	0		50	2,500	2	50	20
Mar. 6, 1928	32	0		50	2,500	4	130	1.020
Mar. 7, 1928	33.8	2	50	0		41	1,300	20
Mar. 8, 1928	33.8	0		3	80	14	350	20
Mar. 12, 1928	35.6	3	80	0		23	500	19
Mar. 15, 1928	39.2	5	250	4	130	50	1,700	18
Mar. 20, 1928	37.4	3	70	0		14	350	20
Mar. 21, 1928	39.2	320	9,000	320	9,000	14	350	20
Mar. 22, 1928	38.3	0		0		5	170	23
Mar. 27, 1928	42.8	0		0		1	20	21
Mar. 28, 1928	41.0	14	350	23	500	50	2,500	21
Mar. 29, 1928	41.9	0		1	20	14	350	21
Apr. 17, 1928	44.0	2	50			4	130	235
Apr. 24, 1928	45.0	4	130			41	1,300	17
Apr. 30, 1928	47.3	50	2,500			140	3,500	11
May 1, 1928	50	4	130			41	1,300	215
May 2, 1928	52.8	4	130			50	1,400	195
May 3, 1928	52.0	5	170			50	2,500	14
May 7, 1928	50	4	110			140	3,500	18
May 8, 1928	52	3	80			14	350	20
May 10, 1928	50	3	80			32	800	22
May 14, 1928	50	1	20			14	350	215
May 15, 1928	54	2	50			4	130	205
May 16, 1928	56	1	20			0		22
May 17, 1928	54	23	500			5	250	215
May 21, 1928	51.8	5	170			5	250	25

TABLE B.—*Water and oyster examinations arranged chronologically by stations*—Continued

BULLOCK'S POINT

Date	Temperature (water) ° C.	Oyster results				Water results		
		Liquor		Meats		Score	MPN	Density
		Score	MPN	Score	MPN			
Dec. 12, 1927	5	41	1,300			41	1,600	14
Jan. 4, 1928	1	41	1,300					Q[1]
Jan. 4, 1928	1	41	1,300					Q[1]
May 14, 1928	10.5	3	80			32	800	21Q
May 15 1928	12.2	5	170			41	1,300	20Q
May 16, 1928	14.4	3	350			140	2,500	22Q
May 17, 1928	14	4	130			140	3,500	17Q
May 21, 1928	12	3	80			140	3,500	18Q
May 21, 1928	12	3	80			32	800	18Q

MIDDLE OF BAY

Nov. 23, 1927	10	41	1,300			14	1,600	19

OFF ALLENS HARBOR

Jan. 11, 1928	3	1	20			0.4	13	1.021
Jan. 11, 1928	3	1	20					20
Jan 11, 1928	3	2	80			3.2	80	20

STATION 1-A.—800 YARDS NORTHEAST RHODE ISLAND YACHT CLUB

Jan. 29, 1928	1	32	800	4	170	140	3,500	18
Mar. 1, 1928	2.5	14	500	4	110	230	6,000	16

[1] Q=Quahogs, or hard clams.

DEATHS DURING WEEK ENDED SEPT. 28, 1935

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Sept. 28, 1935	Corresponding week, 1934
Data from 86 large cities of the United States:		
Total deaths	7,141	7,280
Deaths per 1,000 population, annual basis	9.9	10.1
Deaths under 1 year of age	503	560
Death under 1 year of age per 1,000 estimated live births	46	52
Deaths per 1,000 population, annual basis, first 39 weeks of year	11.4	11.4
Data from industrial insurance companies:		
Policies in force	67,628,155	67,147,726
Number of death claims	11,138	11,123
Death claims per 1,000 policies in force, annual rate	8.6	8.6
Death claims per 1,000 policies, first 39 weeks of year, annual rate	9.7	10.0

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended Oct. 5, 1935, and Oct. 6, 1934

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Oct. 5, 1935, and Oct. 6, 1934

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934
New England States:								
Maine	8		5		20		1	0
New Hampshire	1					1	0	0
Vermont	1				10		0	0
Massachusetts	4	13			27	7	4	0
Rhode Island	2	2				2	1	0
Connecticut	5		1	3	31	17	0	0
Middle Atlantic States:								
New York	38	15	[1]7	[1]7	89	36	6	1
New Jersey	14	23	4	10	10	23	1	0
Pennsylvania	52	59			49	215	2	5
East North Central States:								
Ohio	96	67	17	3	32	29	0	2
Indiana	76	48	13	18	15	40	1	1
Illinois	47	32	18	7	12	40	1	3
Michigan	23	10	1		27	32	1	1
Wisconsin	7	2	6	3	43	66	1	2
West North Central States:								
Minnesota	11	10		2	5	30	1	0
Iowa	13	13	10	2	2	15	0	1
Missouri	55	44	37	35	18	32	5	1
North Dakota	6	3		5	8	54	0	0
South Dakota	4	4			1	6	0	0
Nebraska	3	7		2		17	0	0
Kansas	20	12	1	3	4	12	1	0
South Atlantic States:								
Delaware	1	1			33	2	0	0
Maryland [2]	9	13	4	21	2	10	2	0
District of Columbia	15	15					2	0
Virginia	62	74			9	27	2	0
West Virginia	71	68	22	12	5	28	0	0
North Carolina [3]	64	131	7		1	11	1	1
South Carolina [4]	20	17	171	191		5	0	0
Georgia [4]	32	56					0	1
Florida [4]	8	11	1		5	3	0	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Oct. 5, 1935, and Oct. 6, 1934—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934
East South Central States:								
Kentucky	60	129	5	34	13	20	2	0
Tennessee	67	64	----	12	1	2	3	0
Alabama [4]	45	59	5	9	----	21	0	1
Mississippi	23	26	----	----	----	----	0	0
West South Central States:								
Arkansas	29	15	7	5	----	----	1	0
Louisiana	26	10	6	3	2	4	0	1
Oklahoma [5]	21	3	37	17	----	1	3	1
Texas [4]	76	40	61	45	16	13	1	1
Mountain States:								
Montana	----	1	5	4	14	49	0	0
Idaho	1	----	----	----	----	----	0	0
Wyoming	3	1	----	----	11	1	0	0
Colorado	6	13	----	----	10	29	1	0
New Mexico	6	3	1	1	1	----	1	0
Arizona	1	3	17	4	3	2	0	0
Utah [3]	----	----	----	----	----	7	0	0
Pacific States:								
Washington	3	----	----	----	34	62	0	1
Oregon	2	3	19	22	48	10	2	0
California	40	27	18	10	71	55	2	1
Total	1,177	1,147	506	490	682	1,036	49	25
First 40 weeks of year	23,599	25,565	106,981	52,399	699,648	673,320	4,594	1,829

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934
New England States:								
Maine	7	0	13	10	0	0	7	1
New Hampshire	3	0	----	12	0	0	0	1
Vermont	3	0	5	3	0	0	0	1
Massachusetts	99	4	90	69	0	0	3	3
Rhode Island	25	0	4	12	0	0	0	1
Connecticut	22	0	27	11	0	0	2	0
Middle Atlantic States:								
New York	106	6	213	127	0	0	20	34
New Jersey	31	0	37	41	0	0	12	8
Pennsylvania	12	5	211	226	0	0	20	31
East North Central States:								
Ohio	3	12	244	277	2	0	46	34
Indiana	1	1	97	83	1	0	3	12
Illinois	23	8	247	301	1	0	27	43
Michigan	25	16	117	110	1	0	17	30
Wisconsin	2	20	151	181	1	1	8	4
West North Central States:								
Minnesota	4	4	93	39	0	3	0	3
Iowa	3	3	42	28	2	1	5	23
Missouri	2	1	55	50	2	0	11	60
North Dakota	1	1	12	19	1	0	0	5
South Dakota	0	3	22	18	0	1	4	0
Nebraska	1	1	26	20	3	1	0	0
Kansas	0	2	65	23	9	0	12	5
South Atlantic States:								
Delaware	0	0	3	4	0	0	2	4
Maryland [3]	4	0	45	34	0	0	32	9
District of Columbia	5	1	6	16	0	0	2	1
Virginia	7	8	58	81	0	0	25	16
West Virginia	1	6	78	113	0	0	16	46
North Carolina [3]	9	1	57	74	0	0	16	7
South Carolina [4]	1	0	7	7	0	0	7	15
Georgia [4]	0	0	22	17	0	0	13	8
Florida [4]	0	0	3	1	0	0	0	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Oct. 5, 1935, and Oct. 6, 1934—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934	Week ended Oct. 5, 1935	Week ended Oct. 6, 1934
East South Central States:								
Kentucky	11	8	75	94	0	0	145	39
Tennessee	1	4	69	89	0	0	24	39
Alabama [4]	0	0	10	22	0	0	6	9
Mississippi	0	0	15	12	1	0	11	7
West South Central States:								
Arkansas	0	0	7	5	0	0	9	5
Louisiana	0	0	15	9	0	1	7	13
Oklahoma [5]	0	1	19	13	1	0	17	10
Texas [4]	1	5	23	27	0	0	27	38
Mountain States:								
Montana	0	10	52	13	0	0	3	7
Idaho	0	7	2	3	1	0	1	22
Wyoming	0	1	15	3	1	0	0	1
Colorado	0	0	35	52	0	1	4	10
New Mexico	0	0	10	17	0	0	22	7
Arizona	0	6	9	16	0	0	2	5
Utah [2]	0	1	27	12	0	0	2	1
Pacific States:								
Washington	2	47	43	55	5	1	1	2
Oregon	1	3	48	36	0	0	3	3
California	29	51	140	138	1	0	29	17
Total	445	247	2,664	2,626	33	10	623	640
First 40 weeks of year	8,953	6,054	191,698	159,537	5,517	3,898	14,075	16,552

[1] New York City only.
[2] Week ended earlier than Saturday.
[3] Rocky Mountain spotted fever, week ended Oct. 5, 1935, 1 case in North Carolina.
[4] Typhus fever, week ended Oct. 5, 1935, 19 cases, as follows: South Carolina, 2; Georgia, 7; Florida, 1; Alabama, 6; Texas, 3.
[5] Exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
July 1935										
Hawaii Territory	----	7	2	----	4	----	0	----	0	4
August 1935										
Arizona	2	9	24	4	13	----	2	13	0	14
Florida	1	36	2	42	11	3	4	11	0	16
September 1935										
Connecticut	2	9	5	1	23	----	143	84	0	20
Delaware	----	4	6	----	18	----	0	15	0	5
District of Columbia	12	81	1	----	1	----	29	43	0	8
Iowa	1	68	11	7	7	----	15	152	3	27
Maine	----	9	2	----	31	----	61	31	0	10
Pennsylvania	19	113	----	7	119	3	77	496	0	150

July 1935

	Cases
Hawaii Territory:	
Chicken pox	24
Dysentery (amoebic)	1
Leprosy	2
Mumps	22
Typhus fever	1
Whooping cough	89

August 1935

	Cases
Arizona:	
Chicken pox	22
Conjunctivitis, acute contagious	2
Dysentery	18
German measles	2
Impetigo contagiosa	2
Leprosy	1
Mumps	33
Trachoma	18
Undulant fever	3
Whooping cough	27
Florida:	
Chicken pox	2
Dengue	1
Dysentery (amoebic)	2
Dysentery (bacillary)	1
Mumps	21
Typhus fever	1
Undulant fever	3
Whooping cough	30

September 1935

	Cases
Actinomycosis:	
Pennsylvania	1
Anthrax:	
Pennsylvania	1
Chicken pox:	
Connecticut	30
District of Columbia	7
Iowa	28
Maine	23
Pennsylvania	216
Conjunctivitis:	
Connecticut	1
Dysentery:	
Connecticut (bacillary)	92
Iowa (amoebic)	1
Epidemic encephalitis:	
Connecticut	3
Pennsylvania	3
German measles:	
Connecticut	4
Iowa	2
Maine	16
Pennsylvania	24
Impetigo contagiosa:	
Iowa	4
Lead poisoning:	
Connecticut	1
Mumps:	
Connecticut	25
Delaware	1
Iowa	66
Maine	88
Pennsylvania	277
Ophthalmia neonatorum:	
Pennsylvania	7

September 1935—Continued

	Cases
Paratyphoid fever:	
Connecticut	19
Rabies in animals:	
Connecticut	1
Rocky Mountain spotted fever:	
Connecticut	1
Iowa	2
Scabies:	
Iowa	2
Septic sore throat:	
Connecticut	5
Maine	1
Tetanus:	
Connecticut	1
Pennsylvania	1
Trachoma:	
Pennsylvania	1
Trichinosis:	
Connecticut	1
Undulant fever:	
Connecticut	2
Iowa	6
Maine	1
Pennsylvania	4
Vincent's infection:	
Iowa	1
Maine	2
Whooping cough:	
Connecticut	174
Delaware	14
District of Columbia	12
Iowa	51
Maine	49
Pennsylvania	920

WEEKLY REPORTS FROM CITIES

City reports for week ended Sept. 28, 1935

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table. Weekly reports are received from about 700 cities, from which the data are tabulated and filed for reference.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Maine:											
Portland	0	1	0	0	1	0	0	1	0	0	20
New Hampshire:											
Concord	0	------	0	0	0	0	0	1	0	0	8
Nashua	0	------	------	0	------	0	0	------	0	0	------
Vermont:											
Barre	0	------	0	0	0	0	0	0	0	0	0
Burlington	0	------	0	0	0	0	0	0	0	0	11
Rutland	0	------	0	0	0	2	0	0	0	1	7
Massachusetts:											
Boston	3	------	0	6	15	9	0	5	1	9	181
Fall River	0	------	0	0	0	1	0	0	0	4	21
Springfield	0	------	0	0	1	2	0	0	0	4	25
Worcester	0	------	0	0	4	11	0	2	0	0	45
Rhode Island:											
Pawtucket	0	------	0	0	0	0	0	0	0	0	14
Providence	0	----	0	1	4	7	0	3	0	8	47
Connecticut:											
Bridgeport	0	------	0	0	0	0	0	1	0	1	33
Hartford	0	------	0	0	0	4	0	6	1	6	32
New Haven	0	------	0	0	3	0	0	0	0	4	36
New York:											
Buffalo	0	------	0	3	8	16	0	9	2	24	118
New York	20	15	2	16	80	36	0	76	8	140	1,249
Rochester	0	------	0	0	5	2	0	0	0	5	60
Syracuse	0	------	0	2	4	6	0	2	0	10	40
New Jersey:											
Camden	1	------	0	1	0	1	0	1	3	0	31
Newark	0	5	1	0	5	5	0	5	2	33	82
Trenton	0	------	0	0	1	2	0	3	0	2	39

City reports for week ended Sept. 28, 1935—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Pennsylvania:											
Philadelphia	5	3	3	6	8	28	0	21	11	61	382
Pittsburgh	5	3	2	2	15	26	0	8	0	27	122
Reading	1	------	0	0	2	1	0	1	0	1	35
Scranton	3	------	-------	0	0	4	1	-------	0	1	--------
Ohio:											
Cincinnati	9	------	0	0	5	6	0	4	1	3	110
Cleveland	1	4	0	0	14	7	0	10	5	35	163
Columbus	5	------	0	0	1	8	0	2	0	0	83
Toledo	1	1	1	2	2	4	0	2	1	7	56
Indiana:											
Anderson	0	------	0	0	0	1	0	1	1	2	6
Fort Wayne	6	------	0	0	3	4	0	1	0	1	30
Indianapolis	5	------	0	0	9	14	0	4	1	21	87
Muncie	1	------	0	0	1	2	0	0	0	0	9
South Bend	0	------	0	1	1	1	0	0	0	0	22
Terre Haute	0	------	0	0	0	0	0	0	0	0	18
Illinois:											
Alton	0	------	0	0	0	0	0	0	0	0	7
Chicago	15	4	1	9	36	50	0	38	5	132	591
Elgin	0	------	0	0	0	0	0	0	0	0	7
Moline	0	------	0	0	0	1	0	0	0	0	4
Springfield	0	2	0	0	1	24	0	0	0	7	21
Michigan:											
Detroit	7	0	3	5	17	11	0	14	0	102	241
Flint	0	------	0	0	3	6	0	0	1	5	23
Grand Rapids	0	------	0	1	0	1	0	0	0	15	25
Wisconsin:											
Kenosha	0	------	0	0	0	6	0	0	0	3	7
Milwaukee	0	------	0	3	1	23	0	3	1	37	73
Racine	0	------	0	1	1	13	0	0	0	7	13
Superior	1	------	0	1	0	4	0	0	0	0	5
Minnesota:											
Duluth	0	------	0	0	2	3	0	0	0	4	15
Minneapolis	2	------	0	4	0	31	0	0	3	2	92
St. Paul	0	------	0	1	6	2	0	0	0	2	55
Iowa:											
Cedar Rapids	0	------	0	0	0	0	0	0	0	1	--------
Davenport	0	------	-------	0	0	2	0	-------	0	0	--------
Des Moines	1	------	-------	0	-------	2	0	-------	0	0	30
Sioux City	0	------	-------	1	-------	0	0	-------	0	1	--------
Waterloo	3	------	-------	0	-------	8	0	-------	0	1	--------
Missouri:											
Kansas City	0	------	0	0	4	6	0	3	0	0	86
St. Joseph	2	------	0	0	0	1	0	1	0	0	20
St. Louis	7	1	2	3	9	14	0	9	4	3	164
North Dakota:											
Fargo	0	------	0	0	1	1	0	0	0	0	6
Grand Forks	0	------	-------	3	-------	0	0	-------	0	3	--------
Minot	0	------	0	0	0	0	0	0	0	0	5
South Dakota:											
Aberdeen	0	------	-------	0	-------	1	0	-------	0	0	--------
Nebraska:											
Omaha	7	------	0	0	5	3	1	2	0	0	39
Kansas:											
Lawrence	0	------	0	1	0	0	0	0	0	--------	4
Topeka	-------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Wichita	0	------	0	1	0	2	0	0	0	1	33
Delaware:											
Wilmington	0	------	0	0	1	3	0	0	0	8	22
Maryland:											
Baltimore	2	1	1	0	10	6	0	5	2	17	176
Cumberland	1	------	0	0	1	3	0	0	1	0	12
Frederick	0	------	0	0	1	0	0	0	0	0	6
Dist. of Columbia:											
Washington	17	1	1	1	9	14	0	13	2	1	161
Virginia:											
Lynchburg	0	------	0	0	1	1	0	0	0	2	13
Richmond	2	------	0	0	5	0	0	3	1	0	53
Roanoke	3	------	1	0	0	2	0	-------	0	0	19
West Virginia:											
Charleston	4	------	0	0	0	3	0	0	1	0	3
Huntington	1	------	-------	0	-------	6	0	-------	1	0	-------
Wheeling	0	------	0	1	1	2	0	0	1	2	22

City reports for week ended Sept. 28, 1935—Continued

State and city	Diphtheria cases	Influenza cases	Influenza deaths	Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
North Carolina:											
Gastonia	0	------	0	0	0	0	0	0	0	0	2
Raleigh	0	------	0	0	0	0	0	0	0	0	3
Wilmington	0	------	0	0	1	2	0	1	0	0	16
Winston-Salem	2	------	0	0	0	4	0	1	3	0	13
South Carolina:											
Charleston	0	1	0	0	3	2	0	0	3	0	23
Columbia	0	------	0	0	0	0	0	0	0	0	0
Florence	0	------	0	0	0	0	0	1	0	0	11
Greenville	2	------	0	0	0	0	0	0	0	0	9
Georgia:											
Atlanta	9	4	2	0	6	2	0	4	0	0	-------
Brunswick	0	------	0	0	0	0	0	0	0	1	7
Savannah	4	------	0	0	1	1	0	4	0	0	41
Florida:											
Miami	1	------	0	0	0	0	0	2	0	0	27
Tampa	0	------	0	0	2	0	0	1	0	0	19
Kentucky:											
Ashland	2	------	-------	0	-------	1	0	-------	1	2	-------
Covington	0	------	0	0	1	2	0	0	0	0	-------
Lexington	0	------	0	0	0	0	0	0	0	0	18
Louisville	11	1	0	0	2	12	0	3	1	7	61
Tennessee:											
Knoxville	11	0	1	0	1	1	0	3	1	0	28
Memphis	2	------	0	0	3	3	0	4	3	11	67
Nashville	0	------	1	0	0	3	0	2	1	2	48
Alabama:											
Birmingham	1	3	0	0	5	1	0	2	1	1	69
Mobile	4	------	0	0	0	0	0	0	0	0	19
Montgomery	1	------	-------	0	-------	1	0	-------	0	2	-------
Arkansas:											
Fort Smith	0	------	-------	0	-------	0	0	-------	0	2	-------
Little Rock	0	------	0	0	1	3	0	3	0	0	-------
Louisiana:											
Lake Charles	0	------	0	0	0	0	0	0	0	0	5
New Orleans	8	------	1	2	10	1	0	14	0	3	161
Shreveport	1	------	0	0	3	6	0	0	0	0	31
Texas:											
Dallas	7	1	1	0	1	2	0	2	1	6	55
Fort Worth	8	0	-------	0	1	1	0	1	1	3	30
Galveston	0	------	0	0	0	0	0	0	0	0	11
Houston	13	------	0	0	9	1	0	2	2	0	59
San Antonio	3	------	0	0	3	2	0	7	4	0	56
Montana:											
Billings	0	------	1	0	0	1	0	0	0	0	6
Great Falls	0	------	0	0	1	0	0	0	1	4	8
Helena	0	------	0	1	0	0	0	0	0	2	1
Missoula	0	------	0	0	0	9	0	0	0	0	4
Idaho:											
Boise	0	------	0	0	0	1	0	0	0	0	5
Colorado:											
Colorado Springs	0	------	0	0	0	2	0	2	1	6	10
Denver	6	------	1	3	5	13	0	4	1	1	74
Pueblo	-------	------	-------	-------	-------	-------	-------	-------	-------	-------	-------
New Mexico:											
Albuquerque	0	------	0	0	0	1	0	3	3	6	10
Utah:											
Salt Lake City	0	------	0	1	1	22	0	2	0	10	27
Nevada:											
Reno	0	------	0	0	0	1	0	0	0	0	5
Washington:											
Seattle	0	------	1	1	4	5	1	2	2	0	86
Spokane	0	1	1	5	3	1	0	0	0	4	32
Tacoma	0	------	0	0	2	0	0	1	0	0	27
Oregon:											
Portland	0	------	0	7	4	11	0	3	1	0	60
Salem	0	------	-------	0	-------	0	0	-------	0	0	-------
California:											
Los Angeles	7	17	1	9	11	23	0	17	5	18	299
Sacramento	3	1	1	1	1	4	0	1	0	0	23
San Francisco	1	------	0	16	2	17	0	9	1	34	135

City reports for week ended Sept. 28, 1935—Continued

State and city	Meningococcus meningitis		Poliomyelitis cases
	Cases	Deaths	
Vermont:			
Barre	0	0	2
Massachusetts:			
Boston	0	0	49
Fall River			1
Springfield	0	0	1
Worcester	1	1	2
Rhode Island:			
Providence	1	0	15
Connecticut:			
Bridgeport	0	0	7
New Haven	0	0	1
New York:			
New York	7	9	101
New Jersey:			
Newark	0	0	8
Pennsylvania:			
Philadelphia	1	1	4
Illinois:			
Chicago	3	1	7
Springfield	0	1	0
Michigan:			
Detroit	0	0	8
Flint	0	0	1
Grand Rapids	0	0	2
Minnesota:			
Minneapolis	0	0	1
Missouri:			
Kansas City	1	1	0
St. Louis	0	1	0
Maryland:			
Baltimore	1	1	6
District of Columbia:			
Washington	3	2	7
Virginia:			
Lynchburg	0	0	1
Richmond	0	0	3
Kentucky:			
Ashland	0	0	1
Louisville	1	2	2
Tennessee:			
Memphis	0	1	0
Alabama:			
Birmingham	1	0	0
Arkansas:			
Fort Smith	1	0	0
Little Rock	0	0	2
Louisiana:			
New Orleans	1	0	1
Texas:			
Dallas	1	0	0
Fort Worth	0	0	1
Oregon:			
Portland	0	0	1
California:			
Los Angeles	0	1	9
San Francisco	0	0	1

Epidemic encephalitis.—Cases: Worcester, 1; Providence, 1; Kansas City, Mo., 3; St. Louis, 1; New Orleans, 1; San Francisco, 1.

Pellagra.—Cases: Boston, 1; Charleston, S. C., 1; Savannah, 1; Louisville, 1; Birmingham 1; New Orleans, 1; Sacramento, 1; San Francisco, 2.

Typhus fever.—Cases: Charleston, S. C., 1; Florence, S. C., 1; Atlanta, 1; Savannah, 3; Tampa, 1; Montgomery, 2; Dallas, 1; Houston, 1. Deaths: Dallas, 1.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—2 weeks ended September 21, 1935.—During the 2 weeks ended September 21, 1935, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada, as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis		1		4				1		6
Chicken pox				50	74	46	23	6	19	218
Diphtheria		8	7	32	18	9	3	3		80
Dysentery				6	5					11
Erysipelas				6	1	2		1	2	12
Influenza		4			13				6	23
Measles	3	28	3	42	181	6	36	26	83	408
Mumps		35			58	39	212	16	25	385
Paratyphoid fever	4	2			10					16
Pneumonia					6				6	12
Poliomyelitis		2	2	1	18	6	1	51	1	82
Scarlet fever	2	18	5	199	148	28	3	20	24	447
Smallpox									2	2
Trachoma						3			6	9
Tuberculosis	5	22	13	138	85	8	7	5	22	305
Typhoid fever	4	6	25	80	52	6	10	3	7	193
Undulant fever				2	3		5			10
Whooping cough	6	25		134	250	46	110	15	16	602

JAPAN

Epidemic encephalitis.—From August 24, 1935, to September 19, 1935, 350 cases of epidemic encephalitis with 73 deaths were reported in the Prefecture of Kanagawa, Japan, distributed as follows:

	Cases	Deaths	Cases recovered
Yokohama	168	21	21
Yokosuka	77	23	9
Kawasaki	40	14	8
Hiratsuka	1	0	0
Suburban districts	64	16	4
Total	350	73	42

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for September 27, 1935, pages 1354-1368. A similar cumulative table will appear in the PUBLIC HEALTH REPORTS to be issued October 25, 1935, and thereafter, at least for the time being, in the issue published on the last Friday of each month.

Cholera

Siam—Nondpuri Province.—On September 25, 1935, one case of cholera was reported in Nondpuri Province, Siam.

Plague

Ceylon—Tellijjawilla.—On September 30, 1935, one case of plague was reported at Tellijjawilla, near Matara, Ceylon.

Peru.—During the month of August 1935, plague was reported in Peru as follows: 3 cases with 2 deaths at Callao and 2 cases at Lima. In Chancay Province 5 cases of plague with 3 deaths, including 3 cases of suspected plague with 2 deaths, were reported.

Yellow Fever

Columbia—Intendencia of Meta—Acacias.—On August 2, 1935, one death from yellow fever was reported at Acacias, Intendencia of Meta, Colombia.