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THE SPREAD OF TUBERCULOSIS.

REPORT ON THE SPREAD OF INFECTION IN CERTAIN TUBERCULOUS FAMILIES IN FIVE COUNTIES IN MINNESOTA.

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This survey was undertaken by the State board of health on the suggestion of Dr. H. M. Bracken, executive officer. The writer was employed August 1, 1912, by the State board of health, and assigned to the division of epidemiology for five months, during which time the work was done.

The five counties studied were Kandiyohi, Marshall, Meeker, Rice, and Wright.

The plan of work was as follows:

A list of names, comprising those individuals who had died of tuberculosis in each of these counties during 1911 and previous to August 1, 1912, was furnished by said board. The name, age, sex, and last address; also the form of the disease—that is, pulmonary or nonpulmonary—were given for each of the deceased. The surviving members of the family were looked up, usually through the help of the family physician or the one reporting the case. When consent was obtained, each individual in the family was given a physical examination and data were taken on the following points:

Name, age, sex, nationality, social condition, school attended, height, weight, general appearance, nutrition, exposure, lungs, bones and joints, skin, glands, other lesions, sputum, pulse, temperature, and respiration. Tuberculin tests were used in every instance where positive evidence of infection, as the finding of tubercle bacilli in the sputum, or physical signs, were lacking. The test used in this work was the skin test of von Pirquet and was used and interpreted as follows:

Three scarifications were made on the arm or forearm and into two of these a small drop of old tuberculin was rubbed. A positive reaction was noted, when, within 48 hours, there was a reddening of the skin with the formation of papules and a distinct thickening of the skin around the treated scarifications. The interpretation of

the positive reaction was that the patient had at some time been infected to the extent of having an active lesion.

In all, 97 family groups were studied and charts were made for 449 individuals.

The chief difficulty encountered was the unwillingness on the part of many persons to submit to examination. This unwillingness came from all classes of people and for various reasons. The principal causes of opposition were fear of publicity; next, fear of being told of infection; and, in some cases, an apparent total lack of interest.

No prolonged effort was made to induce the people to submit to examination, but the matter was fully explained to them in each case. Several instances were found in which apparently nontuberculous deaths had been reported as tuberculous, and in each of these instances the examination of the surviving members of the group bore this out, inasmuch as rarely could any sign of infection be found among them.

The striking features of the investigation were the high percentage of positive tuberculin reactions among apparently healthy people, who had been definitely exposed to infection, continuously, and for a considerable period of time; the much lower percentage of positive reactions among those exposed less continuously, and for shorter periods; and the absence, practically, of positive reactions among those in whom, from the history, the exposure was deemed doubtful. There is apparently a very definite ratio between the intimacy and length of exposure on one hand and the percentage of positive reactions on the other. In the groups where the exposure had been complete and prolonged, nearly every member showed a positive reaction to tuberculin. Where the exposure was less as, for instance, where the patient had been away from home during a part of his sickness or where different members of the family had been away during the period of illness, the percentage of positive reactions was much lower. In those cases in which the history indicated that an incorrect death return had been made, a positive reaction was rarely obtained. In the few instances where a child had been born into the group, after the termination of the last open case, that child was the only one in the group who failed to give a positive reaction.

The results have been tabulated to show the number of infected individuals in the groups where there had been, as explained above:

1. Complete exposure.
2. Partial exposure.
3. Doubtful exposure.

Another tabulation shows the extent of the spread of the infection from the different forms of the disease, pulmonary, peritoneal, meningial, etc.

In each county visited there was found a rather well-defined area where the disease was exceptionally prevalent. These districts were

settled by Scandinavians, 30 to 40 years ago, and the first case of tuberculosis occurred in each of two of them, according to local tradition, about 25 years ago. In the infected area appearing in the northwestern part of Rice County, on 10 adjoining farms, there are 41 survivors.

In the last 25 years there have been 16 deaths from tuberculosis in this group. There are at present 4 active cases, 3 of these being advanced open cases, and but 5 individuals in the entire area failed to show evidence of infection.

In the southwestern part of Wright County, throughout the township of Stockholm, at least one-half the farm houses have harbored the disease.

In Kandiyohi County but little work was done, but it was reported that the population of the township of Norway Lake was extensively infected.

In Meeker County the townships of Kingston and Cosmos were found to be badly infected.

In Marshall County, Augsburg Township gave the history of a spread from 1 case to about a dozen families, during the last 25 years, with at least 8 deaths.

It will be seen from the totals (p. 89) that 61 per cent of all people examined in the course of this investigation either reacted to tuberculin or showed unmistakable signs of infection. All the open cases are classed as reacting to tuberculin, although few of them were tested, and of course some of the advanced cases that were tested failed to react. Of those fully exposed to infection in the manner specified as constituting complete exposure, 79 per cent showed evidence of infection; that is, they were either clinical cases or reacted to tuberculin. Of those partially exposed, 28 per cent showed evidence of infection, and of those doubtfully exposed but 8 per cent showed evidence of infection.

The total amount of material is small, but the uniformity of results in the different geographical locations may give some weight to the findings. An interesting but perhaps not significant feature is shown in the fact that four children, ranging in age from 6 months to 3 years, in separate groups, were born into these groups after the termination of the last open case and were the only members of these groups who were negative.

It was found that in all the groups exposed to the pulmonary type of disease, 70 per cent of the members showed signs of infection and in the nonpulmonary groups 32 per cent, while the nontuberculous groups showed but 8 per cent infection.

Of the complete exposure group, 74 per cent of those under 16 years of age and 81 per cent of those over 16 years of age show evidence of infection.

Of the "Partial exposure" group, 18 per cent of those under 16 years of age and 32 per cent of those over 16 years of age show evidence of infection.

Of the "Doubtful exposure" group, none of those under 16 years of age and 13 per cent of those over 16 years of age show evidence of infection.

In the nonpulmonary groups, containing 34 members, there were 8 adults and 26 children. Three adults and 8 children showed signs of infection.

In the pulmonary groups it was, as a rule, the adults who escaped infection.

In all the groups examined, the percentage of palpable glands was just about the same among the children who reacted to tuberculin and those who did not. Twenty-four and one-half per cent of the von Pirquet positive children and 23 per cent of the von Pirquet negative children showed palpable glands. Of the 94, or 21 per cent of the total number examined, who showed palpable glands, in but 3 instances were the glands clearly tuberculous. In all the others the enlargement of glands might easily have been due to other causes.

Conclusions.

1. A very large percentage, 79 per cent, of the individuals fully exposed for a long period of time to open cases of tuberculosis became infected.
2. A much smaller percentage, 28 per cent, of those partially exposed or exposed for a short period of time became infected.
3. The percentage of infections from casual exposure, such as everyone encounters, was small—8 per cent.
4. The more frequent infection of children may be explained, at least in part, by their more intimate contact with the patient.
5. At all ages the intimacy and length of exposure are the determining factors in infection with tuberculosis.

NOTE.—The low percentage of infections in those under 16 years of age may have no significance because of the small number of cases, but being consistently lower in all three grades of exposure, it is of interest.

DETAILED REPORT BY COUNTIES.

The initials appearing at the head of each group are those of some member dead of tuberculosis, or at present an open case, or so reported. The individuals belonging to these groups but not seen are disregarded.

Rice County Families.

Group 1: Center case, A. B., Bridgewater Township; died of pulmonary tuberculosis November 20, 1911, after an illness of one year. Wife and 3 children fully exposed. All children show physical signs and, with mother, give positive reaction to the von Pirquet test.

Group 2: Center case, J. S., Erin Township; died of pulmonary tuberculosis August 22, 1911, completely exposing a group of 6 people. Four of these show evidence of infection and 2 are negative.

Group 3: Center case, M. S., Erin Township; this group was only partially exposed. Of 7 individuals, 2 show evidence of infection and 5 are negative.

Group 4: Center case, Wm. St. M., Faribault; died of pulmonary tuberculosis April 7, 1911, fully exposing a group of 4 people. All of these people show evidence of infection.

Group 5: Center case, A. D., Faribault; died April 15, 1911, of pulmonary tuberculosis, fully exposing a group of 3 people. All of these show evidence of infection.

Group 6: Mrs. L., Faribault; married sister of the center case of Group 5; with her 3 children was partially exposed by him. None of this group of 4 shows evidence of infection.

Group 7: Center case; J. B., Morristown Township; died of pulmonary tuberculosis January 7, 1911, fully exposing a group of 5 people, 4 of whom show evidence of infection and 1 of whom is negative.

Group 8: E. B., brother of the center case of Group 7. Was, with his family of wife and 4 children, partially exposed, they living apart from but occasionally visiting patient. Of this group of 6, 1 shows signs of infection and 5 are negative.

Group 9: Center case; W. R., Morristown Township; probably died of carcinoma of the stomach November 15, 1911, as he was known to have been suffering from that trouble and developed pulmonary symptoms about two weeks before his death. No tubercle bacilli were ever found in his sputum. His wife and daughter were in constant attendance on him throughout his illness and neither shows signs of tuberculous infection.

Group 10: Center case; C. M., Morristown Township; died of pulmonary tuberculosis November 27, 1911, after fully exposing a family group of 4 people. All these show signs of infection.

Group 11: Center case; B. L., Northfield; died of pulmonary tuberculosis April 1, 1911, leaving a fully exposed group of 3, 2 of whom show signs of infection.

Group 12: Center case; M. L., Northfield; died of pulmonary tuberculosis, May 26, 1911, after fully exposing a group of 3. All of these show signs of tuberculosis, the mother being an open case.

Group 13: Center case; T. H., Northfield Township; died of pulmonary tuberculosis November 16, 1911, after an illness of 5 years, fully exposing a group of 10, all of whom show evidence of infection. The eleventh member of this group is a baby, born four months after the death of the center case, and who, at her present age of 6 months, is negative.

Group 14: Center case; V. S., Wheatland Township; died of pulmonary tuberculosis, January 20, 1911, leaving an exposed group of 5, 2 of whom have since died of pulmonary tuberculosis. Remaining 3 show signs of infection.

Group 15: Center case; J. F., Wheatland Township; died of pulmonary tuberculosis November 22, 1911, following infection apparently by his first wife, who died 25 years previously of this disease. He left an exposed group of 3, 2 of whom show signs of infection, 1 of them an advanced open case.

Group 16: O. F., Wheatland Township; son of the center case of Group 15, living on adjoining farm with his own family. He and his wife have been open cases for at least a short time, having partially exposed his group of 5; he, his wife, and 2 of the 4 children being positive, and 2 of the children negative.

Group 17: W. D., Bridgewater Township; died of tuberculosis of the spine May 1, 1912, leaving only his wife, who had cared for him. She shows evidence of infection.

Group 18: Center case; N. G., Faribault; died apparently of acute lobar pneumonia March 28, 1912, after a sickness of 7 days, having been in her usual state of

health up to the time she was taken with her last illness. She left a group of 5 who had been in constant contact with her for many years. One of this group shows evidence of infection.

Group 19: Center case; A. G., Nerstrand Village; died of pulmonary tuberculosis February 2, 1912, after fully exposing a group of 8; 4 of these show evidence of infection and 4 are negative.

Group 20: Center case; N. O., Northfield; died of pulmonary tuberculosis May 8, 1912, after exposing a group of 8, 5 partially and 3 fully. Of 3 fully exposed, 2 show evidence of infection and 1 is negative. Of the 5 partially exposed, 2 show evidence of infection and 3 are negative.

Group 21: Center case; C. H., Webster Township; died of pulmonary tuberculosis February 29, 1912, being the seventh member of her family to die of this disease. The sole survivor of the family to be examined was one then dying of pulmonary tuberculosis.

Group 22: Center case; M. C., Webster Township; died of pulmonary tuberculosis May 12, 1912, after fully exposing a group of 4, of whom 3 show signs of infection and 1 is negative.

Group 23: Center case; J. B., Cannon City Township; died of pulmonary tuberculosis December 8, 1911, leaving a fully exposed group of 7 people, 6 of whom show signs of infection, while 1 is negative.

Group 24: Center case; P. J., Forest Township; died of tuberculosis of the peritoneum November 10, 1911. He left a group of 6 people, all of whom show evidence of infection.

Group 25: Center case; M. W., Morristown village; died of pulmonary tuberculosis November 17, 1911. Of the group of 5 surrounding her at the time of her death 4 show evidence of infection and 1 is negative, but there are other likely sources of infection of this group.

Group 26: Center case; G. M., Northfield. This man is an open case. Three members of the original group had died of pulmonary tuberculosis, leaving the present group of 3 fully exposed, and all of them show evidence of infection with tuberculosis.

Group 27: Center case; Mrs. P. C., Webster Township. Is an advanced, open case of pulmonary tuberculosis, and has fully exposed a group of 4 others, all of whom show evidence of infection.

Group 28: Mrs. E. W. Is practically a healed case, and is of interest, mainly from the fact that she has gained more than 100 pounds in weight in the last year.

Group 29: Center case; Mrs. Z. T., Northfield. Is at present apparently a closed case, with few signs of earlier trouble. She is a doubtful center case to a group of 4 others, 1 of whom shows signs of infection, and 3 of whom are negative.

Group 30: Center case; O. G., Northfield. Is an incipient case; mother died of pulmonary tuberculosis. Her nephew, the other member of the group, also shows signs of infection.

Group 31: Center case; Mrs. J. O., Northfield; died of pulmonary tuberculosis several years ago, leaving a fully exposed group of 3, all of whom show signs of infection.

Group 32: Mrs. T. E., Dennison village. Is an isolated case, examined by request. Shows signs of infection, and gives history of exposure.

Group 33: A. C., Northfield. Is an isolated case, examined by request. Shows signs of infection. Gives history of exposure.

Group 34: J. H., Northfield. Is 1 of a group of 4 fully exposed by his brother, who died of pulmonary tuberculosis. Two of this group show evidence of infection and 2 are negative. One member has recently had pleurisy with effusion.

Group 35: Mrs. G. H., Erin Township. With her daughter, forms a group of 2 who were fully exposed by her husband who died of pulmonary tuberculosis. Both show evidence of infection, the daughter having a peritoneal infection.

Group 36: M. A., Northfield Township. An isolated case, examined by request. Gives no history of exposure and shows no signs of infection.

Group 37: O. S., Wheatland Township. This man and his mother represent a group from which 5 members have been lost by death from pulmonary tuberculosis in the last 25 years. Both show signs of infection.

Group 38: Center case; A. F., Wheatland Township. Is a suspicious, incipient case, but with the rest of the group has had no prolonged intimate exposure, being exposed only by contact with his neighbors. Three of the members of this group show signs of infection and 2 are negative.

Group 39: Miss H., Northfield. Gives no history of intimate exposure. Shows signs of infection and has pleural and peritoneal lesions.

Group 40: Center case; C. M., Morristown Township. From this group of 7, 3 have been lost by death from pulmonary tuberculosis in the last 8 years, the last death occurring July 26, 1910. Of the 7 remaining, 4 show signs of infection, 1 of them having early pulmonary lesions and 3 are negative.

Group 41: Mrs. A. H., Morristown Township. Was apparently wrongly diagnosed tuberculosis. In her group of 5 no signs of infection could be found. This center case had had metrorrhagia for a year and fully recovered following hysterectomy.

Rice County—Tabulation according to degree of exposure.

Family group.	Number.	Complete exposure.			Partial exposure.			Doubtful exposure.			Dead from tuberculosis.
		Number examined.	Positive.	Negative.	Number examined.	Positive.	Negative.	Number examined.	Positive.	Negative.	
A. B.....	1	4	4	0							1
J. S.....	2	6	4	2							0
M. S.....	3				7	2	5				1
W. St. M.....	4	4	4	0							1
A. D.....	5	3	3	0							1
Mrs. L.....	6				4	0	4				0
J. B.....	7	5	4	1							3
E. B.....	8				6	1	5				0
C. M.....	10	4	4	0							2
B. L.....	12	3	2	1							2
M. L.....	13	3	3	0							1
T. H.....	14	10	10	0	1	0	1				1
V. S.....	15	3	3	0							3
J. F.....	16	3	2	1							2
O. F.....	17				6	4	2				0
A. G.....	20	8	4	4							1
N. C.....	21	3	2	1	5	2	3				1
C. H.....	22	1	1	0							7
M. C.....	23	4	3	1							1
J. B.....	24	7	6	1							1
M. W.....	26	5	4	1							5
G. M.....	27	3	3	0							3
E. W.....	29	1	1	0							0
Z. T.....	30				5	2	3				1
O. G.....	31	2	2	0							0
Mrs. J. O.....	32	3	3	0							1
P. C.....	28	5	5	0							0
G. E.....	33				1	1	0				0
A. C.....	34	1	1	0							1
J. H.....	35	4	2	2							1
G. H.....	36	2	2	0							1
O. S.....	38	2	2	0							5
A. F.....	39				5	3	2				0
M. H.....	40				1	1	0				0
C. M.....	41	7	4	3							3
P. J.....	25	6	6	0							1
W. D.....	18	1	1	0							1
W. R.....	9							2	0	2	0
N. G.....	19							5	1	4	0
Mrs. H.....	42							5	0	5	0
M. A.....	37							1	0	1	0
		113	195	18	41	16	25	13	1	12	52

¹ 84 per cent.

² 39 per cent.

³ 7.7 per cent.

Rice County—Tabulation according to form of disease.

Family group.	Number.	Form of disease, center case.	Members of group exposed.						
			Number examined.	Number dead.	Showing no symptoms.	Reacting to tuberculin.	Negative to tuberculin.	Open cases.	Inactive old cases.
A. B.	1	Pulmonary	4	1	1	4	0	0	0
J. S.	2	do.	6	1	5	4	2	1	0
M. S.	3	do.	7	0	6	5	2	0	0
W. St. M.	4	do.	4	1	3	4	0	0	0
A. D.	5	do.	3	1	3	3	0	0	0
Mrs. L.	6	do.	4	0	4	0	4	0	0
J. B.	7	do.	5	3	4	4	1	0	1
E. B.	8	do.	6	0	1	1	5	0	0
C. M.	10	do.	4	2	4	4	0	0	0
B. L.	11	do.	3	2	0	2	1	0	0
M. L.	12	do.	3	1	2	3	0	1	1
T. H.	13	do.	11	1	11	10	1	0	0
V. S.	14	do.	3	3	2	3	0	0	0
J. F.	15	do.	3	2	2	3	0	1	0
O. F.	16	do.	6	0	3	4	2	0	2
A. G.	19	do.	8	1	0	4	4	0	0
N. O.	20	do.	8	1	6	4	4	0	2
C. H.	21	do.	1	7	0	0	1	1	0
M. C.	22	do.	4	1	3	3	1	0	0
J. B.	23	do.	7	1	5	6	1	0	2
M. W.	25	do.	5	5	4	4	1	0	2
G. M.	26	do.	3	3	1	3	0	1	1
Mrs. W.	28	do.	1	0	0	1	0	0	0
Z. T.	29	do.	5	0	4	2	3	0	1
O. G.	30	do.	2	1	1	2	0	0	0
Mrs. J. O.	31	do.	3	1	2	3	1	0	1
P. C.	27	do.	5	0	3	4	1	1	1
G. E.	32	do.	1	0	0	1	0	0	1
A. C.	33	do.	1	0	0	1	0	0	1
J. H.	34	do.	4	1	3	2	2	0	1
G. H.	35	do.	2	1	1	2	0	0	1
O. S.	37	do.	2	5	2	2	0	0	0
A. F.	38	do.	5	0	4	3	2	0	1
Miss H.	39	do.	1	0	0	1	1	0	1
C. M.	41	do.	7	3	5	4	3	0	1
			147	49	95	106	41	6	21
P. J.	24	Peritoneal	6	1	6	6	0	0	0
W. D.	17	Bone.....	1	1	1	1	0	0	0
			7	2	7	7	0	0	0
W. R.	9	Nontuberculous.....	2	0	2	0	2	0	0
N. G.	18	do.	5	0	5	1	4	0	0
Mrs. H.	40	do.	5	0	5	0	5	0	0
M. A.	36	do.	1	0	1	0	1	0	0
			13	0	13	1	12	0	0

1 72 per cent.

2 100 per cent.

3 7.7 per cent.

Wright County Families.

Group 1: Center case; M. W., Rockford village. Is advanced open case of pulmonary tuberculosis, and has fully exposed her daughter, who is negative.

Group 2: Center case; M. S., Buffalo. Is an arrested case of pulmonary tuberculosis, and has fully exposed a group of 2 others, both of whom show signs of infection.

Group 3: Center case; O. S., Buffalo township. Is a case of pulmonary and peritoneal tuberculosis, who has had much hospital care. She has partially exposed a group of 8, 2 of whom show signs of infection and 6 of whom are negative.

Group 4: Center case; E. E., Stockholm Township; died June 27, 1911, of pulmonary tuberculosis. Three brothers and sisters died of pulmonary tuberculosis. One is an advanced open case and the other 7 members of the group all show signs of infection.

Group 5: Center case; Mrs. A. L., Cokato; died June 11, 1911, of pulmonary tuberculosis, leaving a fully exposed group of 7 people. Six of these show signs of infection and 1 is negative.

Group 6: Center case; T. H., Howard Lake; died August 29, 1911, of pulmonary tuberculosis, after fully exposing wife and baby. Wife shows signs of infection, and the baby died of tuberculous meningitis.

Group 7: Center case; A. B., Cokato. Is an advanced case of pulmonary tuberculosis and has fully exposed a group of 2 others, both of whom show signs of infection.

Group 8: Center case; J. V., Buffalo Township. Was reported an open, pulmonary case. He shows no signs of infection, and of the fully exposed group of 8 others, only the parents show signs of infection; the other 6 children being negative.

Group 9: Center case; M. S., Stockholm Township. Is an advanced, open case, and has fully exposed a group of 6 others, all of whom show signs of infection.

Group 10: Center case; baby W., Maple Lake Township; died April 19, 1911, of tuberculous meningitis. The remaining group of 4 are all negative.

Group 11: Center case; Mrs. C. J., Silver Creek Township; died February 13, 1911, of what the history would indicate to be aneurysm of the aorta, and which was reported as tuberculosis. The exposed group of 3 are all negative.

Group 12: Center case; A. G., Monticello Township; died May 8, 1911, of pulmonary tuberculosis, after fully exposing a group of 5; 3 of these show signs of infection and 2 are negative.

Group 13: Center case; T. C., Monticello; died January 14, 1912, of pulmonary tuberculosis, after fully exposing a group of 2, both of whom show signs of infection.

Group 14: Center case; C. H., Monticello; died March 22, 1911, of pulmonary tuberculosis, after fully exposing a group of 2, both of whom show signs of infection.

Group 15: Center case; A. B., French Lake Township. This group of 4 was exposed for a period of 3 months to an open case of pulmonary tuberculosis; 2 show signs of infection and 2 are negative.

Group 16: Center case; A. H., French Lake Township; died December 19, 1911. Was an open case of pulmonary tuberculosis; 3 members of the group show evidence of infection and 1 is negative.

Group 17: Center case; P. C., Franklin Township; died April 3, 1912, of pulmonary tuberculosis. All of the 6 members of the exposed group show signs of infection.

Group 18: Center case; Mrs. C. B., Woodland Township; died June 28, 1911, of pulmonary tuberculosis; 3 of the members of the group show signs of infection and 2 are negative.

Group 19: Center case; A. K., Stockholm Township; died June 28, 1911, of pulmonary tuberculosis. One other member from this group died from the same cause; 1 shows signs of infection and 2 are negative.

Group 20: Center case; L. D., Cokato Township; died February 9, 1912, of pulmonary tuberculosis, fully exposing a group of 6. One other member of the group has since died from the same cause; 5 of them show signs of infection and 1 is negative.

Group 21: Center case; E. K., Delano Village. This group has been fully exposed to tuberculosis by a member who is an open pulmonary case. Of the other 3, 2 show signs of infection and 1 is negative.

Group 22: Center case; E. M., Franklin Township. Is an open case of pulmonary tuberculosis and has fully exposed this group of 8; 7 show signs of infection and 1 is negative.

Wright County—Tabulation according to degree of exposure.

Family group.	Number.	Complete exposure.			Partial exposure.			Doubtful exposure.			Dead from tuberculosis.
		Number examined.	Positive.	Negative.	Number examined.	Positive.	Negative.	Number examined.	Positive.	Negative.	
M. W.	1	2	1	1							0
M. S.	2	3	3	0							0
O. S.	3				8	2	6				0
E. E.	4	8	8	0							4
A. L.	5	7	6	1							1
T. H.	6	1	1	0							2
Mrs. B.	7	3	3	0							0
J. V.	8							9	2	7	0
M. S.	9	7	7	0							1
Baby W.	10							4	0	4	1
C. J.	11							3	0	3	0
J. G.	12	5	3	2							1
M. C.	13	2	2	0							1
C. H.	14	2	2	0							1
A. B.	15	4	2	2							1
A. N.	16	4	3	1							1
P. C.	17	6	6	0							1
C. B.	18	5	3	2							1
A. K.	19	3	1	2							2
L. B.	20	6	5	1							2
E. K.	21	4	3	1							0
E. M.	22	9	8	1							0
Total.		81	107	14	8	2	6	16	2	14	20

1 82.7 per cent.

2 25 per cent.

3 12.5 per cent.

Wright County—Tabulation according to form of disease.

Family group.	Number.	Form of disease, center case.	Members of group exposed.						
			Number examined.	Number dead.	Showing no symptom.	Reacting to tuberculin.	Negative to tuberculin.	Open cases.	Inactive old cases.
M. W.	1	Pulmonary	2	0	1	1	1	0	0
M. S.	2	do.	3	0	1	3	0	1	0
O. S.	3	do.	8	0	7	2	6	0	0
C. E.	4	do.	8	4	5	8	0	1	1
A. L.	5	do.	7	1	7	6	1	0	0
T. H.	6	do.	1	2	1	1	0	0	0
Mrs. B.	7	do.	3	0	2	3	0	1	0
M. S.	9	do.	7	1	5	7	0	1	1
J. G.	12	do.	5	1	4	3	2	1	0
M. C.	13	do.	2	1	2	2	0	0	0
C. H.	14	do.	2	1	2	2	0	0	0
A. B.	15	do.	4	1	4	2	2	0	0
A. N.	16	do.	4	1	4	3	1	0	0
P. C.	17	do.	6	1	6	6	0	0	0
C. B.	18	do.	5	1	5	3	2	0	0
A. X.	19	do.	3	2	3	1	2	0	0
L. B.	20	do.	6	2	4	5	1	1	1
E. K.	21	do.	4	0	3	3	1	1	0
E. M.	22	do.	9	0	8	8	1	1	1
			80	19	74	69	20	8	5
J. V.	8	Nontubercular	9	0	9	2	7	0	0
C. J.	11	do.	3	0	3	0	3	0	0
			12	0	12	2	10	0	0
N. W.	10	Meningeal	4	1	4	0	4	0	0
Total.			105	20	90	71	34	8	5

76.4 per cent of those in the pulmonary groups react to tuberculin.
 16 per cent of those in the nontuberculous group react to tuberculin.
 None of those in the meningeal group react to tuberculin.

Kandiyohi County Families.

Group 1: Center case, H. M., Willmar. Is an advanced, open case of pulmonary tuberculosis and has fully exposed a group of 5 others, all of whom show signs of infection. Four members of her family died of tuberculosis.

Group 2: H. & N. J., Willmar, constitute this group and have been fully exposed to tuberculosis by their brother, who died of the disease. Both of them show signs of infection.

Group 3: Mrs. S., Spicer. This group of 9 people were all fully exposed to tuberculosis by a member who died of the disease. Five of the group show signs of infection and 4 are negative.

Group 4: C., Willmar. This group of 4 people was fully exposed by 2 members who died of tuberculosis. Two of them show signs of infection and 2 are negative.

Tabulation according to degree of exposure.

Family group.	Number	Complete exposure.			Partial exposure.			Doubtful exposure.			Dead from tuberculosis.
		Number examined.	Positive.	Negative.	Number examined.	Positive.	Negative.	Number examined.	Positive.	Negative.	
H. M.	1	6	6	0	.....	.....	.....	.....	.....	.....	4
H. & N. J.	2	2	2	0	.....	.....	.....	.....	.....	.....	1
Mrs. S.	3	9	5	4	.....	.....	.....	.....	.....	.....	1
C.	4	4	2	2	.....	.....	.....	.....	.....	.....	2
		21	15	6	.....	.....	.....	.....	.....	.....	8

¹Seventy-one per cent.

Tabulation according to form of disease.

Family group.	Number.	Form of disease, center case.	Members of group exposed.						
			Number examined.	Number dead.	Showing no symptoms.	Reacting to tuberculin.	Negative to tuberculin.	Open cases.	Inactive old cases.
H. M.	1	Pulmonary	6	4	5	6	0	1	0
H. & N. J.	2	do	2	1	2	2	0	0	0
Mrs. S.	3	do	9	1	8	5	4	0	1
C.	4	do	4	2	4	2	2	0	0
			21	8	19	15	6	1	1

Seventy-one per cent reacting to tuberculin.

Meeker County Families.

Group 1: Center case; Baby C., Litchfield; died May 26, 1912, of tuberculous meningitis, exposing this group of 7. None of them show signs of infection.

Group 2: Center case; Mrs. K., Litchfield; died several years ago of pulmonary form of the disease, exposing this group of 5 people. Four members of the group show signs of infection and 1 is negative.

Group 3: Center case; A. H., Manannah Township. This group of 7 is classed as partially exposed as the center case is one of suppurative tuberculous adenitis. Three of the members show signs of infection and 4 are negative.

Group 4: Center case; Mrs. S., Kingston Township; is an advanced open case and with the 8 other members of this group was fully exposed by a member, who died of

pulmonary tuberculosis several years ago. Seven show signs of infection and 2 are negative.

Group 5: Center case; — F., Litchfield; is an open pulmonary case, who has been away from home for treatment much of the time that he has been sick. Three of the members of this group show signs of infection and 3 are negative.

Group 6: Center case; — P., Kingston Township; died March 21, 1910. This group of 5 people has been fully exposed by 2 fatal pulmonary cases, with the exception of the youngest who was born after the termination of the last open case. The 4 fully exposed members show signs of infection, while the youngest does not.

Group 7: Center case; — N., Cosmos Township. This group of 4 has been fully exposed by one member who is an advanced open case. All of them show signs of infection.

Group 8: Center case; — E., Cosmos Township. This group of 6 people has been partially exposed by 2 members, who show indefinite signs of pulmonary tuberculosis, with negative sputum. The 2 pulmonary cases show additional signs of infection and the 4 others are negative.

Group 9: Center case; Mrs. L., Cosmos Township. This group of 8 was fully exposed by a member who died of pulmonary tuberculosis. Three of them show signs of infection and 5 are negative.

Group 10: Center case; — D., Danielson Township. This group of 5 has been fully exposed by 2 members who died of pulmonary tuberculosis. Three of them show signs of infection and 2 are negative.

Group 11: Center case; Mrs. D., Litchfield. This group of 4 has been partially exposed to a case of pulmonary tuberculosis now closed. Two of them show signs of infection and 2 are negative.

Group 12: Center case; — P., Dassel Township. One of this group of 2 is a suspected case of pulmonary tuberculosis. Neither of them shows signs of infection.

Group 13: Center case; — P., Dassel Township; died March 15, 1912, of pulmonary tuberculosis. The group of 4 was fully exposed. All show signs of infection.

Group 14: Center case; — T., Litchfield. This group of 2 was exposed by the case of pulmonary tuberculosis who also fully exposed group 15. Both members of this group show signs of infection.

Group 15: Center case; — T., Litchfield. The 2 members of this group were fully exposed by a fatal case of pulmonary tuberculosis. Both show signs of infection.

Meeker County—Tabulation according to degree of exposure.

Family group.	Number.	Complete exposure.			Partial exposure.			Doubtful exposure.			Dead from tuberculosis.
		Number examined.	Positive.	Negative.	Number examined.	Positive.	Negative.	Number examined.	Positive.	Negative.	
Baby C.....	1				7	0	7				1
Mrs. K.....	2	5	4	1							1
A. H.....	3				7	3	4				0
Mrs. S.....	4	9	6	3							1
F.....	5				6	3	3				0
P.....	6	5	4	1							2
N.....	7	4	4	0							0
E.....	8				6	2	4				0
Mrs. L.....	9	8	3	5							1
D.....	10	6	4	2							2
Mrs. D.....	11				4	2	2				0
P.....	12							2	0	2	0
L.....	14	2	2	0							1
T.....	15	2	2	0							1
P.....	13	4	4	0							1
		45	33	12	30	10	20	2	0	2	10

173 per cent.

233 per cent.

90 per cent.

Meeker County—Tabulation according to form of disease.

Family group.	Number.	Form of disease, center case.	Members of group exposed.						
			Number examined.	Number dead.	Showing no symptoms.	Reacting to tuberculin.	Negative to tuberculin.	Open cases.	Inactive old cases.
Baby C.....	1	Meningeal.....	7	1	7	0	7	0	0
A. H.....	3	Adenitis.....	7	0	6	3	4	0	1
Mrs. K.....	2	Pulmonary.....	5	1	3	4	1	0	2
Mrs. S.....	4	do.....	9	1	7	6	3	1	0
F.....	5	do.....	6	0	5	3	3	1	0
P.....	6	do.....	5	2	5	4	1	0	0
N.....	7	do.....	4	0	2	4	0	1	0
E.....	8	do.....	6	0	4	2	4	0	0
Mrs. L.....	9	do.....	8	1	8	3	5	0	0
D.....	10	do.....	6	1	4	4	2	1	0
Mrs. D.....	11	do.....	4	0	4	2	2	0	1
P.....	12	do.....	2	0	2	0	2	0	0
P.....	13	do.....	4	1	4	4	0	0	0
L.....	14	do.....	2	0	2	2	0	0	1
T.....	15	do.....	2	1	2	2	0	0	0
Total.....			63	8	50	40	23	4	4

¹ Negative child born after termination of last open case.

Meningeal form, 0 per cent infected.
Adenitis suppurativa, 43 per cent infected.
Pulmonary form, 63.5 per cent infected.

Marshall County Families.

Group 1: Center case; — A., Warren; died about 4 years ago, of pulmonary tuberculosis. Of 8 people, fully exposed, 7 show signs of infection and 1 is negative. The negative one is a baby, who was born after the termination of the open case. One other member of the family died of tuberculous meningitis a year after the birth of this child.

Group 2: Center case; — L., Warren; died about 10 years ago, of pulmonary tuberculosis. This group of 5 people was fully exposed by him. All members of this exposed group are negative.

Group 3: Center case; — E., Warren; died about 5 years ago, of pulmonary tuberculosis. The remaining group of 5 people was fully exposed. All of them show signs of infection.

Group 4: Center case; — H., Warren. This group of 3 people was exposed to a fatal case of joint and kidney tuberculosis. One of them shows signs of infection.

Group 5: Center case; — B., Alvarade. This group of 5 has been exposed for a short time to an open case of pulmonary tuberculosis, which has had extensive sanatorium care and training. None of them shows signs of infection.

Group 6: Center case; — S., Vega Township. This group of 5 people was very slightly exposed to an open case of pulmonary tuberculosis. None of them shows signs of infection.

Group 7: Center case; — L., Bloomer Township. This group of 12 people was fully exposed by a fatal case of pulmonary tuberculosis. Ten of them show signs of infection, and 2 are negative.

Group 8: Center case; — J., Big Woods Township. This group of 6 was exposed by a case of nonpulmonary tuberculosis. Five of them are negative, and 1 shows signs of infection.

Group 9: Center case; — E., Oak Park Township. This group of 5 people was fully exposed by an open case of pulmonary tuberculosis. All of them show signs of infection.

Group 10: Center case; — S., Radium. This group of 5 was fully exposed by 2 fatal cases of pulmonary tuberculosis. Three of them show signs of infection, and 2 are negative.

Group 11: Center case; — U., Radium. This group of 4 has had no known exposure to tuberculosis. None of them show signs of infection.

Group 12: Center case; — F., Vega Township. This group of 11 people has been exposed for a short time to an open case of pulmonary tuberculosis which has had much sanatorium care. One shows signs of infection and 10 are negative.

Group 13: Center case; — A., Radium. This group of 2 has had no known exposure to tuberculosis and both are negative.

Group 14: Center case; — H., Warren. This man was fully exposed to tuberculosis by 2 fatal pulmonary cases. He is negative.

Marshall County—Tabulation according to degree of exposure.

Family group.		Complete exposure.			Partial exposure.			Doubtful exposure.			Dead from tuberculosis.
		Number examined.	Positive.	Negative.	Number examined.	Positive.	Negative.	Number examined.	Positive.	Negative.	
H.....	14	1	0	1							2
A.....	1	7	7	0				1	0	1	2
L.....	2	5	0	5							1
E.....	3	5	5	0							1
H.....	4				3	0	3				1
B.....	5				6	1	5				0
S.....	6				5	0	5				1
L.....	7	12	10	2							1
J.....	8				6	1	5				1
E.....	9	6	6	0							0
S.....	10	5	3	2							0
U.....	11							4	0	4	3
F.....	13	6	3	3							0
A.....	15				5	0	5	2	0	2	0
		47	34	13	25	2	23	7	0	7	13

¹ Child born after termination of last open case.

Of a total of 79 examined 36, or 46 per cent, were positive.

Of 47 fully exposed 34, or 72 per cent, were positive.

Of 25 partially exposed 2, or 8 per cent, were positive.

Of 7 "nontuberculous," none was positive.

Marshall County.—Tabulation according to form of disease.

Family group.	Number.	Form of disease, center case.	Number examined.	Number dead.	Members of group exposed.			Open cases.	Inactive old cases.
					Showing no symptoms.	Reacting to tuberculin.	Negative to tuberculin.		
H.....	14	Pulmonary.....	1	2	1	0	1	0	0
A.....	1	do.....	8	2	6	7	1	0	1
L.....	2	do.....	5	1	5	0	5	0	0
E.....	3	do.....	5	1	4	5	0	0	1
B.....	5	do.....	6	0	0	0	6	1	0
S.....	6	do.....	5	1	0	0	5	0	0
L.....	7	do.....	12	1	11	10	2	0	1
E.....	9	do.....	6	0	4	6	0	1	0
S.....	10	do.....	5	3	4	3	2	0	1
F.....	13	do.....	11	0	10	1	10	1	0
			64	11	49	32	32	3	4
J.....	8	Joint.....	6	1	6	1	5	0	0
H.....	4	Joint and kidneys.....	3	1	3	0	3	0	0
			9	2	9	1	8	0	0
A.....	15	Nontuberculous.....	2	0	2	0	2	0	0
U.....	11	do.....	4	0	4	0	4	0	0
			6	0	6	0	6	0	0

50 per cent of those exposed to open pulmonary cases show signs of infection.

None of those in the nontuberculous groups show signs of infection.

25 per cent of those exposed to nonpulmonary forms of tuberculosis show signs of infection.

Tabulation of Counties According to Degree of Exposure.

County.	Complete exposure.			Partial exposure.			Doubtful exposure.			Dead from tuberculosis.
	Number examined.	Positive.	Negative.	Number examined.	Positive.	Negative.	Number examined.	Positive.	Negative.	
Rice.....	113	95	18	41	16	25	13	1	12	51
Wright.....	81	67	14	8	2	6	16	2	14	20
Kandiyohi.....	21	15	6	0	0	0	0	0	0	8
Meeker.....	45	33	12	30	10	20	2	0	2	9
Marshall.....	47	34	13	25	2	23	7	0	7	13
	307	244	63	104	20	74	38	3	35	101

179 per cent.

28 per cent.

8 per cent.

Summary of Data According to Form of Disease.

Type of center case.	Tuberculosis deaths in groups studied.	Number examined.	Physical findings.				Tuberculin test.	
			No symptoms.	Suspicious symptoms.	Inactive lesions.	Open cases.	Positive.	Negative.
Pulmonary tuberculosis.....	95	384	287	40	35	22	262	122
Nonpulmonary tuberculosis.....	6	34	33	0	1	0	11	23
Not tuberculosis.....	0	31	31	0	0	0	3	28
Total.....	101	449	351	40	36	22	276	173

NOTE.—A report of a similar study in the city of Minneapolis of families in which there were reported cases of tuberculosis and, as a control, of a group of families in which there was no recognized case of tuberculosis, was made by Dr. Lampson in 1913. The report was published by the University of Minnesota and is entitled "A Study on the Spread of Tuberculosis in Families."—Editor.

SICKNESS INSURANCE.

ITS RELATION TO PUBLIC HEALTH AND THE COMMON WELFARE.¹

By B. S. WARREN, Surgeon, United States Public Health Service, and Sanitary Adviser, United States Commission on Industrial Relations.

The object of sickness insurance is to distribute the loss due to sickness and death over the community according to responsibility. This will automatically make those responsible search for and enforce measures to prevent sickness and death.

At present, in the United States, the burden of this loss is borne by the individual who, in many instances, is broken by the extra load and is added to the number of impoverished or destitute to be cared for by the community. It is the dread of this which drives the individual to work when too ill and causes him to return to work before he is well and strong.

¹ Read at the annual session of the American Public Health Association, Jacksonville, Fla., Nov. 30-Dec. 4, 1914.

Studies in economics and statecraft have shown that the question of disability among wage earners is a social and not an individual problem; that the physical fitness of the great mass of workers depends upon treating it on a social basis.

The future of the nation depends upon the health of its citizens and it can not be left to individual endeavor.

No study into the causes of labor unrest would be complete which failed to consider sickness and sickness prevention and their relation to the workman.

The productivity of a healthy man is so potentially great that, other things being equal, he has little worry over making a living, whereas the sick man, or partially disabled man, is often a burden upon the community. It is, therefore, a simple economic proposition for the community to aid workmen with small incomes to provide adequate insurance against loss due to sickness.

Changing conditions in the United States will sooner or later, as in other countries, force the enactment of a law providing for sickness insurance. The industrial centers are growing in number and in size and density of population, so that the individual can no longer protect himself against the hazards of living and working conditions.

At present the income of the people who require this insurance is so small that they can not afford to meet the cost when the insurance is operated by private business enterprise for profit. It must, therefore, be operated on a strictly mutual basis with the smallest possible expense for administration. On this account insurance companies operated for profit should be eliminated from this field.

The experience of all countries in which it has been established has demonstrated that sickness insurance will in no way disappoint those who advocate it as a measure for the relief and prevention of sickness and poverty.

Insurance for All Persons with Small Income.

Sickness insurance must be compulsory for all employees earning less than a certain fixed amount per annum. The differences in opinion between the advocates of voluntary membership and the advocates of compulsory membership has been invariably decided in favor of the compulsory plan.

The compulsory feature will probably meet with some criticism as being un-American and contrary to the spirit of America's free institutions. The reply is that this is a social problem and that individual rights must be subordinated to the general good, because sickness can no longer be treated as an individual problem, especially in industrial centers where sickness affects the community as a whole and it is impossible to limit the injury to the individual who, in the exercise of his individual rights, may prefer not to be insured.

It can not be argued that the plan will impose an extra burden upon the insured persons. On the contrary, the average workingman is already spending more than the proposed tax, on account of sickness, and receiving less for his money. The proposed plan will lighten the burden by distributing the expense over the whole of his working life.

Benefits.

When the breadwinner is sick, medical and financial relief must be provided together. Experience has shown that any attempt to separate these and furnish one without the other results in a vicious circle.

Prior to the national insurance act in England, provident associations in many localities were providing adequate medical relief for industrial workers, but they found that, through stress of poverty, the workers could not stop work to avail themselves of treatment before it was too late, or had to return to work before they were strong enough, and suffered relapse.

To provide financial relief without adequate medical relief to reduce the period of cash payments, would be uneconomical and too expensive a method to be considered in any plan for sickness insurance. The relief and prevention of sickness is, therefore, an economic, as well as a public health problem and any constructive program for betterment must be based on the knowledge that there is scarcely any field of human endeavor which is not affected by the physical fitness of the workers engaged therein.

The cash benefit should not be sufficient to promote idleness. On this account it should not be more than two-thirds of the wages, except for persons with very low wages; even in such cases it is doubtful if it should be much more than two-thirds of the usual wages.

The whole object of the relief is to provide for those dependent upon the worker during his illness until he is fit for duty, and to provide medical relief which will reduce the period of disability and suffering to a minimum.

Funds.

In preparing a tentative plan for consideration by the Commission on Industrial Relations, the rate of contribution to funds was tentatively fixed as follows:

	Per cent.
Employees.....	50
Employers.....	40
Community.....	5 to 0
State.....	5 to 10

The amount to be contributed by the community and State is fixed at a variable rate and depends upon the success of the community's efforts to reduce sickness

All of the above percentages are fixed on what is considered an equitable basis after reviewing the experience of others in this field.

The German act provides that—

Employees pay two-thirds.

Employers pay one-third.

The State contributes a varying amount for expenses of supervision.

The English act provides that—

Male employees pay 4d. (8 cents) a week.

Female employees pay 3d. (6 cents) a week.

Employers pay 3d. (6 cents) a week for each person employed, whether male or female.

Parliament appropriates 2d. (4 cents) a week for all insured persons.

The plan submitted to the Commission on Industrial Relations varies but little from the English and German rates, except that the community is made to contribute.

The sum of all the contributions will probably have to be an average of 50 cents per week or \$26 per year per insured person. Such a sum should be sufficient to pay all expenses and benefits, as follows:

1. \$1 per day beginning with the fourth day of disability due to sickness or nonindustrial accident.

2. \$200 death benefit.

3. Medical and surgical relief and medicines and appliances in home, hospital, and dispensary, as the case may require, for all disability, whether due to sickness, childbearing, or nonindustrial accident, and from the first day of disability.

It will probably require \$10 per member per year to pay cash benefits. This estimate is based on the experience of large industries in this country and Germany, which has shown that the average time lost per member is from 7 to 10½ days per year, not counting the first three days of disability.

To pay \$200 death benefits will take about \$2.20 to \$2.35 per member per year. This is based on a death rate of a little over 11 deaths per 1,000 members per year.

It will take about \$9 per year to provide the home and hospital relief. This estimate is based on the experience of several large industries studied where assessments are made for such relief.

It will require 10 to 15 per cent for expenses of operation, or \$3.90 per member.

Summing up, the expense per member would be about as follows:

\$10.00 for 10 days' disability, at \$1 per day.

2.35 for death benefits, at a rate of 11.75 deaths per 1,000 members, at \$200.

9.00 for medical and surgical relief, including medicines and appliances.

3.90 for administrative expenses, at 15 per cent.

25.25

These estimates are liberal for every item, and it is probable that after one or two years' experience the contributions could be materially lowered. It would be better to begin with rates too high than too low. The difference between \$26, total estimated contribution

per member, and \$25.25, total estimated expenditure per member, would go to create a small surplus, but contributions could be lowered to prevent the creation of too large a surplus.

Owing to the lack of accurate data as to the hazards of the various industries, it is believed it would be best to fix a flat rate by regulation for all insured persons in the initial stages of the law.

Especially hazardous industries would in time be compelled to pay more than \$26 per year, and there may be many industries which would not have to pay so much. Under the operation of the act, records would accumulate which would show accurately the hazards of the industries and rates could be fixed for each, based on actual experience.

If in the beginning an unusual surplus were accumulated in any fund, it might be wise to return it in rebates to the contributors. In the industries where the hazard is so great that the contributions are not sufficient, consideration should be given to the benefits derived by the community from having the industry located in it, and before loading all the hazard on the industry it might be well for the community to increase its contributions, to avoid crippling an industry on which its prosperity depends.

Contributions by Employees.

Based on the plan of employees contributing 50 per cent of the funds, each employee would probably have to contribute 25 cents a week, or \$13 per annum, the amount to be deducted from the pay roll each week, and paid into the local fund at the end of the month by the employer. It is but just that employees pay the largest share in view of the fact that they receive the largest benefits.

Furthermore, it is safe to state that a very large majority of all would be more than pleased to obtain such a bargain in insurance in a fund guaranteed by the State. Studies made of budgets of expenses of workingmen's families show that most of them are already spending more than \$13 per year on sickness insurance.

Chapin's study of cost of living of workingmen's families showed that families with incomes of \$600 to \$999 per year, spent on an average of \$13.05 to \$23.71 per year for insurance, or from 2 to 2½ per cent of the income on this item. And this was for little more than death benefits of \$50 to \$100.

The Pittsburgh Survey of weekly expenditures of workingmen's families shows that more than 85 per cent of the families carried insurance. In those families with incomes of \$12 to \$20 a week the average amount spent was from 70 cents to \$1.86 per week.

At present many large industries employing thousands of men and women have in operation more or less compulsory systems and are deducting from their pay a greater amount than that proposed.

It has been conservatively estimated that the people in the United States spend annually \$500,000,000¹ for medicines alone, and most of this is consumed haphazardly and not under the direction of a physician. This would take an average of \$5 annual expense for medicines for each man, woman, and child in the United States.

When the amount spent for burial insurance, doctor's bills, and medicines is considered, it is safe to state that the plan for compulsory sickness insurance would cut the amount the average workingman is now paying for these items in half, and he would receive a much better service.

It is absolutely necessary for the employees to feel a real interest in the funds, which could be obtained only by compelling them to pay the largest share. They must have a feeling of ownership and responsibility for the funds to create on their part an interest in the prevention of malingering, as well as sickness. They must pay in order to provide democratic control, for a voice in government without financial responsibility leads to undesirable conditions.

Furthermore, the workingman realizes that his capital is his ability to work, that disease means loss or impairment of that capital, and, like any other business man, he wants to insure himself against loss or injury.

Contribution by Employers.

The contribution by employers of 20 cents per week for each employee will probably be necessary to give them the same interest in the fund which employees have; without this responsibility and incentive to save, only the exceptionally wise or humane employer would take any interest in the prevention of sickness.

The fixing of a definite amount to be paid for sickness places this on a business basis, whereas at present many employers are paying this in charities, subscriptions, or voluntary relief extended individual employees whom they find in distress.

Sickness insurance places all employers, good and bad, on an equal footing, and all are compelled to meet this obligation to the sick employee, whereas only the good ones are meeting it at present.

It will make it possible for employers to save by reducing the sick rate of their establishments and thereby add to the profits of their business or underbid their competitors. It will give each a financial incentive to prevent sickness, and instead of opposing public-health legislation employers will insist on more efficient health departments, and they will want their places of employment studied by expert sanitarians in order to advise them as to improvements.

Contributions by the Community and State.

Based on the rate of 10 per cent of all contributions, the community and State together will probably have to be assessed 5 cents a week for every employee member of the funds. The part each will

¹ M. I. Weibert, U. S. Public Health Reports, Oct. 16, 1914, p. 2769.

have to pay will depend upon the success of each in the efforts to prevent sickness. The amount to be paid by either will not prove an additional burden upon the revenues of either; it will only change the manner of paying for sickness. At present they are paying as much or more by contributions to, or maintenance of, free hospitals and other institutions for free care and treatment of their citizens.

It is not necessary to enter into a discussion of the numerous benefits which will accrue to both State and community by the improvement in the health of their citizens.

It is a significant fact that no country which has enacted sickness-insurance laws has ever repealed them, but instead many countries have broadened and strengthened them.

Relation to Public Health.

Sickness insurance will prove a most powerful factor in disease prevention by fixing a definite money value to be paid for each case of sickness and at the same time making it to the financial interest of the employer, the employee, the community, and the physician to keep the beneficiary well, and assuring to each a definite cash value for every day of sickness prevented.

But sickness insurance will be a failure unless it results in sickness prevention, just as accident insurance has resulted in accident prevention. The safety movement received its present impetus only after employers' liability and compensation laws had rendered it profitable for the employer to reduce the number of accidents. In the work of sickness prevention, however, there are other potential agencies besides the employer. Sickness is caused by so many other conditions outside the places of employment that the responsibility of the employer is limited and the burden is shifted to the employee and his medical adviser for his home conditions, and to the State and municipality for community conditions.

Just as motives of humanity on the part of the employer are conceded to be ineffective in accident prevention, so it is useless to expect that those responsible for sickness will zealously engage in preventive work for humanitarian motives. The work must be constant in order to assure steady results. To obtain this the financial incentive is provided for each.

The employee will have in mind the saving in the rate of contribution or a rebate to be paid when all the contributions are not required to meet the expenses of the sick members; he will therefore use his best efforts to effect this saving and will not hesitate to report cases of malingering or insanitary conditions which are causing sickness.

The contribution of employers should be sufficient to create an incentive to save by reducing it. A uniform rate for all employers in the same grade of industry will have a lesser effect than a graduated rate

calculated upon the sick rate among the employees of each. The nearer the responsibility for a high sick rate is brought home to the individual employer, the stronger the probability that work for prevention will be the result.

The American municipality is responsible for sickness no less than the employer. It is not likely to engage in work of prevention unless it is driven to do so. Health preservation must become an issue in municipal elections. One way of achieving it is to make the city contribute a part of the sickness fund. Still better results could be obtained by providing that the State shall refund to the city a part or all of its contributions in case the sick rate has been reduced in like proportion by efforts of the municipality. If this be done, it will result in the party in power "pointing with pride" to its success in reducing the sick rate and thereby reducing the city's compulsory contribution to the sickness fund, and the party not in power will promise still greater reductions.

It can not be denied that physicians are able to do more than they are doing at present for the prevention of sickness. They are not doing it to the full extent of their ability on account of inertia. This inertia can best be overcome by an economic incentive. If the physicians are paid a per capita for each insured person, and if that per capita is made to rise when the sick rate falls, or made to fall when the sick rate rises, prevention will acquire powerful promoters.

The Medical Service.

Without an efficient medical service the whole plan of sickness insurance would be a failure. One of the most important parts of any plan should be the medical staff or a corps of efficient all-time medical men, skilled in preventive medicine, and closely related to the State and local health departments. To accomplish this, provision should be made that officers of the medical staff be medical officers of the State health departments, either ex officio or de facto.

This would bring to the health departments men skilled in preventive medicine and whose first duty would be to work all the time on plans of prevention, and whose knowledge of the sick would be that obtained at the bedside, because they must see and keep in touch with every sick member of the funds. In this way they would obtain first-hand information of diseases which are likely to spread and would be able to take quick action where necessary.

One of the vital defects in health departments to-day is the fact that health officers are usually physicians engaged in private practice and are too busy to perform the duties of their office.

All experience shows that it is necessary to protect the funds against malingerers by providing all-time medical officers to sign all certificates of disability. These officers will more than save their

salaries and will relieve the family physician of the unpleasant duty of refusing to sign certificates of doubtful character and take away the temptation to yield in order to avoid losing a good patron. Unless a check of this character were provided the number of sick days would probably be so great that the funds would soon be exhausted and dues would have to be increased.

It will probably require one all-time medical officer to 5,000 members. It may be that in time the number could be reduced. The rate is based on the experience of the Pennsylvania Railroad, which provides more than 1 to 4,000. However, railroad employees are more widely scattered than the members of a local fund would be.

Provision should be made for examination prior to appointment to the medical staff and a probationary period of service before permanent appointment, and tenure of office should be permanent, subject to good moral conduct and efficiency.

The medical officer must be independent of political influence that might be calculated to bias his judgment in signing certificates of disability, and his action in this regard should be subject to review only by the chief medical officer and the State sickness-insurance commission.

Further argument for a medical staff to perform public-health duties is that the public is paying part of the contribution through the contributions made by the community and State, and the only return it can expect is increased healthfulness of the citizens; it therefore is equitable to spend this amount on a plan which is calculated to be such an important factor in the prevention of sickness.

Medical Societies.

Free choice of registered physicians seems to be necessary to the success of the plan. It will probably not obtain for the patient the most efficient service, but this will probably be offset by the satisfaction to the patient created by allowing him this freedom of choice. Some plan of contracting with the medical societies for home treatment of beneficiaries would prevent much friction and at the same time give the best service by controlling the competition among physicians to secure patients.

It would probably correct the defects in the English and German plans in that it would not disturb very materially present relations of physician and patient. Further, it would make the medical societies responsible for the medical relief and at the same time the halls of the societies would be the place for the settlement of differences among the physicians and relieve the insurance directors of this unpleasant duty.

The physician, when chosen by a member, would receive a per capita fee of an amount to be fixed by the contract between the

insurance directors and the medical societies. He would receive this whether the member were sick or well and it would necessarily follow that he would try to save in number of professional visits by using his best efforts to keep his patients well. A further incentive would be provided by an increase in the capitation allowance from the savings effected by reducing the number of days of relief to be paid for. The physician should receive the same capitation per patient per annum, whether the patient be treated in home or hospital, but in every case the medical examiner should pass upon the necessity of hospitalization. This incentive to send patients to the hospital would effectively reduce the number of sick days.

All local funds should be federated according to locality, in order to build or buy hospitals, or contract with local hospitals for care of patients, on the most favorable basis. All hospitals and hospital patients should be in charge of an officer of the medical staff, with authority to call specialists in consultation when required.

It is very probable that a system of periodical physical examinations would be instituted by the physicians among their patients in order to detect minor ailments and make early diagnoses of graver diseases. Further, patients, knowing that the expense would be no greater, would consult the physician more frequently.

The greatest satisfaction will come to the public and humane employers in the knowledge of the fact that all industrial employees are receiving relief while sick. The fact that such a large number of cases of illness are properly cared for will of itself aid in preventing sickness.

Relation to the Health Department.

The provision that no cash benefit be paid until the cause of sickness or death is reported would in time bring an accumulation of records of diseases which would be of tremendous value in the search for preventive measures. Such records would be invaluable.

Any plan should bind together the health departments and the medical staff, so that the greatest amount of cooperation may be obtained. To do otherwise would be a blunder. The experience of the English act has conclusively proven this. At present it is best not to subordinate the medical staff to the health departments, but the plan should provide that the first duty of the medical staff is to the fund. However, as the first duty to the fund is to prevent sickness, it necessarily follows that in their dual capacity as medical officers for the funds and the health department, their duties are for the most part identical and there will be very little conflict.

Relation to the Medical Profession.

The English act provides for the free choice by the beneficiary of any physician registered on the panel of doctors published by the local insurance committees.

The act further provides for the payment of cash benefits on certificates signed by the physician treating the beneficiary. This has led to much malingering and an apparent increase in the amount of sickness.

The greatest danger lies in the temptation of the physicians to sign doubtful certificates in order to retain patronage, and the number of such cases is causing a strain upon the funds. On this account the employment of whole-time physicians on a salary basis has been suggested.

In the Annual Report of the Operation of the British Act for 1913-1914 the Government has suggested that the societies combine according to locality and employ a whole-time medical referee to examine all patients where there is any question as to their rights to benefits. This has been done in some places and the panel doctors have volunteered to pay part of the expenses of the medical referee, because it relieved them of many unpleasant duties.

The experience of the railway benefit association in the United States has been such that they employ medical referees on a salary basis and pay benefits only on their certificates. It is on account of this experience that any plan proposed should provide for an all-time medical staff, who shall see and keep in touch with all disabled insured persons, and that it shall also be the duty of these physicians to study and enforce measures for the prevention of sickness among insured persons. It is therefore thought best to make the medical staff ex officio officers of the health department, in order to clothe them with the power to enforce laws and to bring them in the closest relation with those departments. Such a provision would no doubt add greatly to the efficiency of both and remove any possibility of jurisdictional disputes on the part of either of these governmental agencies.

For the present it is probably best to leave the home treatment to the physician of the patient's choice. This plan has been followed by practically all countries up to the present time, but experience is proving that there is good reason for believing that it would be best to employ all-time physicians for this purpose, and in the end to extend the medical benefits to those dependent upon insured persons.

At present the medical practice of the United States is operating on a most uneconomical and unsocial basis; the poor must either be treated free of charge or go without treatment. The man on the average income of industrial workers can not afford to pay the charges for the average sickness expectancy. As a consequence, those who can pay must pay for those who can not pay at all. Rich men are paying high rates to offset the work done by physicians for nothing.

In medical centers large free hospitals are maintained for certain cases called hospital cases, while other cases go without proper treatment until it is too late. Many hospital cases do not apply for admission because they can not afford to stop work. Large areas in

certain localities have too few physicians, because the people are too poor to employ them. The English sickness-insurance commission found many such areas.

Except in medical centers, hospital accommodations are far from adequate, and in the United States many lives are lost because the distance to the hospital is so great that the patient can not go, or waits until it is too late.

The waste from disability and death, due to preventable disease, is so tremendous that estimates mean nothing to the average mind. The suffering and sorrow due to these causes should be sufficient argument for a sickness-insurance law which will place adequate medical relief within the reach of all and provide for preventive measures on a broad and comprehensive plan in which there will be a financial incentive for employers, employees, physicians, and the community to prevent sickness. Such a law would prove to be the greatest public-health measure ever enacted into law.

Conclusions.

The study of the experience in the field of sickness insurance shows practically unanimous conclusions that the following provisions are necessary to the success of any plan:

1. It must be compulsory, especially for those with small incomes.
2. Cash benefits not to exceed 66 $\frac{2}{3}$ per cent of the wages for a period of not more than 26 weeks in one calendar year.
3. Invalidity benefits elastic in character.
4. A small death benefit sufficient to meet the ordinary expenses of burial and other immediate necessities.
5. Medical benefits to include medical and surgical relief in home, hospital, or sanatorium as necessary, and medicine, appliances, and specialist service, including dentistry.

The following provisions relative to contributions, while not conceded by all, are believed to be most equitable by most economists, public-health authorities, and lawmakers who have studied the subject in its broad relations:

1. The funds to be provided by contributions as follows:	Per cent.
Insured persons.....	50 to 66 $\frac{2}{3}$
Employers.....	33 $\frac{1}{3}$ to 50
Community or State.....	10 to 25

2. The amount of weekly contributions has not been very definitely determined, but it is believed that a total of 50 cents per person per week from all sources will provide the following:

- (a) \$1 per day for disability due to sickness and nonindustrial accidents, to begin on the fourth day and not to exceed 26 weeks in one calendar year.
- (b) \$200 death benefit for deaths due to sickness and nonindustrial accidents.
- (c) Adequate medical and surgical relief.

3. Provisions must be made for changing the amount of contributions from year to year to adjust the funds to the hazards of the industry and prevent the accumulation of an unusual surplus or deficit in any fund.

On questions of administration there does not seem to be much difference of opinion as to the following provisions:

1. The administration must be democratic, and employees must have a voice in control in proportion to their contributions.
2. The insured persons must have a feeling of ownership and responsibility for the proper conservation of the funds.
3. An efficient medical service must be provided and closely related to the public health authorities, so that the clinical and preventive medical benefits may yield the best results.

PLAGUE-ERADICATIVE WORK. CALIFORNIA.

The following report of plague-eradicator work in California for the week ended December 12, 1914, has been received from Passed Asst. Surg. Hurley, of the United States Public Health Service, in temporary charge of the work:

San Francisco, Cal.

RATPROOFING.		RATPROOFING—continued.	
Inspections, new buildings under construction.....	314	Concrete floors installed, old buildings (square feet, 18,697).....	24
Basements concreted, new buildings (square feet, 38,900).....	38	Basements concreted, old buildings (square feet, 13,675).....	20
Floors concreted, new buildings (square feet, 14,160).....	15	Yards and passageways, etc., concreted (square feet, 5,478).....	36
Yards, passageways, etc., new buildings (square feet, 14,571).....	89	Total area concrete laid in old premises, square feet.....	27,850
Total area of concrete laid, new premises, 67,631 square feet.		Floors, old buildings, ratproofed with wire cloth (square feet, 3,580).....	4
Inspections, classes A, B, and C (fireproof) buildings.....	238	Buildings razed.....	34
Roof and basement ventilators, etc., classes A, B, and C buildings screened.....	631	New garbage cans stamped approved.....	476
Wire screening used..... square feet..	3,048	Nuisances abated.....	439
Openings around pipes, etc., closed with cement.....	1,813	OPERATIONS ON THE WATER FRONT.	
Sidewalk lens lights replaced.....	6,000	Vessels inspected for rat guards.....	23
Inspections, old buildings.....	227	Reinspections made on vessels.....	20
Wooden floors removed, old buildings.....	42	New rat guards procured.....	6
Yards and passageways, planking removed..	16	Defective rat guards repaired.....	19
Cubic feet new foundation walls installed, old buildings.....	3,992	Vessel on which cargo was inspected.....	1

	Condition.	Rat evidence.
Steamer Admiral Dewey from Seattle:		
50 boxes milk.....	O. K.	None.
17 cases household goods.....	O. K.	None.
30 rolls paper.....	O. K.	None.
250 sacks flour and bran.....	O. K.	None.

Rats trapped on wharves and water front....	21	Bait used on water front and vessels—bacon (pounds).....	6
Rats trapped on vessels.....	35	Amount of bread used in poisoning water front (loaves).....	12
Traps set on wharves and water front.....	91	Pounds of poison used on water front.....	6
Traps set on vessels.....	65		
Vessels trapped on.....	16		
Poisons placed on water front (pieces).....	3,600		
Poisons placed within P. P. I. E. grounds (pieces).....	7,200		

Ranches inspected and hunted over.

Contra Costa County.....	13
San Benito County.....	2
Total.....	15

Record of plague infection.

Places in California.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number rodents found infected since May, 1907.
Cities:				
San Francisco.....	Jan. 30, 1908	Oct. 23, 1908	None.....	398 rats.
Oakland.....	Aug. 9, 1911	Dec. 1, 1908	.....do.....	126 rats.
Berkeley.....	Aug. 28, 1907	None.....	.....do.....	None.
Los Angeles.....	Aug. 11, 1908	.....do.....	Aug. 21, 1908	1 squirrel.
Counties:				
Alameda (exclusive of Oakland and Berkeley).	Sept. 24, 1909	Oct. 17, 1909 ¹	Aug. 7, 1914	286 squirrels, wood rat.
Contra Costa.....	May 17, 1914	None.....	Oct. 23, 1914	1,565 squirrels.
Fresno.....	None.....	.....do.....	Oct. 27, 1911	1 squirrel.
Merced.....	.....do.....	.....do.....	July 12, 1911	5 squirrels.
Monterey.....	.....do.....	.....do.....	Apr. 10, 1914	6 squirrels.
San Benito.....	June 4, 1913	.....do.....	Sept. 26, 1914	36 squirrels.
San Joaquin.....	Sept. 18, 1911	.....do.....	Aug. 26, 1911	18 squirrels.
San Luis Obispo.....	None.....	.....do.....	Jan. 29, 1910	1 squirrel.
Santa Clara.....	Aug. 31, 1910	.....do.....	July 23, 1913	25 squirrels.
Santa Cruz.....	None.....	.....do.....	May 17, 1910	3 squirrels.
Stanislaus.....	.....do.....	.....do.....	June 2, 1911	13 squirrels.

¹ Wood rat.

RATS COLLECTED AND EXAMINED FOR PLAGUE.		SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE.	
Collected.....	322	Contra Costa County.....	29
Examined.....	196	San Benito County.....	4
Found infected.....	0	Total.....	33
RATS IDENTIFIED.		Found infected.....	0
Mus norvegicus.....	74		
Mus musculus.....	64		
Mus alexandrinus.....	99		
Mus rattus.....	85		

The work is being carried on in the following-named counties: Alameda, Contra Costa, San Francisco, Merced, San Joaquin, Santa Cruz, Stanislaus, San Benito, Santa Clara, and San Mateo.

LOUISIANA—NEW ORLEANS.

Chronic Plague in a Rodent.

Surg. Corput, of the United States Public Health Service, reported in a telegram dated December 26, 1914, that chronic plague was determined on that date in a rodent found December 16, 1914, at Crescent City slaughterhouse, St. Bernard Parish, a suburb of New Orleans. The locality immediately adjoins the United States Army post and is about 4 miles from the nearest point of known rodent infection.

Rat Harborage in the Roof of a Wharf.

Surg. G. M. Corput reports the finding of a plague-infected rat in the wheat conveyor from elevator E on top of wharf 7, Stuyvesant Docks. Further examination showed considerable harborage for

roof rats in the coping on top of the fire wall and beneath the copper flashing at the junction of the concrete roof and the fire wall. As the roof of the docks is of reinforced concrete, the harborage above had been overlooked. The removal of the coping on top of the fire wall revealed evidence of considerable rat infestation. Two *Mus alexandrinus* were killed and numerous rat nests were found. The entire coping and flashing were removed. Beneath the flashing five infected rats were found—one alexandrinus and four rattus.

Report for Week Ended December 19, 1914.

The following report of plague-eradivative work at New Orleans for the week ended December 19, 1914, has been received from Surg. Corput, of the United States Public Health Service, in temporary charge of the work:

OUTGOING QUARANTINE.	
Number of vessels fumigated with sulphur..	26
Number of vessels fumigated with carbon monoxide.....	21
Number of vessels fumigated with hydrocyanic gas.....	2
Pounds of sulphur used.....	7,314
Coke consumed in carbon monoxide fumigation.....	33,800
Pounds of potassium cyanide used in hydrocyanic-gas fumigation.....	170
Pounds of sodium carbonate used in hydrocyanic-gas fumigation.....	170
Pounds of sulphuric acid used in hydrocyanic-gas fumigation.....	280
Clean bills of health issued.....	28
Foul bills of health issued.....	14

OVERLAND FREIGHT INSPECTION.	
Cars inspected; found in good order; permitted to load.....	976
Cars ordered repaired before loading.....	1,402
Total cars inspected.....	2,378

DESTINATION AND NUMBER OF RAILROAD CARS INSPECTED WEEK ENDED DEC. 19.	
Alabama.....	100
Arkansas.....	14
California.....	17
Colorado.....	4
Florida.....	43
Georgia.....	41
Illinois.....	232
Indiana.....	50
Iowa.....	14
Kansas.....	1
Kentucky.....	26
Louisiana.....	937
Maryland.....	2
Massachusetts.....	8
Michigan.....	41
Minnesota.....	6
Mississippi.....	297
Missouri.....	60
Nebraska.....	3
New Mexico.....	1

DESTINATION AND NUMBER OF RAILROAD CARS INSPECTED WEEK ENDED DEC. 19—continued.	
New York.....	30
North Carolina.....	3
Ohio.....	51
Oklahoma.....	14
Oregon.....	6
Pennsylvania.....	16
South Carolina.....	1
Tennessee.....	85
Texas.....	204
Utah.....	2
Washington.....	1
Wisconsin.....	9
Wyoming.....	1
Canada.....	1

FIELD OPERATIONS.	
Rats trapped.....	11,876
Premises fumigated.....	0
Premises disinfected.....	99
Premises inspected.....	9,581
Poisons placed.....	11,900
Notices served.....	2,062

BUILDINGS RAT PROOFED.	
By elevation.....	57
By marginal concrete wall.....	105
By concrete floor and walls.....	218
By minor repairs.....	96
Square yards of concrete laid.....	21,682
Total buildings rat proofed.....	476
Buildings rat proofed to date.....	6,245
Abatements.....	495
Abatements to date.....	16,347

LABORATORY OPERATIONS.	
Rodents examined.....	11,512
Mus norvegicus.....	3,385
Mus rattus.....	96
Mus alexandrinus.....	321
Mus musculus.....	6,355
Unclassified and putrid.....	2,156
Total rodents received at laboratory.....	11,915
Number of suspicious rats.....	41
Plague rats confirmed.....	2

Rodent cases.

Case No.	Address.	Captured.	Diagnosis confirmed.	Treatment of premises.
209	Stuyvesant Docks, wharf.....	6 Dec. 12 (found dead).	Dec. 14	Intensive trapping. Rat proofing initiated. See case 209.
210	Do.....	7, Dec. 15 (found dead).	Dec. 15	

Total number of rodents captured to Dec. 19..... 198,032
 Total number of rodents examined to Dec. 19..... 172,934

Rodent cases to Dec. 19, by species:

Mus rattus.....	11
Mus musculus.....	1
Mus alexandrinus.....	4
Mus norvegicus.....	194

Total rodent cases to Dec. 19..... 210

WASHINGTON—SEATTLE.

The following reports of plague-eradivative work at Seattle have been received from Surg. Lloyd, of the United States Public Health Service, in charge of the work:

Week Ended Dec. 5, 1914.

RAT PROOFING.		WATER FRONT—continued.	
New buildings inspected.....	53	Defective rat guards repaired.....	12
Basements concreted, new buildings (16), square feet.....	29,626	Vessels searched for dead rats.....	3
Floors concreted, new buildings (12), square feet.....	61,442	Dead rats recovered after fumigation.....	15
Yards, etc., concreted, new structures (10), square feet.....	2,496	Fumigation certificates issued.....	3
Sidewalks concreted..... square feet.....	29,280	Canal Zone certificates issued.....	3
Total concrete laid, new structures, square feet.....	122,844	Port sanitary statements issued.....	54
New buildings elevated.....	7	LABORATORY AND RODENT OPERATIONS.	
New premises rat proofed, concrete.....	28	Dead rodents received.....	34
Old buildings inspected.....	6	Rodents trapped and killed.....	344
Old buildings rat proofed.....	2	Total.....	378
Wooden floors removed.....	1	Rodents examined for plague infection.....	295
Buildings razed.....	3	Rodents proven plague infected.....	0
WATER FRONT.		Blocks poisoned.....	25
Vessels inspected and histories recorded...	6	Poison distributed, pounds.....	55
Vessels fumigated.....	3	Human bodies examined for plague infection..	2
Sulphur used, pounds.....	2,300	Bodies showing infection.....	0
New rat guards installed.....	18	CLASSIFICATION OF RODENTS.	
		Mus rattus.....	6
		Mus alexandrinus.....	84
		Mus norvegicus.....	220
		Mus musculus.....	68

The usual day and night patrol was maintained to enforce rat guarding and fending.

Rodents examined in Tacoma.

Mus norvegicus trapped.....	4
Mus norvegicus found dead.....	13
Total.....	17
Rodents examined for plague infection.....	17
Rodents proven plague infected.....	0

Week ended Dec. 12, 1914.

RAT PROOFING.		WATER FRONT—continued.	
New buildings inspected.....	63	Vessels searched for dead rats.....	2
Basements concreted, new buildings (17), square feet.....	30,541	Dead rats recovered after fumigation.....	8
Floors concreted, new buildings (15), square feet.....	54,954	Fumigation certificates issued.....	2
Yards, etc., concreted, new structures (5), square feet.....	2,404	Canal Zone certificates issued.....	3
Sidewalks concreted..... square feet.....	1,000	Port sanitary statements issued.....	51
Total concrete, new structures do.....	88,899	LABORATORY AND RODENT OPERATIONS.	
New buildings elevated.....	11	Dead rodents received.....	33
New premises rat proofed, concrete.....	37	Rodents trapped and killed.....	390
Old buildings inspected.....	4	Total.....	429
Old buildings rat proofed.....	1	Rodents examined for plague infection.....	365
Wooden floors removed.....	2	Rodents proven plague infected.....	0
Openings screened.....	12	Blocks poisoned.....	24
Buildings razed.....	4	Poison distributed..... pounds..	71
		Human bodies examined for plague infection.....	2
		Bodies showing infection.....	0
		CLASSIFICATION OF RODENTS.	
		Mus rattus.....	10
		Mus alexandrinus.....	62
		Mus norvegicus.....	319
		Mus musculus.....	46
		Shrews.....	1

The usual day and night patrol was maintained to enforce rat guarding and fending.

Rodents examined in Tacoma.

Mus norvegicus trapped.....	6
Mus norvegicus found dead.....	18
Mus rattus found dead.....	1
Mus alexandrinus found dead.....	2
Total.....	27
Rodents examined for plague infection.....	27
Rodents proven plague infected.....	0

HAWAII.

The following reports of plague-eradivative work in Hawaii have been received from Surg. Trotter, of the United States Public Health Service:

Honolulu.

WEEK ENDED NOV. 28, 1914.

Total rats and mongoose taken.....	401	Classification of rats trapped:	
Rats trapped.....	396	Mus alexandrinus.....	160
Mongoose trapped.....	3	Mus musculus.....	175
Examined microscopically.....	313	Mus norvegicus.....	51
Showing plague infection.....	0	Mus rattus.....	12
		Average number of traps set daily.....	1,085
		Cost per rat destroyed.....	\$0.21½

WEEK ENDED DEC. 5, 1914.

Total rats and mongoose taken.....	451	Classification of rats trapped—Continued.	
Rats trapped.....	441	Mus musculus.....	169
Mongoose trapped.....	6	Mus norvegicus.....	56
Rats killed by sulphur dioxide.....	4	Mus rattus.....	23
Examined microscopically.....	357	Classification of rats killed by sulphur dioxide:	
Showing plague infection.....	0	Mus alexandrinus.....	2
Classification of rats trapped:		Mus musculus.....	1
Mus alexandrinus.....	193	Mus rattus.....	1

WEEK ENDED DEC. 12, 1914.

Total rats and mongoose taken.....	454	Classification of rats killed by sulphur dioxide:	
Rats trapped.....	439	Mus rattus.....	10
Mongoose trapped.....	4	Average number of traps set daily.....	1,085
Rats found dead (Mus alexandrinus)....	1	Cost per rat destroyed, 1 $\frac{2}{3}$ cents.	
Rats killed by sulphur dioxide.....	10	Last case rat plague Alea, 9 miles from Honolulu,	
Examined microscopically.....	371	April 12, 1910.	
Showing plague infection.....	0	Last case human plague, Honolulu, July 12, 1910.	
Classification of rats trapped:		Last case rat plague, Kalopa stable, Paauhau,	
Mus alexandrinus.....	184	Hawaii, August 29, 1914.	
Mus musculus.....	190	Last case human plague, Paauhau Landing,	
Mus norvegicus.....	47	Hawaii, August 17, 1914.	
Mus rattus.....	18		

Hilo.

WEEK ENDED NOV. 28, 1914.

Rats and mongoose taken.....	2,385	Rats and mongoose plague infected.....	0
Rats trapped.....	2,360	Classification of rats trapped and found dead:	
Rats found dead.....	5	Mus norvegicus.....	487
Mongoose taken.....	20	Mus alexandrinus.....	246
Rats and mongoose examined macroscopic-		Mus rattus.....	619
ally.....	2,385	Mus musculus.....	1,013

WEEK ENDED DEC. 5, 1914.

Rats and mongoose taken.....	1,893	Classification of rats trapped and found dead:	
Rats trapped.....	1,875	Mus norvegicus.....	371
Rats found dead.....	1	Mus alexandrinus.....	151
Mongoose taken.....	17	Mus rattus.....	435
Rats and mongoose examined macroscopic-		Mus musculus.....	919
ally.....	1,893	Last case of rat plague, Paauhau Sugar Co., Aug.	
Rats and mongoose plague infected.....	0	29, 1914.	
		Last case of human plague, Paauhau Sugar Co.,	
		August 16, 1914.	

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.

IN CERTAIN STATES AND CITIES.

CEREBROSPINAL MENINGITIS.

Virginia—Blackwood, Wise County.

The State Board of Health of Virginia reported that 5 cases of cerebrospinal meningitis had been notified at Blackwood, Wise County, Va., since November 24, 1914. All the cases occurred in the vicinity of mining and lumber camps located near Blackwood.

State Reports for November, 1914.

Places.	New cases reported.	Places.	New cases reported.
Iowa:		Mississippi:	
Henry County.....	1	Adams County.....	1
Iowa County.....	1	Itawamba County.....	2
Total.....	2	Lowndes County.....	1
		Monroe County.....	1
		Total.....	5

City Reports for Week Ended Dec. 19, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Baltimore, Md.....		1	Milwaukee, Wis.....	1	1
Boston, Mass.....		1	New York, N. Y.....	2	4
Chicago, Ill.....	2		Philadelphia, Pa.....	1	1
Cincinnati, Ohio.....	1		Phoenix, Ariz.....	1	1
Detroit, Mich.....		1	Providence, R. I.....		
Lexington, Ky.....		1	St. Louis, Mo.....	1	

DIPHTHERIA.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 112.

ERYSIPELAS.

City Reports for Week Ended Dec. 19, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Ann Arbor, Mich.....	1		Los Angeles, Cal.....	4	1
Baltimore, Md.....		1	Milwaukee, Wis.....	1	1
Buffalo, N. Y.....	3		New York, N. Y.....		5
Charleston, S. C.....		1	Passaic, N. J.....	1	
Chicago, Ill.....	26		Philadelphia, Pa.....	11	3
Cincinnati, Ohio.....	3		Pittsburgh, Pa.....	6	
Cleveland, Ohio.....	5		Providence, R. I.....		1
Detroit, Mich.....	1	1	St. Louis, Mo.....	6	1
Erie, Pa.....	3		South Bethlehem, Pa.....	1	
Harrisburg, Pa.....	1		Springfield, Ill.....	1	
Kalamazoo, Mich.....	1		Trenton, N. J.....	1	
Kansas City, Mo.....	1		Zanesville, Ohio.....	1	

LEPROSY.

Hawaii Report for November, 1914.

The Territorial Board of Health of Hawaii reported that during the month of November, 1914, leprosy had been reported in Hawaii as follows: One case at Honolulu and one case in Waiialua district, Island of Oahu; one case in Hamakua district, Island of Hawaii; one case in Hanalei district and one case in Kawaihau district, Island of Kauai.

MALARIA.

State Reports for November, 1914.

Places.	New cases reported.	Places.	New cases reported.
Arkansas.....	291	Mississippi—Continued.	
Mississippi:		Lefflore County.....	320
Adams County.....	54	Lincoln County.....	40
Alcorn County.....	47	Lowndes County.....	211
Amite County.....	42	Madison County.....	64
Attala County.....	82	Marion County.....	148
Benton County.....	7	Marshall County.....	49
Bolivar County.....	690	Monroe County.....	118
Calhoun County.....	38	Montgomery County.....	24
Carroll County.....	193	Neshoba County.....	71
Chickasaw County.....	84	Newton County.....	25
Choctaw County.....	85	Noxubee County.....	48
Claiborne County.....	79	Oktibbeha County.....	103
Clarke County.....	50	Panola County.....	195
Clay County.....	48	Pearl River County.....	15
Coahoma County.....	473	Perry County.....	91
Copiah County.....	80	Pike County.....	70
Covington County.....	92	Pontotoc County.....	55
De Soto County.....	25	Prentiss County.....	48
Forrest County.....	196	Quitman County.....	187
Franklin County.....	91	Rankin County.....	6
George County.....	45	Scott County.....	42
Greene County.....	43	Sharkey County.....	70
Grenada County.....	60	Simpson County.....	35
Hancock County.....	83	Smith County.....	48
Harrison County.....	126	Sunflower County.....	800
Hinds County.....	216	Tallahatchie County.....	287
Holmes County.....	283	Tate County.....	188
Issaquena County.....	23	Tippah County.....	55
Itawamba County.....	24	Tishomingo County.....	52
Jackson County.....	48	Tunica County.....	185
Jasper County.....	61	Union County.....	27
Jefferson County.....	88	Warren County.....	318
Jefferson Davis County.....	38	Washington County.....	393
Jones County.....	160	Wayne County.....	60
Kemper County.....	78	Wilkinson County.....	44
Lafayette County.....	88	Winston County.....	82
Lamar County.....	58	Yalobusha County.....	99
Lauderdale County.....	173	Yazoo County.....	409
Lawrence County.....	78	Walsh County.....	9
Leake County.....	57	Total.....	9,502
Lee County.....	116		

MEASLES.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 112.

PELLAGRA.

State Reports for November, 1914.

Places.	New cases reported.	Places.	New cases reported.
Arkansas.....	19	Mississippi—Continued.	
Mississippi:		Leflore County.....	10
Adams County.....	8	Lincoln County.....	13
Alcorn County.....	5	Lowndes County.....	5
Amite County.....	2	Madison County.....	6
Attala County.....	3	Marion County.....	3
Benton County.....	1	Marshall County.....	12
Bolivar County.....	65	Monroe County.....	18
Carroll County.....	9	Montgomery County.....	2
Chickasaw County.....	8	Neshoba County.....	3
Choctaw County.....	1	Newton County.....	6
Claiborne County.....	1	Noxubee County.....	7
Clay County.....	5	Panola County.....	5
Coahoma County.....	18	Pearl River County.....	1
Copiah County.....	13	Perry County.....	1
Covington County.....	11	Pike County.....	6
De Soto County.....	7	Pontotoc County.....	2
Forrest County.....	21	Prentiss County.....	2
Franklin County.....	4	Quitman County.....	11
George County.....	1	Scott County.....	2
Grenada County.....	2	Simpson County.....	2
Hancock County.....	17	Smith County.....	2
Harrison County.....	59	Sunflower County.....	26
Hinds County.....	21	Tallahatchie County.....	25
Holmes County.....	9	Tate County.....	3
Itawamba County.....	2	Tippah County.....	2
Jasper County.....	1	Tishomingo County.....	5
Jefferson County.....	2	Tunica County.....	12
Jefferson Davis County.....	2	Union County.....	3
Jones County.....	13	Warren County.....	17
Kemper County.....	4	Washington County.....	17
Lamar County.....	3	Winston County.....	1
Lauderdale County.....	19	Yalobusha County.....	1
Lawrence County.....	5	Yazoo County.....	11
Leake County.....	2	Walthall County.....	2
Lee County.....	11	Total.....	603

PNEUMONIA.

City Reports for Week Ended Dec. 19, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Binghamton, N. Y.....	5	3	Newport News, Va.....	1	1
Chicago, Ill.....	121	58	Northampton, Mass.....	2	2
Cleveland, Ohio.....	20	14	Philadelphia, Pa.....	26	53
Detroit, Mich.....	1	8	Pittsburgh, Pa.....	10	25
Galesburg, Ill.....	1	1	Rochester, N. Y.....	3	3
Kalamazoo, Mich.....	4	3	Sacramento, Cal.....	4	4
Kansas City, Mo.....	2	12	Schenectady, N. Y.....	4	3
Lancaster, Pa.....	2	.....	South Bethlehem, Pa.....	2	.....
Los Angeles, Cal.....	17	13	Springfield, Ill.....	2	2
Marinette, Wis.....	2	2	Wilkinsburg, Pa.....	1	.....
New Castle, Pa.....	1	.....	Wilmington, N. C.....	1	7
Newport, Ky.....	2	2			

POLIOMYELITIS (INFANTILE PARALYSIS).

State Reports for November, 1914.

Places.	New cases reported.	Places.	New cases reported.
Iowa:		Mississippi—Continued.	
Iowa County.....	1	Itawamba County.....	2
Mississippi:		Monroe County.....	2
Adams County.....	4	Total.....	9
Coahoma County.....	1		

SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 112.

SMALLPOX.

Miscellaneous State Reports.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Arkansas (Nov. 1-30):			Iowa—Continued.		
Counties—			Counties—		
Carroll.....	1		Van Buren.....	4	
Clay.....	1		Washington.....	1	
Crittenden.....	4		Winnebago.....	1	
Ouachita.....	7		Total.....	163	
Pulaski.....	2				
Scott.....	3		Mississippi (Nov. 1-30):		
Total.....	18		Counties—		
Iowa (Nov. 1-30):			Adams.....	1	
Counties—			Clay.....	1	
Blackhawk.....	1		Harrison.....	1	
Bremer.....	2		Hinds.....	1	
Cass.....	7		Lauderdale.....	1	
Cherokee.....	1		Leflore.....	1	
Clarke.....	1		Marion.....	11	
Crawford.....	1		Monroe.....	27	
Des Moines.....	1		Pontotoc.....	1	
Fayette.....	1		Quitman.....	1	
Ida.....	8		Rankin.....	24	
Keokuk.....	16		Sunflower.....	11	
Linn.....	3		Total.....	81	
Montgomery.....	2		North Dakota (Nov. 1-30):		
Muscataine.....	1		Counties—		
O'Brien.....	1		Adams.....	2	
Polk.....	17		Pembina.....	1	
Pottawattamie.....	91		Total.....	3	
Scott.....	2				
Shelby.....	1				

City Reports for Week Ended Dec. 19, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Altoona, Pa.....	1		Marinette, Wis.....	1	
Ann Arbor, Mich.....	2		Milwaukee, Wis.....	31	
Charleston, S. C.....	1		Moline, Ill.....	1	
Detroit, Mich.....	3		Muncie, Ind.....	3	
Evansville, Ind.....	2		Newport, Ky.....	1	
Galveston, Tex.....	1		Roanoke, Va.....	1	
Grand Rapids, Mich.....	1		St. Louis, Mo.....	1	
Harrisburg, Pa.....	1		San Diego, Cal.....	1	
Kansas City, Mo.....	1				

TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 112.

TYPHOID FEVER.

State Reports for November, 1914.

Places.	New cases reported.	Places.	New cases reported.
Arkansas:		Mississippi—Continued.	
Ashley County.....	6	Jackson County.....	4
Calhoun County.....	4	Jasper County.....	2
Carroll County.....	5	Jefferson County.....	1
Conway County.....	4	Jefferson Davis County.....	4
Cross County.....	1	Jones County.....	23
Drew County.....	8	Kemper County.....	3
Faulkner County.....	8	Lafayette County.....	29
Franklin County.....	3	Lamar County.....	5
Hot Springs County.....	4	Lauderdale County.....	19
Howard County.....	2	Lawrence County.....	5
Independence County.....	5	Leake County.....	5
Izard County.....	3	Lee County.....	21
Lafayette County.....	1	Leflore County.....	4
Laurence County.....	5	Lincoln County.....	7
Lee County.....	7	Lowndes County.....	4
Little River County.....	2	Madison County.....	7
Logan County.....	1	Marion County.....	5
Perry County.....	6	Marion County.....	15
Polk County.....	4	Marshall County.....	21
Pulaski County.....	13	Monroe County.....	6
St. Francis County.....	4	Montgomery County.....	1
Sebastian County.....	10	Neshoba County.....	4
Stone County.....	2	Newton County.....	4
Washington County.....	13	Noxubee County.....	4
White County.....	3	Oktibeha County.....	4
		Panola County.....	14
Total.....	124	Perry County.....	8
		Pike County.....	7
Hawaii:		Pontotoc County.....	30
Hawaii—		Prentiss County.....	16
Hamakua district.....	2	Prentiss County.....	5
Hilo.....	1	Scott County.....	1
South Hilo district.....	1	Sharkey County.....	2
Kauai—		Simpson County.....	6
Makawali district.....	1	Smith County.....	19
Waimea district.....	3	Sunflower County.....	12
Maui—		Tallahatchie County.....	17
Puunene and Kihei districts.....	1	Tate County.....	24
Oahu—		Tippah County.....	15
Ewa district.....	1	Tishomingo County.....	2
Honolulu.....	10	Tunica County.....	7
Koolauloa district.....	2	Union County.....	5
Waialua district.....	1	Warren County.....	5
Total.....	23	Washington County.....	12
		Wilkinson County.....	4
Mississippi:		Winston County.....	10
Adams County.....	2	Yalobusha County.....	11
Alcorn County.....	16	Yazoo County.....	6
Amité County.....	2	Walthall County.....	7
Attala County.....	12	Total.....	661
Benton County.....	5		
Bolivar County.....	20	North Dakota:	
Calhoun County.....	4	Benson County.....	5
Carroll County.....	4	Burleigh County.....	4
Chickasaw County.....	13	Cass County.....	4
Chectaw County.....	5	Golden Valley County.....	1
Claiborne County.....	1	Grand Forks County.....	3
Clay County.....	5	Griggs County.....	1
Cochosma County.....	6	McKenzie County.....	1
Copiah County.....	18	Oliver County.....	2
Covington County.....	3	Pembina County.....	2
De Soto County.....	16	Pierce County.....	6
Forrest County.....	4	Ramsey County.....	7
Franklin County.....	6	Ransom County.....	2
Grenada County.....	10	Richland County.....	1
Hancock County.....	2	Sargent County.....	5
Harrison County.....	21	Sheridan County.....	4
Hinds County.....	14	Stark County.....	1
Holmes County.....	18	Trall County.....	1
Issaquena County.....	2	Williams County.....	6
Itawamba County.....	9	Total.....	55

TYPHOID FEVER—Continued.

City Reports for Week Ended Dec. 19, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Altoona, Pa.	1		Newark, N. J.	2	1
Aurora, Ill.	1		New Bedford, Mass.	1	1
Baltimore, Md.	9	2	New Castle, Pa.	2	
Boston, Mass.	8	1	New Orleans, La.	6	2
Brockton, Mass.	2		New York, N. Y.	30	5
Buffalo, N. Y.	6		Norfolk, Va.	2	1
Cambridge, Mass.	2		Norristown, Pa.		1
Charleston, S. C.	2	1	North Adams, Mass.		1
Chicago, Ill.	26	3	Oakland, Cal.	1	
Cincinnati, Ohio.	1		Passaic, N. J.		
Cleveland, Ohio.	3		Perth Amboy, N. J.	2	
Cumberland, Md.		1	Philadelphia, Pa.	12	3
Detroit, Mich.	5	2	Phoenix, Ariz.	1	
East Orange, N. J.	1	1	Pittsburgh, Pa.	3	1
Grand Rapids, Mich.		1	Providence, R. I.	6	1
Hartford, Conn.	6		Reading, Pa.	3	
Haverhill, Mass.	1	1	Richmond, Va.	1	2
Hilo, Hawaii.	1		Rochester, N. Y.		
Jersey City, N. J.	1	1	Rutland, Vt.	1	
Kansas City, Kans.	1		Sacramento, Cal.	3	1
Kansas City, Mo.	1		St. Louis, Mo.	5	2
Lexington, Ky.	1		Saratoga Springs, N. Y.		1
Los Angeles, Cal.	5	1	South Bethlehem, Pa.	1	
Lowell, Mass.	1		Springfield, Ill.	3	
Lynn, Mass.	1	1	Springfield, Mass.	1	
Marinette, Wis.	1		Springfield, Ohio.		1
Medford, Mass.	1		Toledo, Ohio.	3	
Milwaukee, Wis.	4	1	Wilmington, N. C.	2	
Mobile, Ala.	1		Worcester, Mass.	3	
Montclair, N. J.	1		York, Pa.	2	
Nashville, Tenn.	1		Zanesville, Ohio.	1	

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for November, 1914.

States.	Diphtheria.	Measles.	Scarlet fever.
Arkansas	93	5	64
Hawaii	14		
Iowa	150		57
Mississippi	231	196	28
North Dakota	25	14	44

DIPHTHERIA MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended Dec. 19, 1914.

Cities.	Population as of July 1, 1914. (Estimated by United States Census Bureau.)	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.....	579,590	170	48	.....	.....	.....	25	1	32	20
Boston, Mass.....	733,802	264	96	4	78	1	65	3	54	24
Chicago, Ill.....	2,393,325	587	192	21	57	3	44	1	185	61
Cleveland, Ohio.....	639,431	163	72	2	1	.....	16	.....	18	20
Detroit, Mich.....	537,650	176	66	6	.....	1	31	1	13	17
New York, N. Y.....	1,409,365	24	184	4	183	7	.....	7	42	166
Philadelphia, Pa.....	1,657,810	483	75	11	74	4	29	.....	91	42
Pittsburgh, Pa.....	564,878	170	32	1	103	4	82	5	29	18
St. Louis, Mo.....	734,667	240	154	11	.....	.....	36	4	22	20
From 300,000 to 500,000 inhabitants:										
Buffalo, N. Y.....	454,112	117	19	6	6	.....	21	1	21	13
Cincinnati, Ohio.....	402,175	117	17	.....	3	.....	14	1	21	20
Los Angeles, Cal.....	438,914	117	20	.....	9	.....	13	.....	30	16
Milwaukee, Wis.....	417,054	101	27	3	3	.....	21	.....	20	20
Newark, N. J.....	389,106	112	37	2	12	.....	28	.....	31	16
New Orleans, La.....	361,221	185	39	10	.....	.....	.....	.....	27	29
From 200,000 to 300,000 inhabitants:										
Jersey City, N. J.....	293,921	95	21	.....	.....	11	.....	.....	14	18
Kansas City, Mo.....	281,911	92	19	2	.....	2	.....	.....	3	7
Portland, Oreg.....	260,601	46	5	1	1	.....	.....	.....	5	3
Providence, R. I.....	245,090	79	14	4	11	.....	16	1	7	7
Rochester, N. Y.....	241,618	58	10	2	17	.....	9	.....	6	9
From 100,000 to 200,000 inhabitants:										
Cambridge, Mass.....	110,357	30	11	.....	15	1	7	.....	6	6
Camden, N. J.....	102,466	.....	6	.....	14	.....	.....	.....	7	.....
Dayton, Ohio.....	123,794	36	7	.....	14	.....	7	.....	2	3
Grand Rapids, Mich.....	123,227	21	4	1	.....	.....	1	.....	1	1
Hartford, Conn.....	107,038	30	4	.....	1	.....	1	.....	5	2
Lowell, Mass.....	111,004	39	2	1	.....	.....	.....	.....	2	2
Nashville, Tenn.....	114,899	38	2	1	.....	.....	2	.....	1	2
New Bedford, Mass.....	111,230	23	1	.....	.....	5	.....	6	2	2
Oakland, Cal.....	183,002	42	(1)	.....	2	.....	.....	.....	6	5
Reading, Pa.....	103,361	24	2	.....	1	.....	2	.....	4	2
Richmond, Va.....	134,917	64	11	.....	1	.....	1	.....	9	4
Springfield, Mass.....	100,375	27	6	1	1	.....	1	.....	2	3
Toledo, Ohio.....	184,126	61	7	1	3	.....	2	1	9	12
Trenton, N. J.....	106,831	36	4	.....	.....	1	.....	2	1	1
Worcester, Mass.....	157,732	40	4	.....	7	.....	1	.....	5	1
From 50,000 to 100,000 inhabitants:										
Altoona, Pa.....	56,553	18	3	.....	.....	.....	.....	.....	1	3
Atlantic City, N. J.....	53,952	12	2	.....	.....	.....	.....	.....	3	.....
Bayonne, N. J.....	65,271	13	6	.....	.....	3	.....	.....	4	.....
Berkeley, Cal.....	52,105	7	3	1	4	.....	.....	.....	.....	.....
Binghamton, N. Y.....	52,191	23	6	.....	1	.....	1	.....	1	.....
Brockton, Mass.....	64,043	19	15	3	.....	.....	1	.....	2	1
Charleston, S. C.....	60,121	35	4	.....	.....	.....	.....	.....	2	2
Duluth, Minn.....	89,331	3	3	.....	1	.....	2	.....	2	1
Erie, Pa.....	72,401	25	2	.....	.....	5	.....	.....	2	.....
Evansville, Ind.....	71,284	15	3	.....	15	3	1	1	1	1
Harrisburg, Pa.....	69,493	18	7	.....	1	.....	.....	.....	5	1
Johnstown, Pa.....	64,642	24	4	3	.....	.....	3	.....	.....	.....
Kansas City, Kans.....	94,271	9	9	.....	.....	.....	3	.....	4	.....
Little Rock, Ark.....	53,811	23	1	.....	.....	2	.....	.....	.....	.....
Lynn, Mass.....	98,207	27	2	.....	1	.....	3	.....	1	2
Mobile, Ala.....	55,573	26	2	.....	.....	.....	.....	.....	2	4
New Britain, Conn.....	50,612	2	2	.....	.....	1	.....	.....	2	2
Norfolk, Va.....	86,540	6	6	.....	.....	.....	.....	.....	.....	3
Passaic, N. J.....	66,276	15	6	1	.....	.....	1	.....	2	1
Schenectady, N. Y.....	90,503	31	3	1	94	.....	.....	.....	1	4
South Bend, Ind.....	65,114	1	1	.....	.....	.....	1	.....	.....	1
Springfield, Ill.....	57,972	25	3	.....	6	.....	4	.....	1	1
Springfield, Ohio.....	50,558	14	3	1	.....	.....	1	.....	.....	.....
Wilkes-Barre, Pa.....	73,660	22	2	1	2	.....	3	.....	.....	3
From 25,000 to 50,000 inhabitants:										
Alameda, Cal.....	26,330	6	.....	.....	16	.....	.....	.....	.....	.....
Aurora, Ill.....	33,022	14	9	1	.....	.....	.....	.....	.....	1
Brookline, Mass.....	31,138	14	.....	.....	.....	.....	2	.....	2	1
Chelsea, Mass.....	32,452	9	1	.....	3	.....	.....	.....	1	1
Chicopee, Mass.....	28,067	7	.....	1	.....	.....	9	.....	1	1
East Orange, N. J.....	39,852	2	2	.....	2	.....	1	.....	1	2
Elgin, Ill.....	27,485	8	1	.....	.....	.....	.....	.....	.....	2

1 Carrier.

FOREIGN REPORTS.

BRAZIL.

Plague—Rio de Janeiro.

A case of plague was reported at Rio de Janeiro January 5, 1914.

INDIA.

Mortality—Plague—Plague Measures—Mosquito Work—Karachi.

During the period, April–June, 1914, 1,597 deaths were notified at Karachi, 424 of these being caused by plague (corresponding period for the preceding year, 1,345 total deaths with 219 deaths due to plague). The number of rats destroyed was 11,932 (same period for the preceding year, 23,892). The total number of inoculations against plague was 576 (for the same period of the preceding year, 3,154).

A mosquito brigade has been in operation throughout the city since April 1, 1914. The city is divided into 10 sections and each section is further subdivided into 10 beats. One beat of each section is examined daily to find the places where mosquitoes breed and take necessary action to exterminate them. Each section is in charge of a subinspector, and these subinspectors are directly under the control of the malaria inspector, who supervises the work and submits his daily report to the health officer. The whole city is in this way inspected within 10 days, i. e., three times a month. The number of places where larvæ of mosquitoes are found breeding averages about 30 a day, and such places as drains, masonry tanks, etc., are cleaned out with oil emulsion and larvæ destroyed.

Out of a total number of 394 wells existing in the city about 163 wells have been found contaminated with larvæ of mosquitoes. Action is being taken to provide these wells with proper wooden covers and trapdoors or pumps, so that when required the water can be drawn off the well through the trapdoor or by means of a pump. In many of the offices and business places fire buckets are kept, and mosquitoes are found breeding in such buckets in enormous number. Persons in charge are informed accordingly and advised to issue instructions to their men to empty these buckets at least once a week.

JAPAN.

Communicable Diseases.

Communicable diseases were notified in the Empire of Japan, exclusive of the island of Taiwan, for the month of October, 1914, as follows:

Diseases.	Cases.	Deaths.	Total from Jan. 1, 1914.	
			Cases.	Deaths.
Cholera.....	1	11	5	4
Diphtheria.....	1,807	393	13,808	3,472
Dysentery.....	3,666	954	22,904	4,858
Paratyphoid fever.....	776	124	5,880	647
Plague.....			82	69
Scarlet fever.....	99	3	1,029	60
Smallpox.....	25	4	450	102
Typhoid fever.....	4,581	910	29,628	5,310
Typhus fever.....	31	5	7,281	1,222

¹ Kyoto-fu.² Nagasaki-ken.

LIBYA (TRIPOLI).

Further Relative to Plague on Vessel—Tripoli.

Referring to the case of plague reported December 3, 1914, on the steamship *Misurata* in harbor at Tripoli (Public Health Reports, Dec. 11, 1914, p. 3341), it has been further stated that the *Misurata* arrived at Tripoli November 28, 1914, from the following-named ports in Libya: Tobruk, Derna, Marsa-Susa, Tolmetta, Bengasi, Syrte, Misurata, and Homs, with a case of plague on board. Infected rats have also been reported as found on the vessel. Plague is reported to have appeared at Derna and Marsa-Susa among native laborers.

MEXICO.

Smallpox—Ciudad Juarez.

Smallpox was reported present at Ciudad Juarez December 4, 1914.

Epidemic of Virulent Smallpox—Vera Cruz.

An epidemic of virulent smallpox was reported present at Vera Cruz, January 5, 1914. The disease was reported to be spreading rapidly. The infection was imported by the military.

VENEZUELA.

Yellow Fever—Caracas.

Two cases of yellow fever were reported at Caracas, December 31, 1914.

ZANZIBAR.

Plague—Plague-Infected Rats—Zanzibar.

During the week ended October 31, 1914, 2 cases of plague and 3 deaths from the disease were notified at Zanzibar.

During the three weeks ended November 7, 1914, 2,652 rats were examined at Zanzibar. Of this number, 29 were found plague infected.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.Reports Received During Week Ended Jan. 8, 1915.¹**CHOLERA.**

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary: Crown lands.....				Total, Oct. 18-Nov. 21: Cases, 2,705; deaths, 754.
Lower Austria— Vienna.....	Oct. 18-Nov. 21...	285	31	
Hungary.....				Total, Oct. 18-Nov. 14: Cases, 1,558.
India: Calcutta.....	Nov. 8-14.....		7	And vicinity—Nov. 3-16: Cases, 4; deaths, 3.
Madras.....	Nov. 8-21.....	114	79	
Indo-China: Saigon.....				Total, Jan. 1-Oct. 4: Cases, 5; deaths, 4.
Japan.....				
Kyoto fu.....	Oct. 1-31.....	1	1	
Siam: Bangkok.....	Sept. 27-Oct. 31.....		5	

YELLOW FEVER.

Venezuela: Caracas.....	Dec. 31.....	2		
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PLAGUE.

Brazil: Rio de Janeiro.....	Jan. 5.....	1		Total Jan. 1-Nov. 28: Cases, 218; deaths, 110.
Egypt: Alexandria.....	Nov. 5-28.....	1	1	
Port Said.....	Oct. 22.....	6	2	
India: Bassein.....	Jan. 4-Oct. 17.....	11	7	Not previously reported.
Bombay.....	Nov. 15-21.....	4	4	Saigon and vicinity, Nov. 3-16: Cases, 2.
Indo-China.....				
Libya (Tripoli).....				Present in Derra and Marsa-Susa, among native laborers.
Siam: Bangkok.....	Sept. 27-Oct. 31.....		1	
Turkey in Asia: Bagdad.....	Nov. 17.....	1		
Zanzibar.....	Oct. 25-31.....	2	3	

SMALLPOX.

Brazil: Rio de Janeiro.....	Nov. 15-21.....	118	38	Epidemic.
Egypt: Alexandria.....	Nov. 19-Dec. 2.....	17	2	
Greece: Patras.....	Dec. 1-6.....		5	
India: Bombay.....	Nov. 15-21.....	1		
Calcutta.....	Nov. 8-14.....		3	
Madras.....	Nov. 8-21.....	3	3	Jan. 1-Oct. 31: Cases, 450; deaths, 102.
Japan.....				
Nagasaki ken.....	Oct. 1-31.....	25	4	
Mexico: Chihuahua.....	Dec. 15-21.....	6	2	Epidemic.
Veracruz.....	Jan. 5.....			
Portugal: Lisbon.....	Nov. 22-Dec. 5.....	5		
Russia: Petrograd.....	Nov. 15-21.....	27	10	
Spain: Barcelona.....	Nov. 22-Dec. 4.....		10	
Madrid.....	Nov. 1-30.....		4	
Switzerland: Basel.....	Nov. 7.....	5		

¹ From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 26, 1914, to Jan. 1, 1915.¹

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Dutch East Indies:				
Celebes—				
Menado.....	Oct. 18-31.....	168	160	
Java—				
Batavia.....	Oct. 25-Nov. 7....	220	220	
Sumatra—				
Mengala.....	Oct. 18-24.....	60	47	
Palembang.....	do.....	62	49	
India:				
Bombay.....	Nov. 1-7.....	5	1	
Calcutta.....	Oct. 25-31.....	4	4	Not previously reported.
Do.....	Nov. 1-7.....	10	10	
Rangoon.....	Sept. 1-30.....	1	1	
Philippine Islands:				
Manila.....	Oct. 25-Nov. 14...	9	3	
Straits Settlements:				
Singapore.....	Oct. 4-10.....	1	1	

PLAGUE.

Brazil:				
Bahia.....	Nov. 16-Dec. 5....	8	6	
Ceylon:				
Colombo.....	Oct. 25-Nov. 22...	12	13	
India:				
Bombay.....	Nov. 1-14.....	3	1	
Karachi.....	Nov. 8-14.....	1	1	
Rangoon.....	Sept. 1-30.....	72	66	
Persia:				
Azerbaijan—				
Belessavar.....	Oct. 31.....			Present.
Turkey in Asia:				
Bagdad.....	Nov. 1-2.....	1	1	

SMALLPOX.

Arabia:				
Aden.....	Nov. 5-18.....	1	3	
Australia:				
New South Wales—				
Sydney.....				Total Nov. 13-19: Cases, 7 in the metropolitan area and 2 in the country districts.
Brazil:				
Rio de Janeiro.....	Nov. 1-14.....	215	71	
Canada:				
Ontario—				
Sarnia.....	Dec. 13-19.....	1		
Toronto.....	Dec. 6-19.....	3		
Quebec—				
Quebec.....	Dec. 13-19.....	2		
Ceylon:				
Colombo.....	Oct. 25-Nov. 7....	21	3	
China:				
Shanghai.....	Nov. 5-15.....	1	8	Deaths among natives.
Dutch East Indies:				
Borneo.....				Oct. 18-24: Cases, 112; deaths, 44, mainly in Pontianak. In the western part, including Batavia, Oct. 18-24: Cases, 807; deaths, 119.
Java.....				
Batavia.....	Oct. 18-24.....	30	10	
France:				
Paris.....	Nov. 15-21.....	2	2	
Great Britain:				
Cardiff.....	Nov. 30-Dec. 5....	5		
Greece:				
Patras.....	Nov. 23-29.....		3	
Saloniki.....	Nov. 15-21.....	12	6	

¹ For reports received from June 27, 1914, to Dec. 26, 1914, see PUBLIC HEALTH REPORTS for Dec. 25, 1914. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 26, 1914, to Jan. 1, 1915—Continued.****SMALLPOX—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Nov. 1-14	8	4	
Calcutta	Oct. 25-Nov. 7	9		
Madras	Nov. 1-7	1		
Japan:				
Taiwan	Oct. 25-Nov. 7	7		
Mexico:				
Aguascalientes	Dec. 7-13		2	
Juarez	Dec. 4		2	Prevalent.
Vera Cruz	Dec. 1-13		2	
Norway:				
Christiansand	Nov. 1-30	7	2	Including report, vol. 29.
Stavanger	Nov. 30-Dec. 5	1		
Russia:				
Petrograd	Oct. 25-Nov. 8	66	16	
Spain:				
Valencia	Nov. 15-28	44	4	
Straits Settlements:				
Singapore	Oct. 10-17	2	1	
Turkey in Asia:				
Beirut	Nov. 1-21	14	6	
Haifa	Nov. 2-8	2	1	

SANITARY LEGISLATION.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

LORAIN, OHIO.

Milk and Cream—Production, Care, and Sale. (Ord. 1770, June 16, 1914.)

SECTION 1. No person shall bring into the city of Lorain for sale or shall sell or offer for sale any milk or cream without a permit from the Lorain Board of Health.

SEC. 2. No cows shall be kept in the city of Lorain without a permit from the board of health, said permit to be renewed semiannually, in January and July, the fee to be 50 cents per calendar year or fractional part thereof.

SEC. 3. No person shall bring into the city of Lorain for sale or shall sell or offer for sale any milk which has been obtained from any milk dealer, dairyman, or other person not having a permit issued by the board of health.

SEC. 4. A fee of 50 cents shall be charged for each permit, the same to be credited to the general health fund.

SEC. 5. Permits shall be renewed semiannually, in January and July. The applicant must state his name, residence, post-office address, and location of his business place or places.

SEC. 6. The applicant must state the number of cows from which milk is obtained for sale and the number of quarts (estimated) sold daily.

SEC. 7. If the applicant buys part or all of his milk supply, the names and addresses of all persons from whom he obtains milk or cream and the quantity (estimated) shall be stated.

SEC. 8. Any dairyman, milk dealer, or other person, upon application to the health officer for a permit to sell or deliver milk shall file a sworn statement, giving his name and address, the number of cows he owns or has charge of, the average amount of milk (estimated) which he sells each day, the names of all persons from whom he buys milk, the average amount of milk (estimated) which he buys from them each day.

SEC. 9. The board of health will not issue any permit unless it is satisfied, after inspection, with the cleanly and sanitary condition of the stables, cows, wagons, store, or places of business of the applicant therefor and with all the utensils used by him, and that the food given the cows is pure and wholesome and that all the persons engaged in the care and handling of the milk are free from any contagious disease and that said persons use due cleanliness in their work.

SEC. 10. All applications must be signed by the applicant and when received by the board of health must be placed on file and the name of such applicant shall be entered in a book of registration kept for that purpose. As soon as possible within 14 days after an application is received at the health office for a permit to sell milk the dairy and food inspector shall visit the dairy or place of business of such applicant and make such observation and gather such information as to enable the board to satisfy themselves of the sanitary condition of his dairy. Should the applicant live

at such distance from the city of Lorain as to make it impracticable for the dairy and food inspector to visit such dairy premises, such applicant shall furnish evidence satisfactory to the board of the sanitary condition of his dairy.

SEC. 11. If after issuing a permit to sell milk or cream, the board of health shall become satisfied that the provisions of the sanitary code are being violated, it will at once revoke the permit issued to such person or persons, and no new permit will be issued until all insanitary conditions have been rectified and all other provisions of the sanitary code are complied with. Anyone selling or handling milk or cream under a permit from the board of health who shall change location (this means changing producers or routes) without notifying the health officer or dairy and food inspector of such change shall have such permit revoked at the option of the board of health.

SEC. 12. *Milk tickets.*—If dairymen or other persons offering milk for sale use tickets as representations of value, these tickets must be in coupon form and must be destroyed after once using.

SEC. 13. *The stable and surroundings.*—The surroundings to the stable must be kept in sanitary condition. Cows must not be allowed to stand in manure or filth. The cow stable should be painted or whitewashed at least once a year. It must be kept free from dirt, dust, cobwebs, and odor. Manure and urine must be removed from the stable at least once daily, and if not taken to field daily must be removed at least 30 feet from stable and placed where the cows can not get into it. If horses are kept in same stable a tight partition should separate them from the cattle. No other animals or fowls will be allowed in the cow stable. Floors must be laid not less than 1 foot higher than outside surface level, so that good drainage can be procured. Floors must be constructed of asphalt, concrete, brick with surface flushed with cement or of wood, water-tight. They must be kept in good repair at all times and also constructed with a gutter not less than 12 inches wide and 6 inches deep; a 4-foot walk back of cows, and not less than a 20-inch manger in front. Ceilings must be dust tight and kept free from cobwebs.

Light.—The window area shall be at least 4 square feet per 500 cubic feet of air space, and shall be uniformly distributed if possible; if uniform distribution is impossible, sufficient additional window area must be provided, so that all portions of the barn shall be adequately lighted. Windows must be kept partly open if no other method of ventilation is provided for. Stable yards must be well drained and kept clean at all times.

SEC. 14. Cows must be kept clean; manure, litter, etc., must not be allowed to become caked on them; they must not be allowed to stand in nor wade through filth and manure. The bedding must be sufficient in quantity at all times to protect the animals from lying in filth.

SEC. 15. Any dairyman knowingly possessing or permitting a tuberculous animal to remain in his herd, or in the same building with a healthy herd, shall have his license or permit revoked by the board of health after proper proof of same.

SEC. 16. *Feed and water.*—Cows must be fed on clean, dry feed, neither decayed, moldy, dusty, distillery waste, nor starch waste. If malt is fed, it must not be fed when sour. Pure running spring water or ordinary well water, free from contamination, pumped into clean tanks or troughs, must be provided for drinking.

SEC. 17. Milkers must thoroughly wash and wipe their hands and the cows' udders before they begin milking. They must not use pails, cans, strainers, etc., unless they have been thoroughly washed in hot water and soap, or hot water and soda, and afterwards sterilized with boiling water or steam. Care must be taken that the seams of the vessels are thoroughly cleansed with a brush. It will be unlawful to use wooden pails.

They must refrain from milking or handling milk in any way when in themselves or in their families there is even a suspicion of any contagious or infectious disease, smallpox, scarlet fever, diphtheria, typhoid fever, tuberculosis, or the like.

SEC. 18. *Handling the milk.*—Immediately after milking the milk shall be removed from the stable into a milk house, aerated and cooled to at least 55° temperature, and put into perfectly clean bottles or cans. Dairymen who use both bottles and cans in delivering milk shall not fill bottles while on that delivery route. No person, firm, or corporation, except such as sell for consumption on the premises where sold, shall sell, offer for sale, expose for sale, or keep with intention of selling, any milk or cream unless such milk or cream is kept, offered for sale, exposed for sale, or sold in sanitary bottles tightly closed and capped and bottled at the dairy in a manner approved by the inspector of dairies.

The above paragraph relating to bottling shall not apply to bona fide dealers in milk or cream at wholesale, who shall sell at any one time a quantity of not less than 1 gallon of milk or 2 quarts of cream; nor to owners of one cow who sell milk on their premises only, in which case the milk shall be placed in receptacles furnished by the buyer.

SEC. 19. The milk house or milk room must not be attached by doorway to any other building and must be at least 50 feet from any cesspool or vault; must be provided with a tight floor, either concrete or wood, laid so as to provide drainage, and it must be kept clean at all times and free from odor and must be screened from flies.

SEC. 20. *Care of cans and bottles.*—All cans, bottles, dippers, or utensils used in the handling or disposition of milk must be thoroughly cleansed and afterwards sterilized by boiling water or steam before they are again used as receptacles for milk. Milk cans must be washed and cleansed immediately after the milk or cream is emptied from them. No person shall use a milk bottle for any other purposes. Bottles shall be collected daily in a thoroughly cleansed condition.

SEC. 21. No person shall bring into the city of Lorain for sale or offer for sale any milk—

- (a) Containing less than 12 per cent milk solids;
- (b) Containing more than 88 per cent of water or fluid;
- (c) Containing less than 3 per cent of milk fats;
- (d) From which any part of the cream has been removed;
- (e) Having a specific gravity of less than 1.029;
- (f) Containing any dirt, foreign matter, or sediment;
- (g) Containing any boracic or salicylic, formalin, or other foreign chemicals;
- (h) Containing any pathogenic bacteria;
- (i) Containing bacteria of any kind more than 150,000 per cubic centimeter;
- (j) Drawn from any cow having a communicable disease or showing clinical symptoms of tuberculosis or from a herd which contains any diseased cattle or are afflicted with or have been exposed to any communicable disease;
- (k) Drawn from any cow within 15 days before and 12 days after parturition;
- (l) Drawn from any cow which has been fed on garbage, refuse, swill, moist distillery waste, or other improper food;
- (m) Having a temperature, or which has been kept at a temperature, higher than 55° F.;
- (n) Which has existed or has been kept under conditions contrary to the provisions of this code;
- (o) No milk shall be kept, sold, or offered for sale drawn from cows suffering with sore or inflamed udders and teats or from cows diseased.

Provided, That the subdivisions (a), (b), (c), and (d) of this section shall not apply to milk sold under the name of skimmed milk.

SEC. 22. *Retailers.*—All grocers, bakers, or other persons having or offering for sale milk or cream shall at all times keep the names and addresses of the dairymen from whom the milk on sale was obtained. If skimmed milk is kept or offered for sale, each and every container of such milk shall be plainly marked with the words "Skimmed milk" in letters not less than 1 inch in height.

SEC. 23. (a) No person shall bring into the city of Lorain for sale or shall sell or offer for sale milk from which the cream has been removed, either in part or in whole, unless sold as skimmed milk and unless on two sides of the containers from which such milk is sold there appears in red letters, not less than 1 inch in height, the words "Skimmed milk."

(b) No person shall bring into the city of Lorain for sale or shall sell or offer for sale any so-called skimmed milk containing less than 9.3 per cent of milk solids.

SEC. 24. (a) No person shall ship or store any milk in any basement, cellar, refrigerator, milk house, dairy, or other place, unless such place have 1 square foot of window space to each 4 square feet of floor space, with a cement floor properly drained, and shall contain a vat made of nonabsorbent material large enough to store all milk. Windows and doors shall be provided from May 1 to October 1, inclusive, with sound screens of mesh sufficiently fine to keep out flies and other insects.

(b) No person shall store any milk in any basement, cellar, refrigerator, milk house, dairy, or other place which is within 15 feet of any water-closet or private vault or cesspool, or any horse or cow stable, or any chicken or poultry yard or coop, or any other objectionable condition.

SEC. 25. *Milk delivery wagons.*—No person shall use any vehicle for the delivery of milk in the city of Lorain which has not painted thereon in legible roman letters not less than 3 inches in height and on both sides of the vehicle in a conspicuous place the name and location of his dairy and the number of his permit; and if such vendor sells skimmed milk, each and every container of skimmed milk shall have the words "Skimmed milk" inscribed thereon in plain letters not less than 1 inch in height plainly visible to the prospective purchaser.

SEC. 26. Every person using in the sale or distribution of milk a delivery wagon or other vehicle shall keep the same at all times in a cleanly condition and free from any substance liable to contaminate or injure the purity of the milk, and from May 1 to October 1 shall have and keep over such delivery wagon or vehicle a covering of canvas or other material so arranged as to thoroughly protect the contents thereof from the rays and heat of the sun.

SEC. 27. *Sealed container—Wholesale delivery.*—No person or dealer shall sell, offer for sale, or deliver any milk, skimmed milk, cream, Dutch cheese, or other milk product in quantities exceeding 1 gallon unless the can or receptacle containing the same is securely sealed by lock and chain, wire, or other contrivance equally efficient: *Provided, however,* That the persons or dealers engaged exclusively in the wholesale delivery or sale of milk, buttermilk, whey, sour milk, cream, skimmed milk, Dutch cheese, or other milk products from wagons not carrying milk for retail customers may deliver the same from unsealed cans or receptacles: *And provided further,* That said wagon or wagons shall have inscribed conspicuously thereon in plain letters not less than 3 inches in height the words "Wholesale delivery."

SEC. 28. No person or milk dealer shall sell, deliver, or offer for sale any milk kept in a refrigerator or ice box unless such refrigerator or ice box has milk compartment separated by an impervious water and odor proof partition from all other compartments of said refrigerator or ice box; neither milk nor cream shall be kept in the same compartment with any other foodstuffs except butter and cheese.

SEC. 29. *Milk plants.*—(a) Construction floors must be made of asphalt, cement, or other smooth vitrified substance laid so as to allow ready drainage; walls and ceilings shall be smooth, tight, and kept painted in some light color; window space shall be equivalent to 10 per cent floor space.

(b) Equipment must be arranged and constructed so it can be easily and efficiently cleaned; all piping used to convey milk must be of the sanitary taken-down form. Windows and doors from May 1 to October 1 must be provided with sound screens of mesh sufficiently fine to keep out flies and other insects. Buildings and equipment must be kept clean at all times and free from odors.

(c) *Handling milk.*—If milk is sold as pasteurized milk, it shall be pasteurized as soon as received by dealer while fresh, and same shall be labeled pasteurized milk. Same shall be pasteurized at the following temperatures: 140° F., uniform heating 20 minutes; 150° F., uniform heating, 15 minutes; 155° F., uniform heating 10 minutes; 160° F., uniform heating 5 minutes; 165° F., uniform heating 1 minute.

The time shall be calculated from the time the entire quantity reaches the required temperature. The milk shall be promptly cooled after pasteurization to a temperature of 59° F. or less and stored at a similar temperature.

SEC. 30. *Contagious diseases.*—Should scarlet fever, smallpox, diphtheria, typhoid fever, tuberculosis, or other dangerous or infectious disease occur in the family of any dairyman or among any of his employees, or in any house in which milk is kept for sale or in the family or among any of the employees of any person who ships milk into the city of Lorain for sale, such dairyman, such vendors, or shippers of milk, shall immediately notify the health officer of the facts of the case, and said health officer shall at once investigate and order the sale of such milk stopped or sold under such regulations as they think proper, should dairymen, vendors, or shippers of milk fail to notify the health officer when contagious diseases exist in their families, or in the families of their employees, or who, after such information is given the health officer, fail to obey their directions, the food and dairy inspector shall seize and destroy all milk sent into the city by such persons and he shall, when acting in good faith, be held harmless in damages therefor in any suit or demands made.

In delivering milk to families in which there exists any of the above-named contagious or infectious diseases the dairyman shall not enter, neither shall he permit any of his milk bottles or vessels to be taken into such houses, but shall pour such milk as each family wishes into vessels furnished by such family. No dealer, person, firm, or corporation shall deliver, sell, offer for sale, have in their possession, or deliver any milk, skimmed milk, or cream in any bottle, can, or other receptacle which bears the name, cap, or stamp of any other dealer, person, firm, corporation, or company.

SEC. 31. (a) *Milk inspectors.*—The dairy and food inspector, the health officer, or any person authorized by the board of health, may examine all dairy herds, utensils for handling milk, of all dairymen or persons engaged in selling or shipping for sale milk or cream to the city of Lorain. These inspectors shall have the power to open any can, vessel, or package, containing milk or cream, whether sealed (locked), or otherwise, or whether in transit or otherwise, and take samples of the milk or cream. If found to be filthy or the cans or other containers are in an unclean condition, the said inspector may then and there condemn the milk or cream as deemed by him to be filthy and confiscate the same, and he shall, if done in good faith, be held harmless in damages therefore in any suit or demand made.

(b) For the determination of the dirt content, milk samples (approximately $\frac{1}{2}$ pint) shall be passed through a filter consisting of an absorbent cotton disk, free from sizing about one-eighth of an inch in thickness and with a filtering surface of three-fourths inch to 1 inch in diameter.

The filters shall be graded as follows:

(1) Clean milk shall be that which does not leave on the cotton more than 6 particles of foreign matter large enough to be barely visible without magnification, nor tint or color the cotton except with fat.

(2) Fairly clean milk shall be that containing more dirt than is permitted in clean milk but which does not contain hairs, flies, more than six particles of other than fecal matter, with a dimension greater than 1 millimeter and less than 5 millimeters; or areas greater than 5 millimeters square, which are covered or tinted with fine dirt sufficient to be distinct without magnification.

(3) Dirty milk shall be one which contains more dirt than is permitted in that graded as fairly clean. It may contain dust, dirt, hairs, and particles of fecal matter

not over 5 millimeters in dimension. It shall not contain flies or sufficient dust, dirt, hairs, or small particles of fecal matter to obscure the cotton.

(4) Filthy milk shall include all dirty milk in which the cotton is obscured by dirt; or which contains insects, bits of fecal matter with a dimension greater than 5 millimeters, straws, and other foreign objects.

(c) No person, firm, corporation, company, dairyman, creamery, cheese factory or dealer, shall ship or bring into the city, have in their possession, sell, or offer for sale any milk, which after above determination shall be graded as dirty or filthy.

SEC. 32. *Cream*.—No person shall bring into the city of Lorain for sale, any cream, unless such cream is produced from milk which must conform to all the rules and regulations of this code relating to milk, or unless such cream be kept at or below 55° F., free from foreign substances, and shall not contain more than 1,000,000 bacteria per cubic centimeter, and shall not contain less than 16 per cent of milk at.

* * * * *

SEC. 39. It is hereby ordered and required that the health officer shall keep a complete record of all dairies inspected and all places where milk is sold or handled. Also a record of all complaints and tests made of each and every place, and this shall be open to public inspection; and a report may be obtained by any physician or persons making application to the board of health, health office of dairy and food inspector.

Meats, Fish, Game, and Poultry—Care and Sale. (Ord. 1770, June 16, 1914.)

SEC. 33. *Meats*.—No person or persons shall bring into the city, or sell, or offer for sale, for human food, in any market, public or private, any cattle, sheep, hogs, or lambs, or any meat, fish, game, or poultry that is diseased, unsound, unwholesome; or which for any reason is unfit for human food.

Dressed meats not bearing the stamp of the United States Department of Agriculture Inspection Bureau or the stamp of the Lorain inspector shall not be sold for human consumption in Lorain.

SEC. 34. No dressed meats of any kind whatever shall be conveyed through the streets of the city of Lorain in any wagon or other conveyance unless such wagon or conveyance is clean, and said meat is protected by being completely enveloped in clean canvas or duck.

SEC. 35. No meat, fish, nor fowl shall be displayed outside of any store or market where such are offered for sale. Game and poultry may, however, be displayed outside such store or market at such times as the temperature of air is below 38° Fahrenheit.

SEC. 36. No calf, pig, or lamb or meat thereof shall be brought, held, sold, or offered for sale for human food in the city of Lorain, which, when killed was, in the case of calf, less than four weeks old, of a pig, less than 5 weeks old, and of a lamb, less than 8 weeks old.

SEC. 37. No person shall be permitted to sell meat, or fish at retail from any wagon or other vehicle in the city of Lorain.

SEC. 38. No meat, fish, nor fowl shall be displayed on any counter, show case in any market unless same is protected from handling (by others than employees) by a suitable screen of woven wire.

* * * * *

SEC. 40. Whoever violates or obstructs or interferes with the execution of any of the foregoing orders shall be fined in any sum not exceeding \$100 or imprisoned for any time, not exceeding 90 days or both, but no person shall be imprisoned for any such violation or failure to obey any of the foregoing orders and regulations for the first offense and the prosecution shall always be as and for a first offense, unless the affidavit upon which the prosecution is instituted contains the allegation that the offense is a second or repeated offense, all of which is in accordance with section 4414 of the General Code of the State of Ohio in such case made and provided.

LOS ANGELES, CAL.

Births and Deaths—Registration of. (Ord. 30619, Aug. 13, 1914.)

SECTION 1. Every physician, accoucheur, midwife, or other person who shall attend, or assist, or advise as such at the birth of any child shall, within five days after such birth, report such birth to the health commissioner, in writing, upon blanks obtainable from the health department of the city of Los Angeles, which report shall state the time and place of such birth, the name, race, and color of the child, the name, residence, age, birthplace, and occupation of each of the parents and the maiden name of the mother, together with such other information or data as may be required by law.

SEC. 2. Within 48 hours after the death of any human being, the physician who shall have had the professional care of such deceased human being at the time of death shall sign and file in the office of the health department a certificate of death, unless the physician believes such death to be a proper case for investigation by the coroner. Every stillborn child or one dead at birth shall be so reported as a death. Each such certificate of death shall be upon a blank obtainable from the office of the health department, and shall state the date of the physician's attendance on such deceased person and the cause of death.

Burial—Funerals—Embalming. (Ord. 30619, Aug. 13, 1914.)

SEC. 3. It shall be unlawful for any person, firm, or corporation to bury, inter, cremate, or deposit in any vault or tomb, or to cause or permit to be buried, interred, cremated, or deposited in any vault or tomb, the body of any deceased human being without a permit from the health commissioner so to do. Such permit shall not be issued unless a certificate of death, in the form required by this ordinance, shall have been filed with the health department. Such permit shall accompany the body, and the person in charge of such burial, interment, cremation, or disposition shall indorse on such permit the fact of such burial, interment, cremation, or disposition, and the date thereof, and shall sign and return the same to the health department within one day after such burial, interment, cremation, or disposition.

SEC. 4. It shall be the duty of every person who exhumes or removes the body of any deceased human being from any grave or excavation to fill or to cause to be filled such grave or excavation immediately with clean earth to the level of the surface of the surrounding ground.

SEC. 5. It shall be unlawful for any person in charge of the body of any deceased human being to fail, refuse, or neglect to cause the same to be buried or cremated within four days after death, unless a permit, in writing, is issued by the health commissioner extending such time. Such permit shall designate the time within which such body must be buried or cremated.

SEC. 6. It shall be unlawful for any person to keep or expose, or to cause or permit to be kept or exposed, the dead body of any human being in such a manner as to imperil the health of any person.

SEC. 7. It shall be unlawful for any person to keep or to cause or permit to be kept, unburied or uncremated, the dead body of any human being for a longer period of time than four days after the death of such human being without a permit in writing from the health commissioner. Such permit shall specify the length of time during which such body may remain unburied or uncremated: *Provided, however, That this section shall not apply to bodies while the same are being retained in a public morgue.*

SEC. 8. It shall be unlawful for any person to hold or to attend any public gathering or funeral or burial services in connection with any person who shall have died of bubonic plague, Asiatic cholera, smallpox, typhus fever, yellow fever, diphtheria;

scarlet fever, glanders or leprosy, poliomyelitis, or any quarantinable disease, but such funeral or burial services shall be private.

It shall be unlawful for any person to permit any child under the age of 16 years to attend any funeral or burial services held in connection with any person who shall have died of any such disease, or for any such child to attend any such services.

The body of any person who shall have died of any such disease shall be thoroughly disinfected and shall be inclosed in a tight burial case; and it shall be unlawful for any person to open, or to cause or permit to be opened, any such burial case after such body shall have been inclosed therein.

* * * * *

SEC. 10. It shall be unlawful for any person to embalm, or to cause to be embalmed, or to assist in embalming, the dead body of any human being without a certificate in writing signed by the coroner or the health commissioner, or by the physician who shall have had the professional care of such deceased human being at the time of death, which certificate shall state that no facts attended the illness or death of the deceased person that would cause or be a reason for an investigation of such death by any officer of the State of California, or of the county of Los Angeles, or of the city of Los Angeles: *Provided, however,* That the provisions of this section shall not apply to the embalming of the dead body of any human being whose death shall have been caused by traumatic injury or accident.

SEC. 11. It shall be unlawful for any person to embalm the body of any dead person or to inject any fluid into any such dead body until the health commissioner shall have examined such body and has given a permit, in writing, for the embalming of such body or for the injection of fluid into the same.

Communicable Diseases—Notification of Cases—Placarding—Quarantine—Hospitalization—Disinfection—School Attendance—Vaccination—Funerals—Transportation of Bodies—Railway Quarantine. (Ord. 30619, Aug. 13, 1914.)

SEC. 9. It shall be unlawful for any person to fail, refuse, or neglect to destroy by fire or to disinfect to the satisfaction of the health commissioner all articles which have been used about the body of any person who shall have died of bubonic plague, Asiatic cholera, smallpox, typhus fever, yellow fever, diphtheria, scarlet fever, yphoid fever, glanders, leprosy, tuberculosis, membranous croup, poliomyelitis, cerebrospinal meningitis, or any quarantinable disease, or which shall have been used in the room where such person shall have died.

* * * * *

SEC. 12. It shall be unlawful for any physician to fail, refuse, or neglect to report to the health commissioner in the manner required by this section, the name and location of any person he is attending who is, or whom such physician may have reasonable ground to suspect to be, affected with bubonic plague, Asiatic cholera, smallpox, chicken-pox, measles, typhus fever, yellow fever, diphtheria, or membranous croup, scarlet fever, typhoid fever, glanders, leprosy, tuberculosis, poliomyelitis, anthrax, cerebrospinal meningitis, or other infectious or contagious disease. Such report shall be made both by telephone and in writing to the health commissioner immediately upon ascertaining by such physician that such person is or may be so affected.

SEC. 13. It shall be unlawful for any owner, manager, or person in charge of any hotel, boarding house, lodging house, tenement house, or apartment house, or for any householder or other person, to fail, refuse, or neglect immediately to report, in writing, to the health commissioner, the name and location of any inmate of his or her house whom he or she has reason to believe is sick of any disease mentioned in the preceding section of this ordinance.

SEC. 14. Whenever the health commissioner shall receive knowledge of the existence of bubonic plague, Asiatic cholera, smallpox, poliomyelitis, typhus fever, yellow

fever, diphtheria, scarlet fever, glanders, or leprosy, he shall immediately cause to be placed in a conspicuous place upon the house or building in which such disease exists, a card upon which shall be printed in legible letters, at least 2½ inches in height, the name of such disease.

It shall be unlawful for any person to obstruct the view of, deface, remove, or destroy any such card, or to cause or permit the same to be defaced, removed, or destroyed, or the view thereof to be obstructed, until after the same shall have been removed upon the direction of the health commissioner.

A green card shall be used for cases of diphtheria, a red card for scarlet fever, a yellow card for smallpox, a white card for poliomyelitis, and a black card for Asiatic cholera, yellow fever, or bubonic plague. The colors designating other diseases shall be determined by the health commissioner.

Sec. 15. It shall be unlawful for any person to remove, or to cause to be removed, or to assist in removing, or to direct the removal of any person affected with bubonic plague, Asiatic cholera, smallpox, typhus fever, yellow fever, scarlet fever, glanders, leprosy, poliomyelitis, cerebrospinal meningitis, or any quarantinable disease, from any house or place to another house or place without first obtaining a permit in writing so to do, signed by the health commissioner.

It shall be unlawful for any person to drive or use, or to cause or permit to be driven or used, any vehicle for the conveyance or removal of any person affected with any such disease without first obtaining a permit in writing so to do, signed by the health commissioner.

Sec. 16. It shall be unlawful for any person who shall have visited or otherwise come in contact with any infectious, contagious, or communicable disease or who shall wear any infected clothing or who shall carry any material that will convey infection, to enter any public conveyance without first giving notice thereof to the owner, driver, or person in charge of such conveyance, and it shall be unlawful for any person to use such conveyance, or to cause or permit the same to be used, until after the same shall have been thoroughly disinfected to the satisfaction of the health commissioner.

Sec. 17. It shall be unlawful for any person who shall be affected with bubonic plague, Asiatic cholera, smallpox, measles, typhus fever, yellow fever, diphtheria, scarlet fever, typhoid fever, glanders, leprosy, tuberculosis, poliomyelitis, cerebrospinal meningitis, or any quarantinable disease, and who shall have been placed in quarantine, in any house, building, or place on account thereof by the health commissioner or for any person who shall be in any house, building, or place that shall have been placed in quarantine or upon which a card shall have been posted indicating the existence in such house, building, or place of any such disease, to leave, absent himself, or remove therefrom without a permit, in writing, signed by the health commissioner, until after such house, building, or place shall have been released from quarantine and shall have been disinfected to the satisfaction of the health commissioner, and such card shall have been removed by or under the direction of the said health commissioner.

It shall be unlawful for any person to enter any such house, building, or place while the same is quarantined, or while a card is posted thereon indicating the existence therein of any such disease, without a permit in writing from the health commissioner so to do.

Sec. 18. The health commissioner is hereby authorized and empowered to place in quarantine any person who shall have been exposed to or who shall have become infected with bubonic plague, Asiatic cholera, smallpox, typhus fever, yellow fever, diphtheria, scarlet fever, glanders, poliomyelitis, or any other quarantinable disease, either in the house, building, or place in which such person shall have been so exposed or become infected, or in the house, building, or place in which such person may be found.

It shall be unlawful for any person who shall have been exposed to or infected with any such disease and placed in quarantine by the health commissioner to leave, absent himself, or depart from the place in which he shall have been so quarantined until the expiration of the period of 21 days after such person shall have been so placed in quarantine unless sooner released by the health commissioner.

SEC. 19. The health commissioner is hereby authorized and empowered to place in quarantine, in such place as he may deem necessary for the preservation of the public health any person who shall have become affected with leprosy.

It shall be unlawful for any person affected with leprosy and placed in quarantine by the health commissioner to leave, absent himself, or depart from the place in which he shall have been so quarantined without a permit, in writing, from the said health commissioner.

SEC. 20. The health commissioner is hereby authorized and empowered to remove, or cause to be removed, to the detention hospital of the city of Los Angeles, any person affected with any infectious or contagious disease, when such person can not be properly quarantined in the house, building, or place wherein he is located when found to be affected with such disease.

SEC. 21. It shall be unlawful for any person, firm, or corporation owning, controlling, occupying, or having charge of any house, building, or premises in which shall have been any person affected with bubonic plague, Asiatic cholera, poliomyelitis, cerebrospinal meningitis, smallpox, chicken-pox, measles, typhus fever, yellow fever, diphtheria, scarlet fever, typhoid fever, glanders, leprosy, or tuberculosis, to fail, refuse, or neglect to renovate, clean, purify, and disinfect such house, building, or premises in such manner and at such time as the health commissioner may direct.

SEC. 22. The health commissioner shall make such rules and regulations for the quarantine or health of the city as from time to time may be deemed necessary. The physician in charge of any quarantine station, hospital, or place shall enforce all rules and regulations of the health department as may be necessary for the proper management and conduct thereof; and it shall be the duty of all persons in quarantine, and all agents, officers, policemen, or others employed by the city about such quarantine station, hospital, or place to carry out, enforce, and obey such rules and regulations.

SEC. 23. No person who shall have been suffering from or affected with any infectious or contagious disease or who shall reside with the family or in the same house in which a person so affected shall be located shall be permitted to attend any public or private school within the limits of the city of Los Angeles. The board of education and every principal, teacher, or other person in charge of any such school shall exclude every such person from such school until such person so excluded shall present a certificate from the health commissioner stating that there is no longer any danger from infection or contagion.

SEC. 24. It shall be unlawful for any undertaker or other person to use or to cause or permit to be used any vehicle, other than a hearse, for the conveyance of the body of any person who shall die from any infectious or contagious disease.

It shall be unlawful for any person to convey or to cause or permit to be conveyed into any church or other public hall or place the body of any person who shall die of any infectious or contagious disease.

SEC. 25. The health commissioner shall take such measures as he shall deem necessary to prevent the spread of smallpox, and the health commissioner is hereby authorized to issue an order or orders, at such time or times as he shall deem necessary, requiring all persons in the city to be vaccinated within such time as shall be prescribed in such order or orders. It shall be the duty of the health commissioner to provide for the vaccination, at the expense of the city, of such persons as are unable to pay for the same. It shall be unlawful for any person to fail, refuse, or neglect to be vaccinated as required by this section within the time prescribed in such order or orders.

SEC. 26. It shall be unlawful for any person, firm, or corporation to sell, lend, give away, or otherwise dispose of or to cause or permit to be sold, loaned, given away, or otherwise disposed of, any clothing, bedding, rags, or other articles which shall have been exposed to contagion or which may convey infection from any person affected with bubonic plague, Asiatic cholera, smallpox, typhus fever, diphtheria, scarlet fever, typhoid fever, glanders, leprosy, tuberculosis, poliomyelitis, anthrax, cerebrospinal meningitis, or any other infectious or contagious disease, unless the same shall have been disinfected or fumigated to the satisfaction of the health commissioner: *Provided, however,* That the same may be destroyed by fire.

SEC. 27. It shall be unlawful for any conductor or other person having the charge, control, or management of any railroad car or street car, or any passenger train or freight train or any steam engine or electric car or any car drawn or propelled by means of steam, electricity, gasoline, or other power, to bring into, or to cause or permit to enter into the corporate limits of the city of Los Angeles, on or by means of any such car, train, or engine, any person or the body of any person who shall have died while affected with bubonic plague, Asiatic cholera, smallpox, typhus fever, yellow fever, diphtheria, scarlet fever, glanders, leprosy, varioloid, poliomyelitis, cerebrospinal meningitis, or any quarantinable disease.

SEC. 28. It shall be unlawful for any conductor or other person having the charge, control, or management of any railroad car or street car, or any passenger train or freight train, or any steam engine or electric car, or any car drawn or propelled by means of steam, electricity, gasoline, or other power, to fail, refuse, or neglect to permit the health commissioner or any other person designated by the health commissioner, to enter such car, train, or engine, or any portion thereof, for the purpose of ascertaining whether any person affected with bubonic plague, Asiatic cholera, smallpox, typhus fever, yellow fever, diphtheria, scarlet fever, glanders, leprosy, varioloid, poliomyelitis, or any quarantinable disease, is on such car, train, or engine, or to conceal in any manner the fact that a person so affected is on such car, train, or engine; or to obstruct, prevent, or hinder in any manner the health commissioner or any other person so designated, from examining such car, train, or engine, or any portion thereof, or the cars composing such train; or to permit any such car, train, or engine containing any person affected with any such disease to enter the city of Los Angeles.

SEC. 29. It shall be the duty of the health commissioner, when in his opinion he deems it necessary for the preservation of the public health, to require all engines, all cars, and all trains of cars, both passenger and freight, entering into the city of Los Angeles, to stop at some convenient place or places, to be designated by him outside of the corporate limits of the said city before entering the same, for the purpose of permitting such trains and cars to be examined in order to ascertain whether any such car or train contains any person who is affected with bubonic plague, Asiatic cholera, smallpox, typhus fever, yellow fever, diphtheria, scarlet fever, glanders, leprosy, varioloid, poliomyelitis, or any quarantinable disease. The health commissioner shall give written notice of such requirement to the manager, superintendent, or other person or persons having charge, control, or management of all such cars or trains, and such manager, superintendent, or other person or persons shall immediately notify or cause to be notified, every conductor or person having charge of any car, train, or engine entering into the said city to stop such car, train, or engine before entering the said city, at the place or places so designated. After such notice is so given, by the health commissioner, it shall be unlawful for any conductor or other person having charge or control of any car, train, or engine, to permit the same to enter the corporate limits of the said city without first causing such car, train, or engine to stop at the place designated therefor by the health commissioner and permitting the same, and every portion thereof, to be examined by him or by some person designated by the said health commissioner, or without first obtaining a certificate from the health commissioner permitting such car, train, or engine to enter the said city.

SEC. 30. The health commissioner is hereby authorized and empowered to take such measures as he may deem necessary to prevent the entrance of pestilential, contagious, or infectious diseases into the city, and for that purpose he is hereby authorized and empowered to detain and examine any person coming from any place in which any such disease exists or is believed to exist.

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SEC. 76. The health commissioner of the city of Los Angeles be, and he is hereby, authorized and empowered to post or set up any notices which he shall deem necessary or expedient to secure or promote the enforcement or observance of any law of the State of California, or of any ordinance of the city of Los Angeles relating to the quarantine regulations, or to the preservation of the public health, or to the sanitary regulations of the said State or of the said city, and he is hereby authorized and empowered to post or set up any extraction or copy of any such law or ordinance whenever he shall deem the same to be necessary or expedient.

It shall be unlawful for any person to destroy, deface, mutilate, or tear down, or to cause to be destroyed, defaced, mutilated, or torn down, any such notice or any such extraction, or copy of any such law or ordinance.

SEC. 77. It shall be unlawful for any person, firm, or corporation to fail, refuse, or neglect to comply promptly with any order, notice, or direction of the said health commissioner.

Offensive Trades—Regulation of. (Ord. 30619, Aug. 13, 1914, as amended by Ord. 31228, Nov. 13, 1914.)

SEC. 31. It shall be unlawful for any person, firm, or corporation to melt or render, or to cause or permit to be melted or rendered, any fat, tallow, or lard except when the same is fresh from the slaughtered animal and taken directly from the places of slaughter in the city of Los Angeles, and when the same is free from sourness and taint and all other causes of offense at the time of melting or rendering. All melting and rendering shall be done in steam-tight vessels, and the gases and odors therefrom shall be destroyed by combustion or other effective means and according to the best and most approved means and processes. All such melting and rendering and everything in connection therewith, and the premises wherein or whereon the same shall be conducted, shall be free from offensive odor and from other cause of injury to the public health.

SEC. 32. It shall be unlawful for any person, firm, or corporation to establish, conduct, maintain, or operate, or to cause or permit to be established, conducted, maintained, or operated, within the city of Los Angeles, any fertilizer factory: *Provided, however,* That the provisions of this section shall not apply to any fertilizer factory in operation upon the date of the passage of this ordinance.

A fertilizer factory, within the meaning of this section, is hereby declared to be a factory or place where fertilizer, fertilizing material, or any ingredient used in the preparation of fertilizer is manufactured, produced, or prepared, in whole or in part, from offal or refuse or from animal or vegetable matters.

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SEC. 34. It shall be unlawful for any person, firm, or corporation to erect, establish, conduct, or maintain, or to cause or permit to be erected, established, conducted, or maintained, any factory or place for boiling or manufacturing varnish, lampblack, glue, or other substance or material that will generate any unwholesome, offensive, or deleterious gas or exhalation or any deposit that is dangerous or prejudicial to life or health, without providing gas consumers or other means of consuming or destroying such gas, exhalation, or deposit, or without causing such gas, exhalation, or deposit to be consumed or destroyed therein.

SEC. 35. It shall be unlawful for any person, firm, or corporation to erect, establish, operate, or maintain, or to cause or permit to be erected, established, operated, or

maintained, any shoddy machine or any carpet-beating machine within 200 feet of any church, schoolhouse, residence, or dwelling house; provided, however, that the provisions of this section shall not apply to any carpet-beating machine erected, established, operated, or maintained in the industrial districts of the city of Los Angeles, as said districts are now or may hereafter be established by ordinance, provided that every such carpet-beating machine shall be so inclosed that dust, dirt, or any other substance or material shall not escape therefrom during or by reason of the operation thereof.

Laundries and Washhouses—Sanitary Regulation of. (Ord. 30619, Aug. 13, 1914.)

SEC. 36. It shall be unlawful for any person, firm, or corporation to construct, establish, conduct, operate, or maintain, or to cause or permit to be constructed, established, conducted, operated, or maintained, any public washhouse or laundry unless the same is connected with an accepted public sewer, or unless every wash-room floor therein is constructed of cement.

SEC. 37. It shall be unlawful for any person, firm, or corporation conducting, operating, managing, or carrying on a public washhouse or laundry to permit any person suffering from any infectious or contagious disease to lodge, sleep, or remain within or upon the premises used for the purpose of such public washhouse or laundry.

SEC. 38. It shall be unlawful for any person to spray any clothing or other articles in any public laundry by means of water or other liquid substance ejected from the mouth. A public laundry, within the meaning of this section, is any place where clothing or other articles are washed or ironed for compensation.

Animals—Keeping and Sale of—Disposal of Dead Bodies. (Ord. 30619, Aug. 13, 1914.)

SEC. 33. It shall be unlawful for any person, firm, or corporation to bury or to cause or permit to be buried, any dead animal within the limits of the city of Los Angeles.

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SEC. 39. It shall be unlawful for any person, firm, or corporation owning or having charge, custody, control, or possession of any vicious dog, or other vicious or dangerous animal to permit or allow the same to go free or unrestrained in, along, or upon any public street or other public place.

SEC. 40. It shall be unlawful for any person, firm, or corporation to establish, conduct, or maintain, or to cause or permit to be established, conducted, or maintained, any store or place of business, in which dogs, monkeys, cats, guinea pigs, mice, or rats are sold or kept for sale, or to carry on the business of dealing in any of such animals, within 50 feet of any residence, dwelling house, lodging house, hotel, schoolhouse, theater, or church.

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SEC. 56. It shall be unlawful for any person, firm, or corporation to keep, cause or permit to be kept, any rabbit, or hare within 20 feet of any lunch room or lunch counter, school, church, public building, or hospital or any door, window, or other opening in any dwelling or residence.

Bathrooms and Water-Closets—Use for Other than Toilet Purposes Prohibited. (Ord. 30619, Aug. 13, 1914.)

SEC. 41. It shall be unlawful for any person, firm, or corporation owning, controlling, or having charge of any bathroom or water-closet room, to cause or permit any person to sleep in or to prepare or eat any lunch or other meal in any such room, or to use any such room as a sitting room, cloakroom or eating room, or for any purpose other than toilet purposes.

Nuisances. (Ord. 30619, Aug. 13, 1914.)

SEC. 42. It shall be unlawful for any person, firm, or corporation to unload, discharge, or deposit upon or along the line of any railroad, or upon or along any public street or other public place, any manure, offal, or other offensive or nauseous substance, or to allow any car having therein or thereupon any such substance to remain or stand upon or along any railroad, or upon or along any public street or other public place, for a longer period than 24 hours.

SEC. 43. It shall be unlawful for any person, firm, or corporation to deposit, or to cause or permit to be deposited in the Los Angeles River, or in the bed thereof, or in any irrigating ditch or storm drain, any dead animal or part thereof, or any offal, sewage, nightsoil, manure, or rubbish, or any decaying or putrid matter or substance of any kind.

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SEC. 46. It shall be unlawful for any person, firm, or corporation to deposit, or to cause or permit to be deposited, in or upon any public street, alley, or other public place, any filthy water, rubbish, or any sweepings from any store, or house, or the contents of any cuspidor, or any putrid or offensive substance of any kind.

SEC. 47. It shall be unlawful for any person, firm, or corporation to fail, refuse, or neglect to keep the sidewalk in front of his or its house, place of business, or premises in a clean and wholesome condition.

SEC. 48. It shall be unlawful for any person to dust, sweep, or beat any carpet, rug, or other fabric in, upon, or over any public street, alley, or sidewalk at any place except in front of the premises wherein such carpet, rug, or other fabric is used, or at any time except between the hours of 6.30 o'clock and 7 o'clock in the morning.

SEC. 49. It shall be unlawful for any person, firm, or corporation owning, leasing, acting as agent for, or occupying any premises to fail, refuse, or neglect to keep such premises in a clean and wholesome condition, and it shall be unlawful for any such person, firm, or corporation to permit any accumulation of manure, garbage, offal, rubbish, stagnant water, or filthy or offensive matter of any kind to be or remain upon such premises.

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SEC. 51. It shall be unlawful for any person to permit any vehicle hauling or carrying or used for hauling or carrying any dead animal, offal, market refuse, garbage, swill, night soil, manure, or other nauseous or offensive substance, to stand or remain in or upon any public street or other public place longer than is necessary for loading and hauling such substance to its destination, or to permit any such vehicle to be in a filthy or offensive condition.

SEC. 52. It shall be unlawful for any person to use any vehicle, tub, or other receptacle for hauling any offal, or the contents of any privy vault, cesspool, or sink, or any nauseous or offensive substance, unless such vehicle, tub, or other receptacle shall be sufficiently strong and tight to prevent any of the contents from leaking or spilling therefrom, or unless the same shall be so tightly covered as to prevent any nauseous odors from escaping therefrom.

Drinking Water—Prevention of the Pollution of. (Ord. 30619, Aug. 13, 1914.)

SEC. 44. It shall be unlawful for any person, firm, or corporation to deposit, or to cause or permit to be deposited, in any reservoir or aqueduct, or in any pipe or stream connected therewith, any animal, vegetable, or mineral matter or substance, or permit to be done any act or thing that will impair or imperil the purity or wholesomeness of any water designed for household or domestic use, or to cause or permit any horse, mule, or other animal to go into such water.

It shall be unlawful for any person to bathe or to put any part of his person into such water.

Ice—Manufacture of. (Ord. 30619, Aug. 13, 1914.)

SEC. 45. It shall be unlawful for any person, firm, or corporation to use or to cause or permit to be used in the manufacture of ice any water from any well or irrigating ditch without first having thoroughly filtered or distilled such water.

Manure—Care and Disposal. (Ord. 30619, Aug. 13, 1914.)

SEC. 50. It shall be unlawful for any person, firm, or corporation to keep or to cause or permit to be kept or to permit to remain any manure on any premises longer than one day unless the same is kept in a bin or box made of good, sound metal, brick, stone, or concrete, or wood of not less than 1 inch in thickness, and kept covered at all times.

It shall be unlawful for any person, firm, or corporation to keep or to cause or permit to be kept or to permit to remain any manure in a bin or box on any premises for a longer period than seven days, or to fail, refuse, or neglect to clean and disinfect such bin or box or to cause the same to be cleaned and disinfected at any time when ordered so to do by the health commissioner.

It shall be unlawful for any person, firm, or corporation to keep or to cause or permit to be kept any manure within 20 feet of any church, school, or hospital or any other place where food or food products are kept or stored, or any window, door, or other opening of any residence, dwelling house, hotel, or lodging house.

Provided, however, That nothing in this section contained shall be deemed to prohibit the maintenance of manure in a pile or piles for fertilization of the soil, if a permit shall have been granted therefor by the health commissioner, and if such manure shall be maintained more than 200 feet from any residence, dwelling house, hotel, or lodging house. Each such permit shall designate the location where such manure shall be kept and the amount that may be so kept. It shall be unlawful for any person, firm, or corporation to keep or to cause or permit to be kept any such manure at any location other than that designated in such permit or in any amount greater than the amount named in such permit.

Domestic Animals—Communicable Diseases—Notification of Cases—Places for Treatment of. (Ord. 30619, Aug. 13, 1914.)

SEC. 53. It shall be unlawful for any person, having under treatment, or owning, or having possession, control or knowledge of, any animal affected with glanders, farcy, tuberculosis or anthrax, or with any other infectious or contagious disease, to fail, refuse or neglect to report, in writing, to the health commissioner immediately upon obtaining knowledge that such animal is so affected, giving the location of such animal, the name of the disease with which the same is affected, and the name and address of the owner of such animal.

SEC. 54. It shall be unlawful for any person, firm, or corporation to establish, conduct, or maintain any stable, hospital, or other place for the treatment of diseased horses or other animals within the city of Los Angeles without first applying for and receiving a permit, in writing, from the health commissioner so to do.

SEC. 55. It shall be unlawful for any person, firm, or corporation owning or having the control or possession of any animal affected with glanders, farcy, tuberculosis or anthrax, or with any other infectious or contagious disease, to permit such animal to go or to be in or upon any public street, alley, or other public place, or to come in contact with any other animal not so affected.

Stables—Washracks. (Ord. 30619, Aug. 13, 1914.)

SEC. 57. Every washrack used for washing vehicles or horses shall have the sink or sand box thereof lined with or constructed of cement, and such sink or sand box shall be properly connected with an accepted public sewer, or with a cesspool constructed in the manner required by ordinance.

It shall be unlawful for any person, firm, or corporation to use, or to cause or permit to be used, any such washrack, or to wash, or to cause or permit to be washed, any vehicle or horse thereupon unless such washrack is constructed and connected as required by this section.

Privies and Cesspools—Location and Maintenance—Disposal of Contents. (Ord. 30619, Aug. 13, 1914.)

SEC. 58. It shall be unlawful for any person, firm, or corporation to construct or maintain any privy within less than 4 feet of any property line, or within less than 10 feet of any residence or dwelling house, sidewalk, or storm drain; and it shall be unlawful for any person, firm, or corporation to construct or maintain any privy unless the same shall be provided with a vault or well not less than 8 feet deep.

SEC. 59. It shall be unlawful for any person, firm, or corporation owning, leasing, acting as agent for or occupying any lot or premises to permit any privy well or vault upon such lot or premises to become filled to a point within 2 feet of the top of such well or vault, or to fail, refuse, or neglect to disinfect such well or vault whenever same shall become foul or offensive.

SEC. 60. It shall be unlawful for any person, firm, or corporation to maintain or use, or cause or permit to be maintained or used, or to cause or permit to exist any privy vault, well, or cesspool on any premises in the city of Los Angeles where a public sewer exists and is in use in any street or alley on which the property abuts.

SEC. 61. It shall be unlawful for any person, firm, or corporation to fail, refuse, or neglect to disinfect and fill with noncombustible matter, or fresh earth, to the satisfaction of the health commissioner, any privy vault or cesspool existing on any premises where the plumbing and house drainage of said premises have been connected to an accepted sewer. For the purpose of this section the word "cesspool" is hereby defined to mean any vault, well, tank, or other receptacle which has been used for the reception of house drainage or human excrement.

This section shall include all cesspools, vaults, or wells existing prior to the enactment of this ordinance.

SEC. 62. It shall be unlawful for any person, firm, or corporation to cause or permit the contents, or any part thereof, of any privy vault, cesspool, water closet, urinal, or of any other sink or cistern containing any nightsoil, slop water, or other filthy water, matter, or substance, to flow, discharge, or be deposited upon the surface of any premises or of any public street or other public place, or into any storm drain.

SEC. 63. It shall be unlawful for any person, firm, or corporation to deposit, or to cause or permit to be deposited, in any water closet, privy vault, or cesspool any dead animal, offal, or garbage or to deposit or to cause or permit to be deposited any solid substance in any public sewer, manhole, or flush tank.

SEC. 64. It shall be unlawful for any person to clean any yard or premises, or to empty any privy vault, cesspool, or sink, in such a manner as to offend the sensibilities of residents of the city, or to burn or dispose of any offensive or obnoxious substances in any manner that may be prejudicial to health or offensive to the sensibilities of the residents of said city.

Buildings and Premises—Sanitary Regulation. (Ord. 30619, Aug. 13, 1914.)

SEC. 65. No person shall erect or construct any residence or dwelling upon any lot or ground which has not been thoroughly drained and all manure and other decaying matter or substance removed therefrom.

SEC. 66. Every cellar or basement in any dwelling or residence shall be kept thoroughly drained and ventilated.

SEC. 67. No person shall knowingly cause or permit any person to sleep in any cellar, basement, or any place dangerous or prejudicial to life and health.

SEC. 68. It shall be unlawful for any person, firm, or corporation owning, leasing, or occupying any building or any part thereof, which is used or intended to be used as a

factory, workshop, store, or other mercantile establishment, to fail, refuse, or neglect to provide or cause to be provided, within reasonable access, a sufficient number of water-closets for the use of the person or persons employed therein.

SEC. 69. The owner, lessee, agent, or manager of any store, factory, workshop, or other structure or place of employment shall provide not less than 500 cubic feet of air space for every person engaged therein; and all such stores, factories, workshops, or other structures or places shall be provided with such means of ventilation that a complete change of air may be made therein once in every 30 minutes.

SEC. 70. Whenever any building or any part thereof in the city of Los Angeles is infected with any contagious or infectious disease, or by want of repair has become dangerous to life or is unfit for human habitation because of defects in drainage, plumbing, ventilation, or construction of the same, or because of the existence of a nuisance on the premises, which is likely to cause sickness among the occupants thereof, the said health commissioner may issue an order requiring all persons therein to vacate said building or any part thereof, for the reasons stated in said notice. The health commissioner shall cause every such order to be affixed conspicuously in the building or part thereof, and to be personally served on the owner, lessee, agent, occupant, or any person having charge or control thereof. If the owner, lessee, or agent can not be found in the city of Los Angeles or does not reside therein, or evades or resists service, then such order may be served by depositing a copy thereof in the post office in the city of Los Angeles, postage prepaid, properly inclosed and addressed to such owner, lessee, or agent at his last known place of business or residence. Every such building or part thereof shall within 10 days after such order shall have been posted or mailed, as aforesaid, or within such shorter time, not less than 24 hours, as may be specified in any such order, be vacated: *Provided, however,* Said health commissioner may revoke any such order whenever he shall become satisfied that the danger from said building or any part thereof has ceased to exist, or that said building has been repaired and rendered fit for habitation.

Medicines—Distribution of Samples Prohibited. (Ord. 30619, Aug. 13, 1914.)

SEC. 71. It shall be unlawful for any person, firm, or corporation to distribute, or to cause or permit to be distributed, to or among pedestrians, or to throw, leave, or place, or to cause or permit to be thrown, left, or placed, in or upon any car, vehicle, or other conveyance, or in, along, and upon any public street or other public place, or in or upon any private building or premises, or to deliver to or leave with, or to cause or permit to be delivered to or left with, any child under the age of 15 years, except by a regularly licensed physician or surgeon, or a regularly licensed pharmacist or pharmacist's assistant, or the parents or guardian of any such child, any drug, physic, or medicine, or any sample thereof.

Physicians, Surgeons, Dentists, and Peddlers of Medicines—Registration of (Ord. 30619, Aug. 13, 1914.)

SEC. 72. It shall be unlawful for any person to sell or peddle from house to house, or in or upon any public street or other public place, any medicine or drug unless such person shall have first registered his name and address in the office of the health department and shall have furnished the said health commissioner with a sample and a formula of such medicine or drug, and shall have received a permit in writing from the health commissioner to sell or peddle the same: *Provided, however,* That the provisions of this section shall not apply to traveling salesmen dealing directly with physicians, surgeons, dentists, or druggists doing business in the city of Los Angeles. Each such permit and each such registration shall expire one year from and after the date thereof, unless sooner revoked by the health commissioner.

SEC. 73. It shall be unlawful for any person to practice medicine, surgery, or dentistry in the city of Los Angeles unless such person is registered in the office of the

health department in a register kept for that purpose. The health commissioner shall not register any such person unless such person is licensed in the manner required by law by the State of California to practice or carry on the profession or business for which such person seeks registration.

SEC. 74. The health commissioner shall provide a suitable book within which to register the names, addresses, dates of graduation, dates of licenses, and dates of registration of physicians, surgeons, and dentists; also a suitable book within which to register the names, addresses, and dates of registration of peddlers of medicines and drugs. The said health commissioner shall, upon the registration of any person as in this ordinance required, issue to such person a certificate of the fact of such registration and the date thereof.

SEC. 75. Each physician, surgeon, and dentist at the time of registering shall pay to the health commissioner a registration fee of \$2 for each registration.

Each peddler of drugs or medicines shall register, as in this ordinance required, once each year, and shall pay to the health commissioner a registration fee of \$2 for each registration.

Health Department—Officers to be Designated by Badges. (Ord. 30,619, Aug. 13, 1914.)

SEC. 78. That there shall be provided for the health commissioner, assistant health commissioners, and all employees of the health department of the city of Los Angeles, metal shields of such design and numbered and lettered subject to the approval of the health commissioner and the city council.

It shall be unlawful for any person other than the health commissioner, assistant health commissioner, and the employees of the health department, to wear, use, or display any such shield or any shield of the same design, or any shield having engraved or inscribed upon its surface the words or letters used on the shield adopted by said health department.

Penalty and Repealing Clause. (Ord. 30,619, Aug. 13, 1914.)

SEC. 79. That any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punishable by a fine of not more than \$500, or by imprisonment in the city jail for a period of not more than six months, or by both such fine and imprisonment.

Each such person, firm, or corporation shall be deemed guilty of a separate offense for every day during any portion of which any violation of any provision of this ordinance is committed, continued, or permitted by such person, firm, or corporation, and shall be punishable therefor as provided by this ordinance.

SEC. 80. That ordinance No. 24979 (new series), approved May 1, 1912, and all ordinances and parts of ordinances in conflict herewith are hereby repealed: *Provided*, That any such repeal shall not affect or prevent the prosecution and punishment of any person, firm, or corporation for any act done or permitted in violation of any ordinance which may be repealed by this ordinance, and shall not affect any prosecution or action which may be pending in any court for the violation of any ordinances repealed by this ordinance.

Lodging Houses and Tenements—Sanitary Regulation. (Ord. 28942, Jan. 3, 1914.)

SECTION 1. That section 6 of ordinance No. 28598 (new series), entitled, "An ordinance regulating tenement houses, lodging houses, hotels, and apartment houses," approved November 10, 1913, be and the same is hereby amended to read as follows:

SEC. 6. Every tenement house or lodging house and every part thereof shall be kept clean and free from any accumulation of dirt, filth, garbage, or other matter in or on the same, or in any yard, court, passage, area, or alley connected therewith or belonging to such tenement house or lodging house.

The owner, lessee, agent, or other person, firm, or corporation conducting, operating, controlling, or managing any lodging house or tenement house or the occupant of any such tenement house or any part thereof, shall thoroughly clean all the rooms, passages, floors, windows, doors, walls, ceilings, water-closets, privies, cesspools, and drains of the building, or any other portion of the building of which he is the owner or agent, or which he conducts, operates, controls, manages, or occupies, to the satisfaction and according to the direction of the health commissioner, as often as he shall be required or in accordance with any regulations of said health commissioner.

LOUISVILLE, KY.

Communicable Diseases—Prevention of the Spread of—Quarantine. (Ord. Mar. 7, 1914.)

SECTION 1. No parent, guardian, or other person having control of any child or children shall allow or permit any such child or children to go from any house or building infected with diphtheria, membranous croup, scarlet fever, or any other communicable disease dangerous to the public health, to attend any church, public meeting, or place of amusement, or to travel or appear on any public street or highway, or on any vessel or steamer, without first securing a permit from the department of health of the city of Louisville, and without compelling such child or children to make a complete change of clothing.

SEC. 2. It shall be unlawful for any member of a family or household in which there is a case of diphtheria, membranous croup, scarlet fever, or any other communicable disease dangerous to the public health, and who has been exposed thereto, to attend any church, public meeting, or place of amusement, or to travel or appear on any public street or highway, or on any vessel or steamer, without first making a complete change of clothing and procuring a permit from the health department of the city of Louisville.

SEC. 3. Any person violating any provision of this ordinance shall be liable, upon conviction, to a fine of not less than \$5 nor more than \$20 for each offense.

MACON, GA.

Slaughterhouses—Sanitary Regulation—Inspection. (Reg. Bd. of H., Feb. 11, 1914.)

No person shall deliver or offer for sale within the city of Macon, or otherwise dispose of food therein, any meat or meat products of any cattle, sheep, goat, swine, butchered outside of the city limits, except such slaughterhouses inspected by the United States inspector, without a written permit from the board of health. Before such a permit shall be granted, the following application shall be signed by the party seeking such privileges:

APPLICATION TO DELIVER BUTCHERED MEATS IN THE CITY OF MACON.

Desiring to deliver butchered meats in the city of Macon to the meat dealers of the city, I hereby make application to the board of health for a slaughterhouse permit, and I hereby agree to observe strictly the rules of said board now in force, or which may hereafter be adopted regarding the production and sale of meats and to allow the inspector of foods of the city of Macon to visit my premises at any time, whether said premises are in the city or elsewhere, and to allow him free opportunity to examine my butcher pen, cattle, sheep, goats, and swine from time to time when requested by him to do so.

Furthermore, I agree to have my building and butcher premises to conform to the regulation for the building of slaughter pens or slaughterhouses now required, or hereafter required by the sanitary rules and regulations of the board of health of Bibb County.

The said permit shall be furnished gratuitously to applicants on condition that all laws, ordinances, and regulations concerning butcher pens, meat dealers, and meat products be strictly complied with. Each butcher who receives a permit from the

board of health to deliver meat within the corporate limits of the city of Macon shall at the same time be furnished a printed copy of these provisions and the meat rules of the board of health of the city of Macon. All permits shall be revoked by the board of health for violation of any of these provisions.

No meats shall be delivered in the city of Macon from the butcher pens outside of the city unless the butcher pens are built according to the following rules as required by the Bibb County Board of Health or hereafter required by the said Bibb County Board of Health: All regular and permanent slaughter pens, or slaughterhouses, or places where animals are slaughtered, must be arranged and conducted as follows: They shall not be allowed to exist in a thickly populated section, and they must be located as far away as possible from any dwelling. The slaughter pen or house must be inclosed by a fence at least 10 feet away on all sides, and cattle must not be allowed to remain within the inclosure. The slaughterhouse must not be boarded up on the sides, but left open; or it may be boarded up only part way, nailing the boards on across the studding, and leaving spaces between them as wide as are the boards. The floor of the slaughterhouse must be well made, and so constructed, slanting slightly from all sides to the center, and a drainage pipe or covered trough must be used to convey from beneath the floor into a drain the liquid waste and washings from the floor. The solid waste from the slaughter—that is, the bones and other useless portions of the carcass—must be burned or buried. After every slaughter the floor must be washed thoroughly with clean water, and all refuse disposed of by burning or burying. Pigs or hogs must not be used as slaughter pen or slaughterhouse scavengers. Bones and refuse shall not be allowed to exist in the vicinity of the slaughter pen or house. Accumulation of filth beneath the floor of the slaughterhouse or pen must not occur or be allowed to exist; the ground around the slaughterhouse or pen must be kept clean. Any and every slaughterhouse or slaughter pen now existing in this county which is in an insanitary condition and which is not arranged and conducted according to the above rules and regulations shall not be used for slaughtering until made to comply with the above rules and regulations, to the satisfaction of the county board of health. Any such slaughter pen or slaughterhouse not so arranged and conducted shall be declared a nuisance and ordered abated.

No meats or meat products shall be transported in any wagon or other vehicle into the city from the butcher pens outside of the city unless fully protected from moisture, soot, dust, and flies by the use of covered vehicles with the front and back closed, or by the use of clean, white cloths spread over the meat or meat products.

The delivery wagons or other vehicles so used, together with such boxes, barrels, or other containers used for transferring meats into the city, should be kept perfectly clean, and no dirty burlap or other dirty cloths shall be used in contact with meats. It shall be the duty of the food inspector of the board of health of Macon to enter not less than once a week, and no person shall hinder or prevent him entering, any butcher pens outside of the city of Macon, supplying the city with meats or meat products for human food, and inspect the sanitary conditions of such butcher pens, and upon finding any pen or slaughterhouse in an insanitary condition in any manner whatsoever, he shall condemn the same and give the proprietors written notices that meats butchered therein can not be brought into the city until such pens are cleaned and kept in a sanitary condition.

That section 19 of by-laws of the board of health, and section 240 of city code, be, and the same are hereby, amended so as to read as follows:

“No slaughterhouses, rooms, buildings, or other places where sheep, hogs, cattle, or other animals are slaughtered shall be allowed within the city of Macon, and the chairman of the board of health shall order all such nuisances to be immediately abated.”

Also, that section 43 of the by-laws of the board of health, section 832 of the city code, be condemned by striking out all of section 43 except such as reads as follows:

"It shall be the duty of the inspector of foods to inspect all fresh meats brought into the city which are to be sold or offered for sale for food, and to condemn the same if in his opinion it is unfit for food."

Also, that section 44 of the by-laws of the board of health and section 833 of the city code be amended so as to read as follows:

"Such condemned meat shall be sent at once to the crematory and burned. If the carcass of an animal, on post mortem examination, be found diseased or otherwise unfit for food, such carcass shall be marked with a yellow condemnation tag and saturated with coal oil by the food inspector, and the said carcass, together with all the parts thereof, shall be sent at once to the crematory and burned. Where only a portion of the carcass is condemned, only that part condemned shall be so destroyed."

**Meat and Meat Products and Poultry—Care and Sale. (Reg. Bd. of H.,
Feb. 11, 1914.)**

RULE 1. All inclosed or indoor shops in which meats or meat products are stored and exposed for sale shall be kept scrupulously clean. During the summer months all doors and windows opening into such shops shall be effectively protected against the entrance of flies by the use of fly screens.

RULE 2. No meats of any description shall be permitted to hang or stand in the open air exposed to insects or street dust or other contaminating influences, but must be under glass or fly netting, and in summer properly iced to prevent spoiling. Meats exposed in the open markets shall be so covered with netting as to be effectively protected from flies.

RULE 3. Blocks or stands upon which meats are cut or chopped shall be kept scrupulously clean by frequent washing and by scraping as often as in the judgment of the inspector seems necessary.

RULE 4. Scales, knives, and instruments of every description shall be cleaned at the close of each day's business.

RULE 5. Ice boxes, racks, and hooks shall be kept thoroughly clean by scrubbing and scraping, and ice boxes shall be scoured throughout once each week, and as much oftener as may be necessary.

RULE 6. Floors must be thoroughly scraped and scrubbed twice a week; all used sawdust must be removed and fresh sawdust sprinkled or laid (where used) at least twice a week.

RULE 7. Meat cutters and other attendants who handle meats shall be cleanly dressed and they shall be free from contagious and infectious diseases. Their hands and outer garments shall be kept clean.

RULE 8. No refuse, scraps, bones, rancid fat, or decaying flesh shall be kept in the ice box with fresh meats, nor shall an ice box used for the keeping of meats be employed for any other purpose.

RULE 9. The custom of wrapping meats in old newspapers or in wrapping paper that is soiled or that has been used for any other purpose is expressly prohibited. Every piece of meat sold shall be wrapped in fresh, clean wrapping paper that has not been used for any other purpose.

RULE 10. Live poultry shall not be kept in the same room or compartment in which meats are prepared, stored, or exposed for sale. Nor shall live poultry be kept for any room adjoining such room if the conditions are such that the room used for storage of live poultry ventilated into the next shop so that the odors from the fowls and their cages may contaminate the meats.

Penalty. (Ord. Mar. 3, 1914.)

For a violation of the ordinance regulating the building and maintenance of slaughter pens within the limits of Bibb County, and the delivery in the city of Macon of meat and meat products therefrom, passed by the board of health of the city of Macon February 11, 1914, the offender shall on conviction be punished as prescribed in the act creating the recorder's court of the city of Macon and the acts amendatory thereof.

Garbage, Refuse, and Ashes—Care and Disposal. (Ord. Apr. 8, 1914.)

That the rules and regulations * * * relating to trash and its removal be amended by striking out sections 89 and 90 and substituting the following therefor:

SECTION 89. No person shall throw, cast, deposit, scatter, sweep, lay, drop, or leave or cause to be thrown, cast, deposited, scattered, swept, laid, dropped, or left in or upon any street, alley, footway, park, avenue, highway, sidewalk, or other public space in the city of Macon, or in any sewer or intake basin, any dirt, ashes, sawdust, hay, mud, gravel, shavings, straw, garbage, offal, vegetable matter, banana peel, apple parings, orange rinds, trimmings of trees, or refuse matter of any kind; or dead animal or putrescible matter of any kind; provided that earth and rubbish from excavations or building débris or material used in the construction of buildings may be placed or permitted to be in the places aforesaid temporarily.

Licensed vendors selling from stands or push carts or other vehicles upon the streets or other public places shall attach to each such stand or vehicle a can or other receptacle to contain refuse matter incident to their business, said receptacle to be in such form and of such material and to be placed in such position as the board of health may prescribe; and the contents of each such receptacle shall be daily removed by the person in charge of the stand or vehicle to which it is attached.

No person shall throw or deposit or cause to be thrown or deposited in or upon any vacant lot or open space in the city of Macon any sawdust, shavings, vegetable matter, paper, rubbish, litter, dead animal, offal, garbage, putrescible matter of any sort, or any other matter or thing injurious to public health; and the owner or owners of any lot, lots, or squares of ground in the city of Macon, or their agents, who shall let such lot, lots, or squares of ground for any circus or other exhibition, shall within 24 hours after the exhibition shall have left, clear and remove, to the satisfaction of the board of health, from any such lot, lots, or squares, waste paper and deposits of all kinds; provided, that this section shall not apply to deposits of noncombustible substances not injurious to health on any place designated by the board of health as a public dump, where permission to make such deposits is granted by the said board of health.

SEC. 90. The occupant of any house shall cause all ashes and other noncombustible refuse matter to be put in receptacles of not less than 5 nor more than 24 gallons capacity. Ashes and other noncombustible refuse matter shall be construed to mean ashes from coal and other fuels, and such mineral substances as may accumulate in connection with the ordinary conduct of a household, but not such as may result from building operations or repairs.

Receptacles containing garbage, ashes, or other refuse matter to be collected by employees of the board of health shall be placed on the premises at or near the rear or side gate to said premises, if collections are to be made from the rear or side, and in the area way or other convenient place near to the front entrance to said premises if collections are to be made from the front; and the gate or other approach to the premises shall be unfastened at the time when collections are made. Receptacles containing garbage, ashes, or other refuse shall not be placed or left for collection upon any sidewalk, street, avenue, or alley, except in the business sections of the city.

MARION, IND.

Garbage, Refuse, and Ashes—Care and Disposal. (Ord. Apr. 20, 1914.)

SECTION 1. Householders and occupants of premises within said city are hereby required to place in receptacles provided by them all garbage, slops, and other waste or unwholesome materials: *Provided*, That the board of public works of said city may designate the kind or kinds of receptacles to be used, the same to be uniform throughout the city as nearly as is practicable.

SEC. 2. The receptacles so used for the retention of garbage, slops, and other waste or unwholesome materials shall be placed in places convenient for the said city by its employees, agents, and officers to remove the contents therefrom or cause the same to be removed: *Provided, however*, That each householder or occupant of premises in said city shall have the right to destroy all his garbage, slops, and other waste or unwholesome materials upon his own premises, taking care not to create a nuisance in so doing.

SEC. 3. The deposit of garbage, filth, slops, or other waste or unwholesome materials upon either private or public premises is hereby declared to be a public nuisance, and all persons so creating or suffering such nuisance shall abate the same without notice.

SEC. 4. The board of public works of said city is hereby authorized to cause the removal of such nuisance at the expense of such person or persons causing or suffering the same, and shall direct the city attorney to institute an action therefor, and judgment shall be rendered against such person or persons for the reasonable expense and costs of such removal.

SEC. 5. The deposit of ashes, dirt, unused materials, boxes, and rubbish in or upon any alley, street, watercourse, or public ground is hereby declared to be an obstruction, and the same shall be removed under the provisions of section 266 of an act of the General Assembly of the State of Indiana, entitled "An act concerning municipal corporations," approved March 6, 1905, and published at page 407 of the Acts of 1905.

SEC. 6. The board of public works, its employees, agents, or officers, shall have the right to enter or go into or upon, without formal warrant, any lot, inclosure, place, building, or premises for the purpose of carrying out the provisions of this ordinance.

SEC. 7. This ordinance shall be and is supplementary to an act passed by the general assembly known as the "housing law," approved March 8, 1913, and published at page 377 of the Acts of 1913.¹

SEC. 8. Any person, firm, or corporation violating the provisions of section 3 of this ordinance shall be fined in any sum not to exceed \$50.

MARTINSBURG, W. VA.

Privies and Cesspools—Care and Disposal of Contents. (Ord. May 27, 1914.)

SECTION 1. That it shall be unlawful for any person, firm, or corporation to keep or maintain any privy vaults, closets, cesspool, or any other place in which human excrement is deposited in an unsanitary condition.

SEC. 2. It shall be the duty of the board of health to determine by inspection whether or not such privy vaults, closets, cesspools, or other places where human excrement is deposited are kept or maintained in a satisfactory sanitary condition, and it is hereby empowered to make or have made such inspection as it may deem necessary for this purpose.

SEC. 3. Any person, firm, or corporation refusing to allow inspection or in any way interfering with the health commissioner, sanitary inspector, or any person or persons designated by him or the board of health in the performance of their duty shall be

¹ Public Health Reports, Sept. 12, 1913, p. 1015.

guilty of an unlawful act and upon conviction by the police judge shall be fined not less than \$5 nor more than \$50.

SEC. 4. It shall be the duty of the board of health to provide the means and supervise the removal and disposal of excrement from the aforesaid privy vaults, closets, cesspools, or other places of the like nature at such times and as often as it may deem necessary when the same shall be found to be in an unsatisfactory or unsanitary condition.

The board of health when requested by any property owner shall clean any privy vaults, closets, cesspools, or other place of the like nature the same as though the property had been inspected and found to be in an unsatisfactory or unsanitary condition, at the same price and upon the same terms as is provided in section 5 hereof.

SEC. 5. That the board of health is hereby empowered and directed to charge and collect 25 cents for each bushel of excrement removed from a privy provided with a water-tight receptacle and 50 cents for each bushel of excrement removed from privies not provided with water-tight receptacles and such amount as is reasonable and necessary for the cleaning of cesspools: *Provided, however,* That, no charge shall be less than 50 cents for the cleaning of any privy not provided with a water-tight receptacle.

The amount so charged and collected shall be used to defray the expenses of disinfection of such privies and scavenging done there.

SEC. 6. That the cost of such removal and cleaning shall be at the expense of the property owner, and the cost shall be certified by the health commissioner to the sergeant whose duty it shall be to notify the person or persons owning the property of the amount due, which shall be payable within 30 days next thereafter; and if the property owner or owners do not pay the said bill within such time, then the sergeant shall turn over such bills to the city attorney, who shall proceed by proper legal proceedings to collect the same, adding thereto 10 per cent of the amount of such bill as a penalty for nonpayment.

Milk and Milk Products—Production, Care, and Sale. (Ord. Aug. 6, 1914.)

SECTION 1. *Permits.*—That every person before selling milk or offering it for sale in the city of Martinsburg, or before conveying same in carriage or otherwise for the purpose of selling or delivering same, or before selling or delivering to any other person who sells or delivers milk into the city of Martinsburg, shall first secure a permit to do so. Application for said permit shall be made to the city health commissioner, and shall be in writing on a blank furnished to the applicant for such purpose. Said blank shall be filled out by the applicant, who shall give the names and place of residence of every person employed by him in the handling, producing, selling, or delivering of milk, together with the names and place of residence of any person from whom he purchases or receives milk, and said application shall contain an agreement that the city health commissioner, his deputies, or assistants shall have the right at any time to inspect his cows, premises, or methods of handling milk; and if at any time such persons shall employ other persons in the handling of his milk, or shall purchase milk from any person not hitherto reported by him, then, in either case, he shall, before selling or delivering such milk, report such fact to the health commissioner.

SEC. 2. *Permits not transferable.*—All permits shall be issued only in the name of the person making the application therefor; and said permits shall not be transferable except with the consent or indorsement thereon of the city health commissioner.

SEC. 3. *Permits, when renewable.*—Permits shall be good for one year and shall be renewed in the month of April of each year, at a cost of \$5 to the applicant, except that the permit issued this year shall be issued 30 days after the passage of this ordinance and shall be good until the 1st day of May, 1915, and shall be issued at a cost to the applicant of but \$3.33.

SEC. 4. *Permits, when issued—Requirements.*—Permits shall be issued by the city health commissioner only after the applicant has complied with all the provisions above set forth, and after said commissioner has fully satisfied himself that each applicant has also complied with the following requirements:

(a) All water used in washing milk bottles, buckets, strainers, and all other utensils, etc., used in the production, handling, selling, or conveying of milk shall be "safe water," that is, which contains no colon bacilli.

(b) All milk houses or other buildings used in the temporary storage of milk, or in washing and drying milk bottles, utensils, etc., shall be screened from flies. And it shall be the duty of any applicant for a permit as aforesaid to store, or cool (unless container be closed), measure, and bottle milk, and to wash and dry milk bottles, utensils, etc., in such screened house.

(c) All manure shall be placed in bins, and such bins shall be screened from flies.

(d) No milk shall be sold except from apparently healthy cows, and the presence of any diseased animal in a herd from which milk is sold shall be prima facie evidence that the milk of such diseased animal is sold contrary to law; and no milk shall be sold from any cow within 15 days before nor within 5 days after calving.

SEC. 5. *Requirements, contagious diseases.*—When any person engaged in the production, storage, sale, or distribution of milk shall be suffering from any contagious or infectious disease, or in whose residence or among whose immediate associates any such contagious or infectious disease exists, or among whose employees or their immediate associates any such disease exists, or when any such disease exists in any building used in any manner in the milk business, no milk which has passed through the hands of or come in contact with such person or which has been stored in or passed through such building shall be sold or delivered without the consent of the city health commissioner.

SEC. 6. No person who is in any way connected with the business of producing, handling, selling, or delivering milk shall enter any place where exists any contagious or infectious disease nor associate in any manner with anyone who is an occupant of such place; but this shall not prevent milk being delivered to the door of such place, provided such empty milk bottles are not returned except under the direction and supervision of the city health commissioner.

SEC. 7. *Reporting contagious diseases.*—Every producer of milk who sells directly to the consumer or who sells to another person for resale shall promptly notify the city health commissioner of any case of a contagious or infectious disease among his employees, their immediate associates, or members of their family.

SEC. 8. No person, either producer or consumer, shall place or permit to be placed in any vessel or utensil used in the production, handling, or sale of milk any offal, swill, kerosene oil, or other offensive substances, nor shall return or cause to be returned any milk can or bottle which is in an unclean, insanitary, or offensive condition.

SEC. 9. *Enforcement.*—The city health commissioner shall enforce the provisions of this ordinance and regulations thereunder under the general direction of the city board of health and shall be responsible to that body for the conduct of his office.

SEC. 10. *Revocation.*—Any person violating any provision or regulation of this ordinance, or any person hindering, obstructing, or interfering with the city health commissioner in the discharge of his duties as hereinabove set forth shall, upon conviction thereof, be fined not less than \$5 nor more than \$50 for each offense.

SEC. 11. The term "milk" as used in this ordinance shall be taken to mean fresh milk, skim milk, cream, or buttermilk, and the term "person" shall be taken to mean any person, persons, individual, firm, partnership, or corporation.