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WEIGHT AND HEIGHT AS AN INDEX OF NUTRITION.

Weight and Height Measurements of 9,973 Children Classified upon Medical Examination as "Excellent," "Good," "Fair," or "Poor" in Nutrition as Judged from Clinical Evidence. [1]

By TALIAFERRO CLARK, Surgeon; EDGAR SYDENSTRICKER, Statistician; and SELWYN D. COLLINS, Assistant Statistician, United States Public Health Service.

The increasing attention which is being given to child hygiene emphasizes more and more the need for some dependable index of physical fitness for practical use. It is unquestionably desirable that this index should (*a*) accurately indicate for the individual child his physical status, (*b*) be expressible in numerical terms, (*c*) be referable to a standard in order that significant deviations from health may be accurately measured, and (*d*) be simple and easily found for any child by persons without special training in health.

A number of indices have been and are being suggested, but the one which is most generally used at present is the weight of a given child compared with the average weight of children of same sex, age, and height, allowing 7 or 10 per cent deviation from this standard as normal variation. Children below this standard are classed as underweight and presumably as not physically fit.

Objections have been made to such an index on quite serious grounds, the chief of which are that the establishment of a practicable standard or "norm" is not feasible and that, even if such a "norm" could be established, a deviation in weight in the case of a specific individual may not necessarily indicate an actual deviation from good health. In the hope of throwing additional light on this question there are presented in the following pages the results of a statistical analysis of the height and weight measurements of several thousand children considered in relation to the state of "nutrition" as determined independently upon the basis of clinical evidence.

The data for the study consist of weight and height measurements of 9,973 white children of native parentage who were given a physical

[1] From Field Investigations in Child Hygiene, United States Public Health Service, in cooperation with the Statistical Office, United States Public Health Service. This is the second article in a series on weight and height of school children.

examination and graded according to nutrition into four groups—"excellent," "good," "fair," and "poor," as judged from clinical evidence. While the examiner's impression of weight in relation to age and height was undoubtedly included among the clinical evidences of nutrition, it did not have a predominating influence, and the grading according to nutrition was accomplished without comparing the weight and height of the subject with any standard or average. Weight and height thus merely entered in as one of several factors considered in making a diagnosis of nutrition. The classification, it will be seen, is a modification of the Dunfermline scale for grading nutrition.[2] At the same time the examinations were made the children were weighed and measured. The children ranged from 6 to 16 years of age, inclusive, and resided in Spartanburg and near-by mill villages in South Carolina, in Hampton, Va., Frederick County, Md., Newcastle County, Del., and Nassau County, N. Y. The examinations were made by medical officers of the U. S. Public Health Service who were experienced in examining children and in estimating physical fitness.

WEIGHT, HEIGHT, AND NUTRITION.

Since nutrition was judged from clinical evidence, without reference to standard or average weights, it is a matter of fundamental interest to see how the children judged as not well-nourished ("poor" or "fair") compare in weight, standing height, and sitting height with those whose nutrition was judged as satisfactory ("good" or "excellent").

Because the great majority of the children considered in this study fell in the "good" and the "fair" nutrition groups and relatively few in the "excellent" and "poor" groups, it was not possible to use the latter classes separately in any tabulation requiring a division into age groups. The "excellent" group was therefore combined with the "good," and the "poor" was combined with the "fair," to get two groups of sufficient size for comparison. Roughly the nutritional status of the two broad groups may be described as "satisfactory" and "unsatisfactory."

In Table I the mean weight, mean standing height, mean sitting height, and mean weight-height index of these two nutrition groups are shown for each sex and age. The bottom section of the table shows the frequency distribution of the 9,973 children according to sex, age, and nutrition as judged from clinical evidence. Figure 1 is arranged to compare graphically the mean measurements shown in Table I.

[2] The Dunfermline scale for grading nutrition which was first used by Dr. Alister Mackenzie, at Dunfermline, Scotland, is described by Frank C. Manny, "A Scale for Marking Nutrition," School and Society, Vol. III, No. 56, pp. 123-124, Jan. 22, 1916.

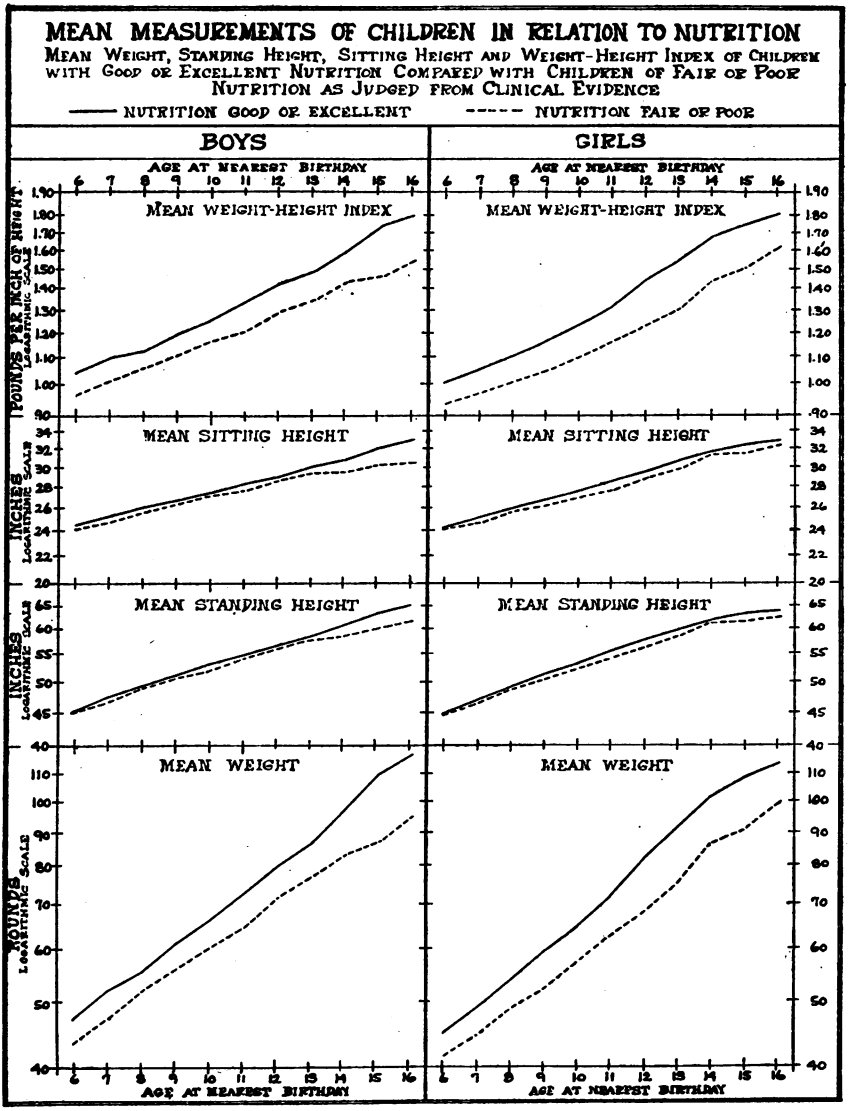
MEAN MEASUREMENTS OF CHILDREN IN RELATION TO NUTRITION
MEAN WEIGHT, STANDING HEIGHT, SITTING HEIGHT AND WEIGHT-HEIGHT INDEX OF CHILDREN WITH GOOD OR EXCELLENT NUTRITION COMPARED WITH CHILDREN OF FAIR OR POOR NUTRITION AS JUDGED FROM CLINICAL EVIDENCE
NUTRITION GOOD OR EXCELLENT
NUTRITION FAIR OR POOR
BOYS
GIRLS
AGE AT NEAREST BIRTHDAY
MEAN WEIGHT-HEIGHT INDEX
POUNDS PER INCH OF HEIGHT
LOGARITHMIC SCALE
MEAN SITTING HEIGHT
INCHES
MEAN STANDING HEIGHT
MEAN WEIGHT
POUNDS

FIG. 1.

TABLE I.—*Mean measurements of children classified according to nutritional status.*

Mean weight, standing height, sitting height, and weight-height index of children of good or excellent nutrition compared with children of fair or poor nutrition as judged from clinical evidence.

(Based on 9,973 children of native white parents in South Carolina, Virginia, Maryland, Delaware, and New York.)

Sex and nutrition.	Age, nearest birthday.										
	6	7	8	9	10	11	12	13	14	15	16
	Mean weight (pounds).										
Boys:											
Good or excellent..	47.12	51.99	55.26	60.95	66.11	72.54	79.75	86.45	96.43	110.00	116.75
Fair or poor.....	43.17	47.04	51.67	55.86	60.13	64.51	71.78	77.10	83.32	87.18	94.83
All boys.....	46.38	51.00	54.47	60.03	65.09	71.01	78.44	85.23	94.90	107.18	114.91
Girls:											
Good or excellent..	45.00	49.18	53.90	59.00	64.73	71.84	82.38	91.33	102.19	109.12	114.76
Fair or poor.....	41.50	44.72	48.76	52.17	57.08	62.26	68.19	75.15	86.73	91.46	99.56
All girls.....	44.42	48.31	52.92	57.66	63.27	70.03	80.41	89.31	100.18	108.11	113.82
	Mean standing height (inches).										
Boys:											
Good or excellent..	45.22	47.46	49.35	51.18	53.02	54.57	56.59	58.18	60.56	63.20	64.88
Fair or poor.....	44.76	46.51	48.77	50.55	51.83	53.78	55.77	57.46	58.11	59.82	61.36
Girls:											
Good or excellent..	44.72	46.85	49.01	51.02	52.76	55.10	57.41	59.43	61.42	62.61	63.28
Fair or poor.....	44.50	46.30	48.50	50.02	51.98	53.84	55.91	57.93	60.58	60.94	61.86
	Mean sitting height (inches).										
Boys:											
Good or excellent..	24.42	25.34	26.01	26.70	27.38	28.19	28.96	29.69	30.65	32.04	32.99
Fair or poor.....	24.05	24.77	25.56	26.33	26.98	27.55	28.53	29.26	29.38	30.08	30.44
Girls:											
Good or excellent..	24.13	25.00	25.80	26.61	27.36	28.36	29.38	30.49	31.45	32.26	32.79
Fair or poor.....	23.89	24.51	25.50	25.98	26.83	27.53	28.61	29.56	31.10	31.17	32.03
	Mean weight-height index $\left(\frac{\text{Mean weight in pounds}}{\text{Mean height in inches}}\right)$.										
Boys											
Good or excellent..	1.942	1.095	1.120	1.191	1.247	1.329	1.409	1.486	1.592	1.741	1.799
Fair or poor.....	.964	1.011	1.059	1.105	1.160	1.200	1.287	1.342	1.434	1.457	1.545
Girls:											
Good or excellent..	1.006	1.050	1.100	1.156	1.227	1.304	1.435	1.537	1.664	1.743	1.814
Fair or poor.....	.933	.966	1.005	1.043	1.098	1.156	1.220	1.297	1.432	1.501	1.609
	Number of children.										
Boys:											
All boys.....	231	503	603	634	691	610	573	489	369	227	107
Good or excellent..	188	402	470	520	573	494	479	425	326	199	98
Fair or poor.....	43	101	133	114	118	116	94	64	43	28	9
Girls:											
All girls.....	223	489	572	637	593	567	569	512	400	229	145
Good or excellent..	186	393	462	512	480	460	490	448	348	216	136
Fair or poor.....	37	96	110	125	113	107	79	64	52	13	9

The mean measurements of children classed as "good" or "excellent" in nutrition are consistently greater in the different age groups than the corresponding mean measurements of children of "fair" or "poor" nutrition. Also the rate of growth, as indicated by the slope of the mean weight and weight-height index lines plotted on a logarithmic scale in Figure I, seems slightly greater for the well nourished than for the poorly nourished group.

For the purpose of comparing the distributions of the children according to weight, standing height, and sitting height, it was necessary to use 2-year age groups in order to have a sufficient number of children to secure dependable results.[3] Tables II, III, and IV compare in each of the 2-year age groups the percentage distributions of the children of the two nutrition grades according to weight, standing height, and sitting height.

[3] Because of the fact that the weight of children differs considerably with a year's difference in age, the average weight or the distribution in weight of children classified in 2-year age groups could not legitimately be compared for the two nutrition groups unless the proportion of children each single year of age was approximately the same in the two groups considered. For example, of the total girls in the 8-9-year age group of "good" or "excellent" nutrition, 47.4 per cent were 8 years old; in the "fair" and "poor" nutrition group, 46.8 per cent or almost the same proportion were 8 years old. The others in each case were, of course, 9 years old. The age factor will therefore have the same effect in each nutrition group.

The following table is introduced to show the comparability in respect to age of the two nutrition grades in the broad age groups used.

Distribution according to single years of age of children in each of the broad age groups used, by sex and nutrition.

Age nearest birthday.	Number.				Per cent.			
	Boys.		Girls.		Boys.		Girls.	
	Good or excellent nutrition.	Fair or poor nutrition.	Good or excellent nutrition.	Fair or poor nutrition.	Good or excellent nutrition.	Fair or poor nutrition.	Good or excellent nutrition.	Fair or poor nutrition.
6-7	590	144	579	133	100.0	100.0	100.0	100.0
6	188	43	186	37	31.9	29.9	32.1	27.8
7	402	101	393	96	68.1	70.1	67.9	72.2
8-9	990	247	974	235	100.0	100.0	100.0	100.0
8	470	133	462	110	47.5	53.8	47.4	46.8
9	520	114	512	125	52.5	46.2	52.6	53.2
10-11	1,067	234	940	220	100.0	100.0	100.0	100.0
10	573	118	480	113	53.7	50.4	51.1	51.4
11	494	116	460	107	46.3	49.6	48.9	48.6
12-13	904	158	938	143	100.0	100.0	100.0	100.0
12	479	94	490	79	53.0	59.5	52.2	55.2
13	425	64	448	64	47.0	40.5	47.8	44.8
14-16	623	80	700	74	100.0	100.0	100.0	100.0
14	326	43	348	52	52.4	53.8	49.7	70.3
15	199	28	216	13	31.9	35.0	30.9	17.6
16	98	9	136	9	15.7	11.2	19.4	12.1

While there is some variation, the 2-year age groups for each nutrition grade are made up of roughly the same proportion of children in each single year of age, and therefore the broader age groups ought to be fairly comparable as between the two nutrition groups.

TABLE II.—*Percentage distributions according to weight, by age, sex, and nutrition groups.*

[Percentage distributions according to weight of children in each age group of good or excellent nutrition compared with those of fair or poor nutrition as judged from clinical evidence.]

(9,973 children of native white parents in South Carolina, Virginia, Maryland, Delaware, and New York.)

BOYS.

Weight in pounds.	6 and 7 years.		8 and 9 years.		10 and 11 years.		12 and 13 years.		14, 15, and 16 yrs.	
	Good or excellent.	Fair or poor.	Good or excellent.	Fair or poor.	Good or excellent.	Fair or poor.	Good or excellent.	Fair or poor.	Good or excellent.	Fair or poor.
All weights	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
30–34		2.8							.2	
35–39	2.9	6.9	.1	.8	.1				.2	
40–44	14.7	32.6	1.6	5.3						
45–49	28.6	36.8	10.0	23.9	.7	4.3		.6		
50–54	30.2	13.9	22.7	28.7	3.0	9.0	.1	1.3		
55–59	16.1	4.9	25.5	23.1	11.0	20.9	.8	1.9	.3	
60–64	4.7	1.4	20.3	13.8	17.1	30.3	4.1	8.2	.2	2.5
65–69	1.9		11.6	2.4	23.5	20.1	7.3	22.2	1.6	10.0
70–74	.3		5.5	2.0	20.1	6.8	14.5	23.4	1.9	6.3
75–79			1.4		12.1	7.7	16.4	15.8	4.2	15.0
80–84	.2		.7		6.2	.9	18.5	12.7	7.2	17.5
85–89			.2		2.7		12.8	7.6	9.0	16.3
90–94	.3	.7	.3		1.4		7.4	3.2	8.3	5.0
95–99			.1		1.1		7.2	3.2	10.3	10.0
100–104					.5		4.0		11.4	8.8
105–109					.1		3.1		8.7	3.8
110–114					.1		1.5		7.4	2.5
115–119					.1		1.4		7.1	
120–124					.2		.6		5.5	1.2
125–129							.1		5.8	1.2
130–134									4.7	
135–139							.2		2.4	
140–144									1.4	
145–149									1.6	
150–154									.5	
155–159									.2	
160–164										
165–169										
170–174										
175–179										
180–184									.2	

TABLE II.—*Percentage distributions according to weight, by age, sex, and nutrition groups*—Continued.

GIRLS.

Weight in pounds.	6 and 7 years.		8 and 9 years.		10 and 11 years.		12 and 13 years.		14, 15, and 16 yrs.	
	Good or excel-lent.	Fair or poor.	Good or excel-lent.	Fair or poor.	Good or excel-lent.	Fair or poor.	Good or excel-lent.	Fair or poor.	Good or excel-lent.	Fair or poor.
All weights	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
30–34	.7	1.5	.....	.4	.....	.....	.....	.....	.....	.....
35–39	7.3	16.5	.4	2.1	.....	.....	.....	.....	.....	.....
40–44	23.7	40.6	3.7	12.3	.1	1.8	.1	.7	.....	.....
45–49	32.8	28.6	14.6	33.2	1.6	8.6	.....	.7	.....	.....
50–54	22.3	9.0	25.9	28.1	6.4	16.8	.2	4.9	.....	.....
55–59	8.8	3.0	21.3	14.9	14.6	25.5	1.4	8.4	.....	.....
60–64	3.3	.8	16.9	5.5	21.0	21.4	4.2	15.4	.3	2.7
65–69	.5	.....	7.1	3.0	19.1	15.0	7.5	17.5	.4	1.4
70–74	.3	.....	4.1	.....	14.0	5.9	10.4	13.3	.9	8.1
75–79	.3	.....	1.4	.....	9.0	3.2	12.6	16.8	2.7	13.5
80–84	.....	.....	.7	.4	4.8	1.4	13.0	9.8	4.0	10.8
85–89	.....	.....	.6	.....	3.2	.5	13.1	4.9	7.6	17.6
90–94	.....	.....	.....	.....	2.2	.....	9.7	4.2	6.6	10.8
95–99	.....	.....	.1	.....	1.4	.....	7.5	2.1	12.4	16.2
100–104	.....	.....	.1	.....	.7	.....	6.7	.7	12.6	5.4
105–109	.....	.....	.....	.....	.6	.....	4.8	.7	12.6	4.1
110–114	.....	.....	.....	.....	.4	.....	2.5	.....	10.7	2.7
115–119	.....	.....	.....	.....	.2	.....	2.0	.....	10.0	6.8
120–124	.....	.....	.....	.....	.1	.....	1.2	.....	5.4	.....
125–129	.....	.....	.....	.....	.2	.....	.9	.....	5.4	.....
130–134	.....	.....	.....	.....	.1	.....	.5	.....	3.0	.....
135–139	.....	.....	.....	.....	.....	.....	1.0	.....	1.3	.....
140–144	.....	.....	.....	.....	.....	.....	.4	.....	1.0	.....
145–149	.....	.....	.....	.....	.....	.....	.2	.....	1.1	.....
150–154	.....	.....	.....	.....	.....	.....	.1	.....	.9	.....
155–159	.....	.....	.....	.....	.1	.....	.....	.....	.1	.....
160–164	.....	.....	.....	.....	.....	.....	.1	.....	.3	.....
165–169	.....	.....	.....	.....	.....	.....	.....	.....	.1	.....
170–174	.....	.....	.....	.....	.....	.....	.....	.....	.1	.....
175–179	.....	.....	.....	.....	.....	.....	.....	.....	.1	.....
180–184	.....	.....	.....	.....	.....	.....	.....	.....	.1	.....
185–189	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
190–194	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
195–199	.....	.....	.....	.....	.....	.....	.....	.....	.3	.....

TABLE III.—*Percentage distributions according to standing height, by age, sex, and nutrition groups.*

[Percentage distributions according to standing height of children in each age group of good or excellent nutrition compared with those of fair or poor nutrition as judged from clinical evidence.]

(9,973 children of native white parents in South Carolina, Virginia, Maryland, Delaware, and New York.)

Standing height in inches.	6 and 7 years.		8 and 9 years.		10 and 11 years.		12 and 13 years.		14, 15, and 16 years.	
	Good or excellent.	Fair or poor.	Good or excellent.	Fair or poor.	Good or excellent.	Fair or poor.	Good or excellent.	Fair or poor.	Good or excellent.	Fair or poor.
BOYS.										
All heights	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
30–31	.2									
32–33										
34–35										
36–37									.3	
38–39	.3	1.4								
40–41	3.4	3.5	.4							
42–43	8.3	9.0	.7	1.2	.1					
44–45	24.1	32.6	3.2	4.0	.4		.1			
46–47	24.9	29.2	11.2	14.2	1.1	2.6	.6		.2	
48–49	26.9	20.1	27.1	36.0	3.7	8.1	.4	.6	.2	
50–51	8.8	2.1	27.4	24.7	16.6	24.8	1.4	2.5	.2	
52–53	2.4	2.1	20.6	15.0	31.3	31.6	8.5	14.6	.8	5.0
54–55	.2		7.5	4.9	26.1	21.8	19.2	21.5	3.2	10.0
56–57	.2		1.5		13.1	8.1	26.1	29.7	6.3	21.3
58–59	.2		.3		5.9	1.7	21.7	20.3	14.9	26.2
60–61	.2				1.2	.4	13.9	7.6	19.9	15.0
62–63			.1		.4	.4	6.3	1.9	19.4	16.2
64–65					.1		1.2	1.3	17.7	2.5
66–67						.4	.2		9.9	3.8
68–69							.2		6.6	
70–71									.3	
72–73									.2	
GIRLS.										
All heights	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
30–31										
32–33										
34–35	.2									
36–37										
38–39	.9									
40–41	4.1	5.3	.1							
42–43	13.3	12.0	.8	1.7	.1	.5				
44–45	24.2	32.3	3.7	6.4	.2	.5				
46–47	28.5	28.6	14.5	15.3	1.2	3.2	.1	.7		
48–49	19.3	17.3	27.7	37.5	4.9	9.5	.5	.7		
50–51	7.6	2.3	26.3	23.8	15.5	17.7	1.7	6.3		
52–53	1.0	1.5	19.1	11.5	28.4	32.3	5.0	14.7	.7	1.4
54–55	.5	.8	5.6	2.6	25.4	23.2	12.4	19.6	1.4	5.4
56–57	.2		1.0	.9	15.0	7.7	20.5	17.5	3.0	2.7
58–59			.8		6.0	3.2	24.6	18.9	10.0	24.3
60–61	.2		.1		2.3	2.3	23.1	12.6	23.9	29.7
62–63			.1		.4		9.1	6.3	35.4	24.3
64–65			.1	.4	.4		2.8	2.8	19.4	12.2
66–67					.1		.2		5.1	
68–69									1.0	
70–71										
72–73										

TABLE IV.—*Percentage distributions according to sitting height, by age, sex, and nutrition groups.*

[Percentage distributions according to sitting height of children in each age group of good or excellent nutrition, compared with those of fair or poor nutrition as judged from clinical evidence.]

(9,973 children of native white parents in South Carolina, Virginia, Maryland, Delaware, and New York.)

Sitting height in inches	6 and 7 years.		8 and 9 years.		10 and 11 years.		12 and 13 years.		14, 15, and 16 years.	
	Good or excellent.	Fair or poor.	Good or excellent.	Fair or poor.	Good or excellent.	Fair or poor.	Good or excellent.	Fair or poor.	Good or excellent.	Fair or poor.
BOYS.										
All heights	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
19										
20		.7	.1						.2	
21	1.4	2.8					.1		.2	
22	3.4	4.9	.2	.4	.2				.2	
23	10.7	13.9	2.0	2.0	.5					
24	29.8	40.3	9.1	15.0	.8	3.4	.3			
25	24.9	18.1	19.9	27.5	4.9	8.1	.6	1.3	.3	
26	19.2	13.9	31.8	34.8	19.4	23.5	3.5	5.1	.3	2.5
27	8.0	4.2	23.0	14.2	27.3	34.6	10.0	15.8	2.4	6.3
28	1.7	1.4	10.1	5.7	23.4	17.9	22.5	32.3	5.5	22.5
29	.7		2.9	.4	15.7	9.0	26.1	27.2	11.9	23.7
30	.2		.7		6.3	3.4	21.0	10.8	16.9	18.7
31	.2		.1		1.5		10.2	5.1	18.6	17.5
32					.1		4.3	.6	14.8	5.0
33							1.0	.6	14.8	2.5
34							.3		8.5	1.3
35							.1		4.3	
36									1.0	
37									.3	
38								1.3		
39										
GIRLS.										
All heights	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
19	.2									
20	.2	.8								
21	2.4	2.3	.2			.5				
22	5.2	6.0	.2	1.3						
23	14.2	20.3	2.5	5.5	.4	1.8	.2		.1	
24	29.4	35.3	12.8	14.0	1.9	2.3	.3	.7		
25	25.2	22.6	20.2	28.1	4.6	10.0	.6	2.8	.1	
26	16.4	9.0	30.1	31.5	18.2	25.0	3.1	4.9	.4	
27	5.2	3.0	22.4	13.6	26.4	29.1	7.0	17.5	.9	1.4
28	1.4	.8	8.4	5.1	21.8	19.1	13.0	17.5	2.1	6.8
29	.2		2.6	.9	17.8	7.3	20.3	19.6	2.9	8.1
30			.4		5.4	2.3	24.1	21.0	14.4	23.0
31			.1		2.4	1.8	18.3	11.9	19.7	23.0
32			.1		.7	.9	7.8	2.1	28.7	21.6
33					.2		3.9	2.1	18.9	12.2
34	.2				.1		1.3		9.6	
35									2.0	4.1
36									.1	
37										
38										
39										

It was noted with reference to Figure 1 that *on the average* the children of "good" or "excellent" nutrition were larger in weight and in standing and sitting height than children of "fair" or "poor"

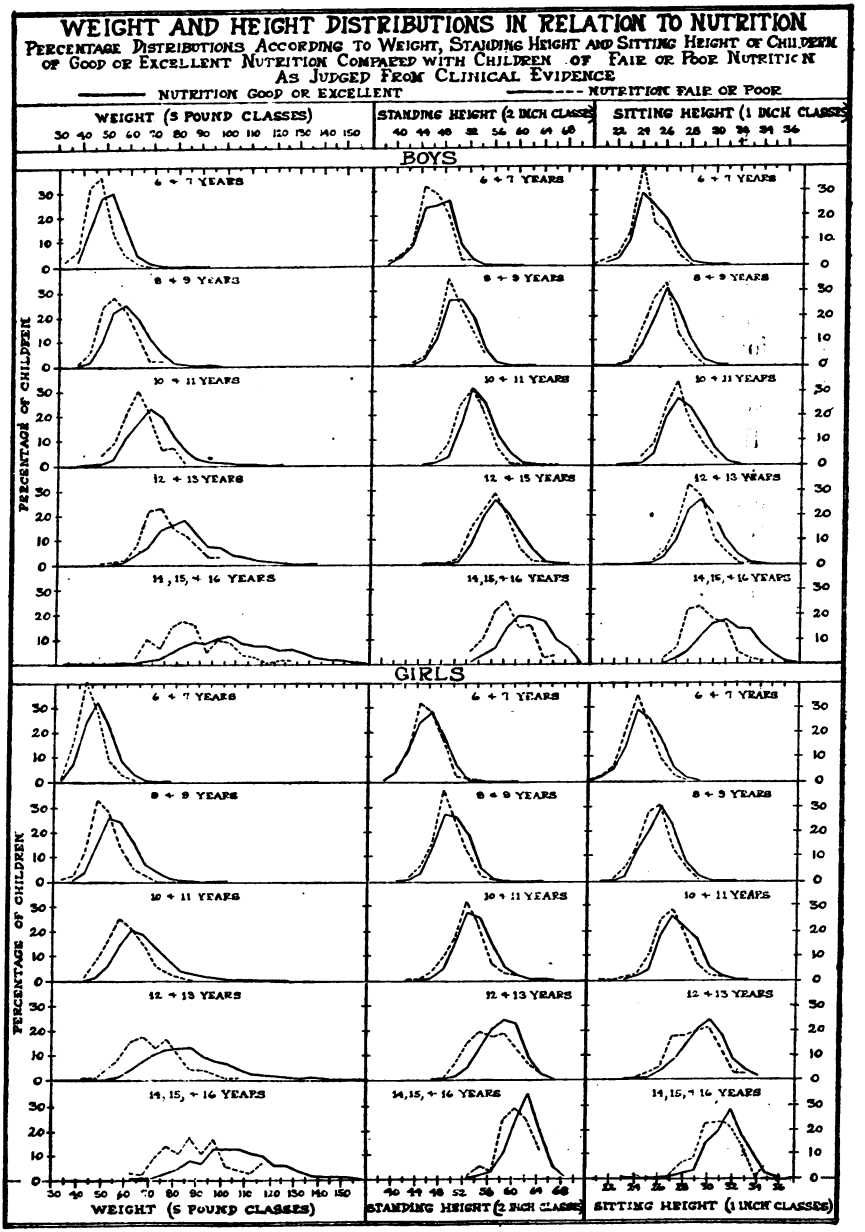

FIG. 2.

nutrition. In Figure 2 the distributions of these two nutrition groups of children according to weight and according to standing and sitting height are compared for different sex and age groups. Although

the curves are somewhat irregular, especially in the older age groups, the mode is fairly well defined for each measurement. In regard to weight, the modal weight, like the average weight, is in each age group distinctly less for the "fair" or "poor" nutrition group than for the children of "good" or "excellent" nutrition.

But it is important to note that, although the children in the "fair" or "poor" nutrition group weigh less *on the average* than those in the "good" or "excellent" group, a large proportion of the children in the well-nourished group weigh less than some in the "fair" or "poor" group and a considerable proportion weigh less than the average weight of the children of "fair" or "poor" nutrition. Figure 2 brings out this fact graphically. While all the children in the lower nutrition groups are not classed as poorly nourished, these curves seem to indicate that weight measurements alone are not sufficient for determining nutrition, and a check by a physical examination is necessary to detect at least certain cases of malnutrition.

As regards standing and sitting height, the differences are not so clear; the modal heights of the two nutrition groups appear to be practically the same in the majority of the age groups, but the curve for the less well nourished is in practically all cases a little nearer the left—that is, heights tend to be a little less in the "fair" or "poor" nutrition group. This tendency seems to increase as age increases, since as regards both standing and sitting height the mode in the last two age groups (12–13 and 14–16 years) seems to be appreciably less for the "fair" or "poor" group than for the well-nourished children.

In order to show more clearly this relation of weight to nutritional status, an attempt was made to construct weight curves representing each of the four nutrition groups used. In order to get sufficient numbers of children for the two extreme groups ("excellent" and "poor"), it was necessary to consider the weights of children of all ages at the same time. To do this legitimately the following statistical procedure was used: (1) Average weights were calculated for children of each sex for each year of age and the percentage deviation in the weight of each child from the average weight of all children of the same sex and age was computed; (2) a distribution according to these deviations in weight was then made for each nutrition group by computing the number of children who were not over 3 per cent above or 3 per cent below the average weight for their own sex and age, then the number who were 4 to 10 per cent above, 11 to 17 per cent above, etc., in 7 per cent classes; in a similar manner the children who were below the average were divided into classes of the same interval; (3) these numbers were combined for both sexes and all ages, but each nutrition group was kept separate. The result was a frequency distribution for children of each of the four nutrition grades according to the percentage deviation from the average weight of all children of the same sex and age. Table V shows this distribution in actual numbers of children in each class.

TABLE V.—*Relative deviation from average weight in relation to nutrition.*

Frequency distributions of children in different nutritional groups according to the percentage deviation from the average weight of all children of the same sex and age.

(9,973 native white children 6-16 years of age in South Carolina, Virginia, Maryland, Delaware, and New York.)

Nutrition.	Total children.	Number of children who are each given per cent above or below the average weight of all children of the same sex and age.																										
		Below average.							Average class.	Above average.																		
		−46 to −52 per cent.	−39 to −45 per cent.	−32 to −38 per cent.	−25 to −31 per cent.	−18 to −24 per cent.	−11 to −17 per cent.	−4 to −10 per cent.	−3 to +3 per cent.	+4 to +10 per cent.	+11 to +17 per cent.	+18 to +24 per cent.	+25 to +31 per cent.	+32 to +38 per cent.	+39 to +45 per cent.	+46 to +52 per cent.	+53 to +59 per cent.	+60 to +66 per cent.	+67 to +73 per cent.	+74 to +80 per cent.	+81 to +87 per cent.	+88 to +94 per cent.	+95 to +101 per cent.	+102 to +108 per cent.	+109 to +115 per cent.	+116 to +122 per cent.	+123 to +129 per cent.
BOTH SEXES.																												
Excellent	152						3	5	19	25	26	28	13	11	4	7	5	2	4									
Good	8,153		2	31	136	425	1,002	1,626	1,665	1,391	861	485	221	129	70	37	35	10	8	10	4	2	1		1			1
Fair	1,534		7	33	83	226	366	364	242	141	47	19	3	1		1				1								
Poor	134		2	6	14	31	36	24	13	6	2																	
BOYS.																												
Excellent	59						1		6	14	13	10	3	4	3	3	1		1									
Good	4,115		1	13	63	169	491	844	863	759	455	221	107	71	23	16	10	1	5	2	1							
Fair	790		2	8	31	97	196	198	139	81	24	10	2	1						1								
Poor	73			2	9	18	14	21	6	3																		
GIRLS.																												
Excellent	93						2	5	13	11	13	18	10	7	1	4	4	2	3									
Good	4,038		1	18	73	256	511	782	802	632	406	264	114	58	47	21	25	9	3	8	3	2	1		1			1
Fair	744		5	25	52	129	170	166	103	60	23	9	1			1												
Poor	61		2	4	5	13	22	3	7	3	2																	

TABLE VI.—*Relative deviation from average weight in relation to nutrition.*

Percentage distributions of children in different nutritional groups according to the percentage deviation from the average weight of all children of the same sex and age.

(9,973 native white children 6–16 years of age in South Carolina, Virginia, Maryland, Delaware, and New York.)

Nutrition.	Total children.	Percentage of children who are each given per cent above or below the average weight of all children of the same sex and age.																								
		Below average.							Average class.	Above average.																
		−46 to −52 per cent.	−39 to −45 per cent.	−32 to −38 per cent.	−25 to −31 per cent.	−18 to −24 per cent.	−11 to −17 per cent.	−4 to −10 per cent.	−3 to +3 per cent.	+4 to +10 per cent.	+11 to +17 per cent.	+18 to +24 per cent.	+25 to +31 per cent.	+32 to +38 per cent.	+39 to +45 per cent.	+46 to +52 per cent.	+53 to +59 per cent.	+60 to +66 per cent.	+67 to +73 per cent.	+74 to +80 per cent.	+81 to +87 per cent.	+88 to +94 per cent.	+95 to +101 per cent.	+102 to +108 per cent.	+109 to +115 per cent.	+116 to +122 per cent.	+123 to +129 per cent.
BOTH SEXES.																										
Excellent	100.0	.....	.....	.....	.....	.....	2.0	3.3	12.5	16.4	17.1	18.4	8.6	7.2	2.6	4.6	3.3	1.3	2.6	.....	.....	.....	.....	.....	.....	.....
Good	100.0	.....	0	0.4	1.7	5.2	12.3	19.9	20.4	17.1	10.6	5.9	2.7	1.6	.9	.5	.4	.1	.1	0.1	0	0	0	.....	0	 0
Fair	100.0	.....	0.5	2.2	5.4	14.7	23.9	23.7	15.8	9.2	3.1	1.2	.2	.1	.....	.1	.....	.....	.....	.1	.....	.....	.....	.....	.....	.....
Poor	100.0	.....	1.5	4.5	10.4	23.1	26.9	17.9	9.7	4.5	1.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
BOYS.																										
Excellent	100.0	.....	.....	.....	.....	.....	1.7	.....	10.2	23.7	22.0	16.9	5.1	6.8	5.1	5.1	1.7	.....	1.7	.....	.....	.....	.....	.....	.....	.....
Good	100.0	.....	0	0.3	1.5	4.1	11.9	20.5	21.0	18.4	11.1	5.4	2.6	1.7	.6	.4	.2	0	.1	0	0.	.....	.....	.....	.....	.....
Fair	100.0	.....	0.3	1.0	3.9	12.3	24.8	25.1	17.6	10.3	3.0	1.3	.3	.1	.....	.....	.....	.....	.....	0.1	.....	.....	.....	.....	.....	.....
Poor	100.0	.....	.....	2.7	12.3	24.7	19.2	28.8	8.2	4.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
GIRLS.																										
Excellent	100.0	.....	.....	.....	.....	.....	2.2	5.4	14.0	11.8	14.0	19.4	10.8	7.5	1.1	4.3	4.3	2.2	3.2	.....	.....	.....	.....	.....	.....	.....
Good	100.0	.....	0	0.4	1.8	6.3	12.7	19.4	19.9	15.7	10.1	6.5	2.8	1.4	1.2	.5	.6	.2	.1	0.2	0.1	0	0	.....	0	 0
Fair	100.0	.....	0.7	3.4	7.0	17.3	22.8	22.3	13.8	8.1	3.1	1.2	.1	.....	.....	.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Poor	100.0	.....	3.3	6.6	8.2	21.3	36.1	4.9	11.5	4.9	3.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

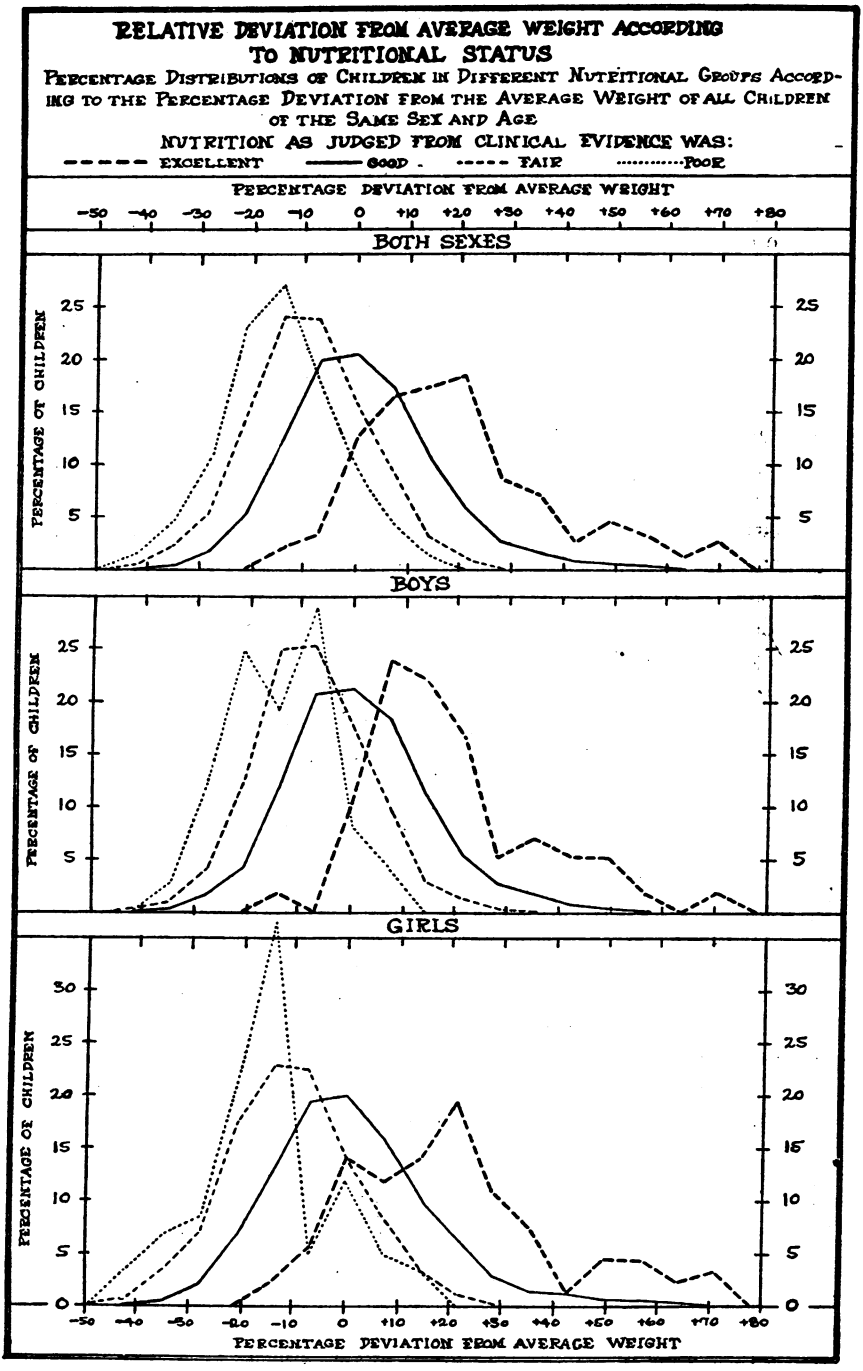
RELATIVE DEVIATION FROM AVERAGE WEIGHT ACCORDING TO NUTRITIONAL STATUS
PERCENTAGE DISTRIBUTIONS OF CHILDREN IN DIFFERENT NUTRITIONAL GROUPS ACCORDING TO THE PERCENTAGE DEVIATION FROM THE AVERAGE WEIGHT OF ALL CHILDREN OF THE SAME SEX AND AGE
NUTRITION AS JUDGED FROM CLINICAL EVIDENCE WAS:
EXCELLENT
GOOD
FAIR
POOR
PERCENTAGE DEVIATION FROM AVERAGE WEIGHT
-50 -40 -30 -20 -10 0 +10 +20 +30 +40 +50 +60 +70 +80
BOTH SEXES
BOYS
GIRLS
PERCENTAGE OF CHILDREN
0 5 10 15 20 25 30
PERCENTAGE DEVIATION FROM AVERAGE WEIGHT

FIG. 3.

Since the number of children of "good" nutrition is so much larger than any of the other grades, comparison is difficult. In order to make the different nutrition groups comparable, each distribution was reduced to a percentage basis, 100 per cent representing the total children in any given nutrition group. Table VI shows these percentage distributions and Figure 3 shows them graphically.

Although there are irregularities, the curves in Figure 3, particularly the curves for both sexes combined, show clearly that while the modal weight is greater in the better nourished groups there is a definite overlapping. Some of the "excellent" and many of the "good" group are as much under the average weight as some of the "poor" group. Although height was undoubtedly a factor in this, it seems hardly likely that it would explain the whole difference. Whatever these other factors may have been, it seems clear that weight alone is not sufficient for determining nutrition for the individual child, if the diagnosis of nutrition here used is at all accurate. The classification of children according to nutrition by weight alone would therefore class as undernourished some children who would be judged as well nourished as the result of a physical examination. It would also fail to detect some children who are poorly nourished but who weigh as much as the average. The situation seems to be that undernourished children on the average weigh less than well-nourished children, but the fact that an individual child weighs less or more than the average is not conclusive proof that he is undernourished or overnourished; he may weigh less and yet be well nourished and he may weigh more than the average and yet be poorly nourished.

NUTRITION, UNDERWEIGHT, AND OVERWEIGHT IN RELATION TO SEX AND AGE.

It was found that the percentage of children who were judged as not well nourished varies quite definitely with age. Table VII shows by sex and age the percentage of children whose nutrition was set down as "fair" or "poor." These percentages are plotted in Figure 4–A. The proportion of children who were "fair" or "poor" in nutrition as judged from clinical evidence is highest at 8 years of age—20.7 per cent—and falls off as age increases to 7.1 per cent among 16-year-old children. No consistent difference appears between boys and girls as regards the percentage who were not well nourished.

TABLE VII.—*Nutrition in relation to sex and age.*

Percentage of children classed as fair or poor among 9,973 examined and graded as excellent, good, fair, or poor in nutrition.

(Children of native white parents in South Carolina, Virginia, Maryland, Delaware, and New York.)

Age nearest birthday.	Per cent of children classed as fair or poor in nutrition.			Total number of children examined.		
	Both sexes.	Boys.	Girls.	Both sexes.	Boys.	Girls.
All ages	16.7	17.1	16.3	9,973	5,037	4,936
6	17.6	18.6	16.6	454	231	223
7	19.9	20.1	19.6	992	503	489
8	20.7	22.1	19.2	1,175	603	572
9	18.8	18.0	19.6	1,271	634	637
10	18.0	17.1	19.1	1,284	691	593
11	18.9	19.0	18.9	1,177	610	567
12	15.1	16.4	13.9	1,142	573	569
13	12.8	13.1	12.5	1,001	489	512
14	12.4	11.7	13.0	769	369	400
15	9.0	12.3	5.7	456	227	229
16	7.1	8.4	6.2	252	107	145

In determining the extent of underweight and overweight at different ages, Wood's height-weight-age table for boys and girls was used as a standard.[4] Each child was classified as follows:

Underweight.—More than 10 per cent below Wood's standard.

Normal weight.—Not over 10 per cent below or 20 per cent above Wood's standard.

Overweight.—More than 20 per cent above Wood's standard.

Table VIII shows the percentage of children of each sex and age who were more than 10 per cent underweight and the percentage who were more than 20 per cent overweight. Figure 4–B shows the same thing graphically.

TABLE VIII.—*Underweight and overweight in relation to sex and age.*

Percentage of children of each sex and age who were more than 10 per cent underweight and percentage who were more than 20 per cent overweight according to Wood's height-weight-age tables for boys and girls.

(Children of native white parents in South Carolina, Virginia, Maryland, Delaware, and New York.)

Age nearest birthday.	Per cent of children.					
	Underweight (more than 10 per cent under Wood's standard).			Overweight (more than 20 per cent over Wood's standard).		
	Both sexes.	Boys.	Girls.	Both sexes.	Boys.	Girls.
All ages	24.2	19.5	28.9	2.3	1.3	3.2
6	14.1	14.3	13.9	2.3	2.2	2.3
7	15.3	13.8	16.8	1.2	1.2	1.2
8	20.9	20.3	21.5	1.1	.5	1.8
9	23.8	18.6	29.1	1.0	1.1	1.0
10	23.6	20.1	27.8	2.1	.7	3.8
11	26.6	18.0	35.9	2.4	1.5	3.4
12	28.9	21.3	36.6	3.4	2.0	4.8
13	28.2	20.4	35.7	3.6	2.1	5.0
14	29.6	22.2	36.1	3.6	1.7	5.3
15	27.4	23.9	30.5	2.1	.5	3.5
16	25.8	31.4	21.7	3.6	1.0	5.6

[4] Right Height and Weight of Boys and Girls, prepared by Dr. Thomas D. Wood.

Figure 4–B may be studied in comparison with Figure 4–A, which shows the per cent of children at each age who were "fair" or "poor" in nutrition as judged from clinical evidence. Disregarding the actual height of the curves, which may not be comparable, the *relative* incidence of underweight and of unsatisfactory nutrition as judged from clinical evidence among different sexes and ages may be compared. In the chart showing nutrition as judged from clinical evidence (fig. 4–A) the percentage of children who were not well nourished decreases regularly after the eighth year of age. Moreover, there seems to be no consistent or significant difference between boys and girls in this respect. But in regard to underweight as judged from Wood's table (fig. 4–B) there is an increase in the per cent of children who are underweight through the sixteenth year for boys and through the fourteenth year for girls. Moreover, there are wide and consistent differences between girls and boys, the girls showing more underweight at all ages except 6 and 16 years.

On examination of the lower curves in Figure 4–B, showing the per cent of children who are overweight, it may be seen that there is not only a larger percentage of girls who are underweight, but at all ages except 7 and 9 years the per cent of girls who are overweight is greater than the per cent of boys who are overweight.

Taking all ages together, 19.5 per cent of the boys were underweight, as against 28.9 per cent of the girls. Overweight also showed a larger percentage of girls who were outside the limit of 20 per cent above Wood's table, 1.3 per cent of the boys being overweight, as against 3.2 per cent of the girls.

Reference to a former publication[5] of the U. S. Public Health Service may throw some light on this difference between the sexes in respect to the percentage who are underweight. In this study of heights and weights of children it was found that the average relative variation in weight of children of the same height and age was greater among girls than among boys from 9 to 16 years, inclusive, and moreover that the variation in both boys and girls increased with age up to at least the fourteenth year.

The 10 per cent variation below Wood's standard weight used in classifying children for Table VIII and so generally used in school health work fails to take into account this difference in the relative variation at different ages and for the two sexes. The result is that during the ages of greatest relative variation a higher percentage of children fall below the 10 per cent limit. That it is a matter of normal variation rather than an unusually large amount of malnutrition

[5] Heights and Weights of School Children—A Study of the Heights and Weights of 14,335 Native White School Children in Maryland, Virginia, North and South Carolina, by T. Clark, E. Sydenstricker, and S. D. Collins, Public Health Reports, vol. 37, No. 20, May 19, 1922, pp. 1199 ff, especially Table X and fig. 7. See also fig. 4. (Reprint 750.)

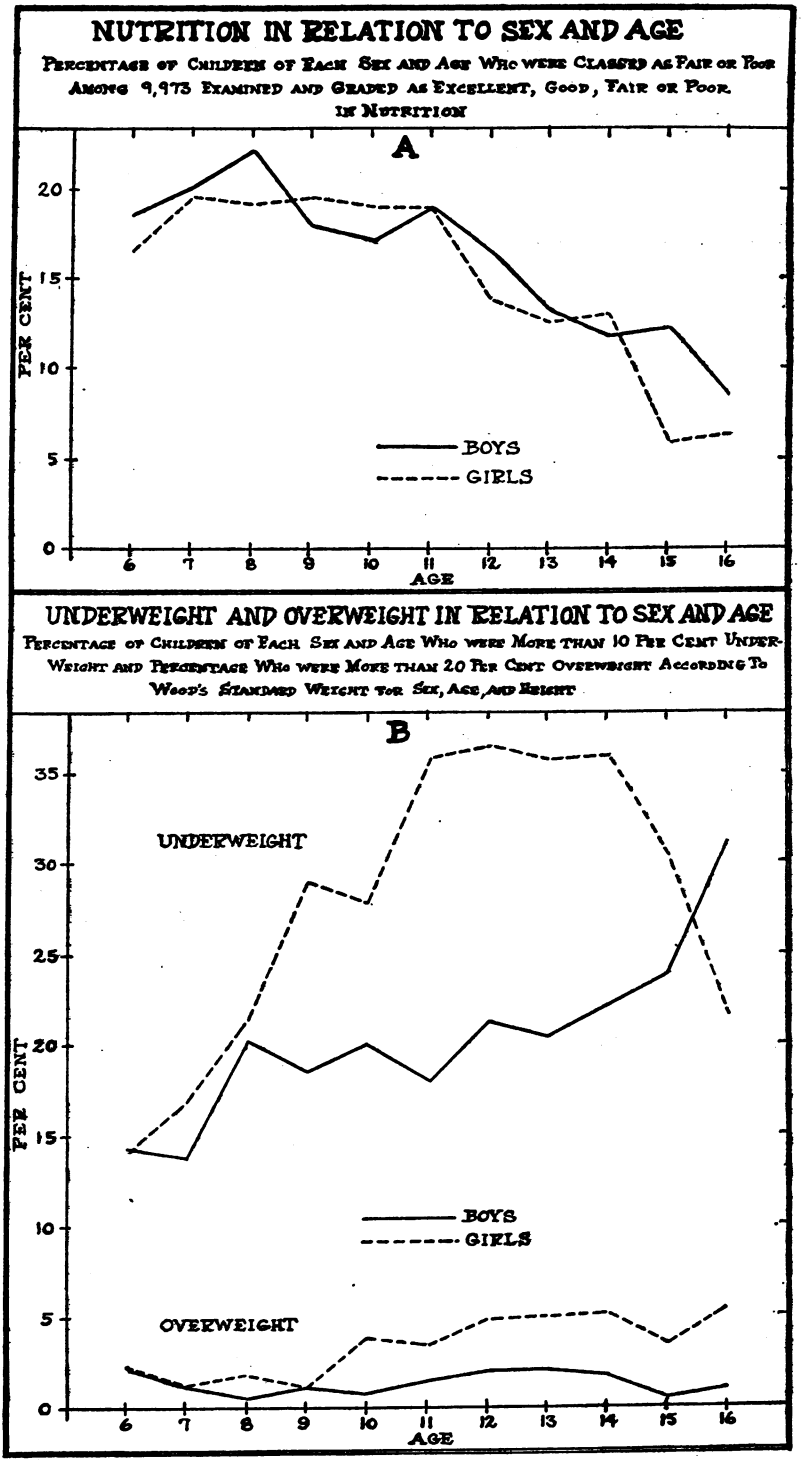
NUTRITION IN RELATION TO SEX AND AGE
PERCENTAGE OF CHILDREN OF EACH SEX AND AGE WHO WERE CLASSED AS FAIR OR POOR AMONG 9,973 EXAMINED AND GRADED AS EXCELLENT, GOOD, FAIR OR POOR IN NUTRITION
A
PER CENT
20
15
10
5
0
BOYS
GIRLS
6 7 8 9 10 11 12 13 14 15 16
AGE
UNDERWEIGHT AND OVERWEIGHT IN RELATION TO SEX AND AGE
PERCENTAGE OF CHILDREN OF EACH SEX AND AGE WHO WERE MORE THAN 10 PER CENT UNDERWEIGHT AND PERCENTAGE WHO WERE MORE THAN 20 PER CENT OVERWEIGHT ACCORDING TO WOOD'S STANDARD WEIGHT FOR SEX, AGE, AND HEIGHT
B
PER CENT
35
30
25
20
15
10
5
0
UNDERWEIGHT
OVERWEIGHT
BOYS
GIRLS
6 7 8 9 10 11 12 13 14 15 16
AGE

FIG. 4.

among girls seems clear from the fact that girls show more overweight as well as more underweight than boys and that the per cent of each sex who are overweight tends to rise at the same ages as the per cent who are underweight.

TABLE IX.—*Underweight and overweight in relation to nutrition as judged from clinical evidence.*

Percentage of children of each nutrition grade as judged from clinical evidence who were more than 10 per cent underweight and percentage who were more than 20 per cent overweight according to Wood's height-weight-age tables for boys and girls.

(Children of Native White Parents in South Carolina, Virginia, Maryland, Delaware and New York.)

Nutrition as judged from clinical evidence.	Per cent of children—					
	Underweight (more than 10 per cent under Wood's standard).			Overweight (more than 20 per cent over Wood's standard).		
	Both sexes.	Boys.	Girls.	Both sexes.	Boys.	Girls.
All nutritions	24.2	19.5	28.9	2.3	1.3	3.2
Excellent	4.1	3.5	4.4	14.3	5.3	20.0
Good	19.5	15.5	23.6	2.4	1.4	3.5
Fair	47.1	37.6	57.2	.3	.4	.3
Poor	60.1	66.2	72.9	.....	.....	.....

The analysis was carried a step further. The per cent of children who were underweight and who were overweight was computed for each nutrition class as judged from clinical evidence. Table IX shows the results. The per cent who were underweight increased as the nutritional status, as judged from clinical evidence, became less favorable. Four per cent of the "excellent" nutrition group were more than 10 per cent underweight according to Wood's standard. None of the "poor" nutrition group were overweight, but 40 per cent of them were within the 10 per cent limit of Wood's table. In a comparison of boys and girls in each nutrition class the per cent of girls who were underweight exceeds the per cent of boys in every case. In two of the three nutrition grades in which there were overweight children the per cent of girls who were overweight exceeds that of boys. It should be remembered in this connection that the per cent of girls who were not well nourished ("fair" or "poor"), as judged from clinical evidence, was not significantly or consistently different from the boys.

SUMMARY.

1. Physical examinations were made of 9,973 school children 6 to 16 years of age, inclusive, in South Carolina, Virginia, Maryland, Delaware, and New York State. At the same time the physician set down his judgment of the child's nutrition, checking it as "excellent," "good," "fair," or "poor."

2. The mean measurements of children of "good" or "excellent" nutrition were compared by single years of age with those of "fair" or "poor" nutrition. The "good" or "excellent" group was consistently larger in mean weight, mean standing height, mean sitting height, and in the mean weight-height index.

3. The distributions according to weight, standing height, and sitting height for children of "good" or "excellent" nutrition were compared by age groups with those for children of "fair" or "poor" nutrition. Although the modal weight was greater for the "good" or "excellent" group, there was a large area of overlapping of the two curves. The same was true of the standing and sitting height curves, except that it was not so clear that the modal standing and sitting heights for the "good" or "excellent" group were any greater than for the "fair" or "poor" group.

4. Curves were constructed showing the percentage distribution of children in each of the four nutrition groups according to the percentage deviation from the average weight of all children of the same sex and age. These curves showed that not only did some children of "good" nutrition weigh less than some children of "fair" nutrition, but some of "excellent" nutrition actually weighed less than some of "poor" nutrition.

Although *on the average* the children of poorer nutrition weigh less than those of better nutrition, weight alone does not seem to be sufficient for determining the nutrition of a given child. In order to pick out *individual* cases of poor nutrition, a physical examination by a trained physician should supplement physical measurements.

5. The percentage of children who were "fair" or "poor" in nutrition, as judged from clinical evidence, varied with age, increasing in the 6 to 8 year age groups and then declining in succeeding age groups. No significant difference in this respect appeared between boys and girls.

6. The percentage of children who were underweight (10 per cent below) and the percentage who were overweight (20 per cent above), as judged by Wood's table of weight for sex, age, and height, increased as age increased through the fourteenth year for girls and through the sixteenth year for boys. Girls showed a consistently higher percentage of underweight and a consistently higher percentage of overweight than boys.

If average weight is to be used as even a rough index of nutrition, it seems that the percentage deviation allowed for normal variation from the average should vary for different sexes and ages rather than be a constant 7 or 10 per cent, as usually used in school health work.

FUMIGATION OF VESSELS FROM PLAGUE-INFECTED PORTS.

OBSERVATIONS WITH ESPECIAL REFERENCE TO THE NECESSITY FOR FUMIGATING CRATES AND SIMILAR CARGO.

By S. B. GRUBBS, Surgeon, United States Public Health Service.

Fumigation is the chief defense of this country against bubonic plague. It is efficacious in proportion to the thoroughness with which it is done, as good results require not only a knowledge of proper methods but a conscientious and painstaking insistence upon details.

Rats hide in the small inclosed spaces of a vessel, such as double walls, pipe casings, and limbers, and the gas will not penetrate into these places if, on account of cargo, they can not be opened to allow the gas to enter. The presence of cargo does not affect the fumigation of storerooms and living quarters, which frequently harbor rats in relatively greater numbers than the holds.

In allowing freight to be discharged before fumigation, a certain risk is taken, which is increased if there are crates or other articles into which rats can enter and thus be carried ashore. Consequently, when the vessel is from a port with a definite infection, this dangerous freight should be fumigated. This may be done either on shipboard or upon lighters, according to circumstances.

In the plague campaign in Porto Rico in 1912, one of the first steps taken to prevent spread inland was to open and repack all crates bound from San Juan to the interior of the island. The discovery of a number of rats in these crates caused us to begin the fumigation of all such freight arriving from the Canary Islands, which were believed to be the original source of infection.

Various methods were used at different times. Sulphur dioxide, in a warehouse or on lighters under a tarpaulin, was efficient, but required long exposure and did some injury. Cyanide gas was a great improvement and was used either on lighters or in a galvanized iron shed erected especially for this purpose. This practice was continued for several years, and the reinfection of Porto Rico in 1921, believed also to have come from the Canary Islands, followed shortly after its discontinuance. At present, dangerous cargo is fumigated on arrival at San Juan, and it is described by Surg. C. M. Fauntleroy, as follows:

"The routine practice of fumigating all crated cargo, and especially crated packages of foods such as onions, garlic, and potatoes, brought to Porto Rico in Spanish vessels from ports in Spain and the Canary Islands, was instituted at San Juan about 18 months ago, for the reason that the epidemiological data secured as the result of a study made to determine the source of plague infection in Porto Rico at that time, and also again in 1921, pointed very conclusively to this cargo originating either in the ports of Spain

or the Canary Islands; for example: In both of the plague outbreaks in Porto Rico, mentioned above, plague rats were destroyed in certain warehouses in San Juan where the cargo referred to was being stored in large quantities.

"In the outbreak of 1921, the original focus of plague infection was located in and about a wholesale provision store at No. 43 Tetuan Street, where large amounts of crated foods were regularly received and stored and which originated either in Spain or the Canary Islands. Therefore, in view of the facts above stated, it was deemed a matter of great importance that all cargo brought to Porto Rico in Spanish vessels should be carefully fumigated for the destruction of rodents prior to allowing such cargo to be landed, and my experience in the fumigation of several hundred lighters loaded with the cargo in question, has convinced me that this cargo landed from Spanish vessels may, and does, furnish harborage for rodents, and, hence, it provides a means of conveying plague infection."

In 1920, freight arriving at Cristobal, Canal Zone, from Paita, Peru, was fumigated on lighters. Paita was then badly infected; but as there were no large docks, rats could reach the ships only by lighters or in freight. On arrival at Cristobal, such vessels discharged safe freight upon the dock, and unsafe freight into lighters lying on the free side of the ship. The freight in the lighters was fumigated before being transferred to the dock, and the vessel was fumigated when entirely empty. This arrangement was discontinued only when the periodic fumigation of all lighters at Paita was instituted, together with the examination or fumigation of all outgoing freight. As usually only a small part of a mixed cargo may harbor rats, it is frequently more convenient to leave the dangerous cargo on board to be fumigated in the holds after all or part of the safe cargo has been discharged. If much freight is left on board, several fumigations will be necessary.

Fumigation of cargo in lighters is not a difficult procedure. If closed lighters are available, they should be sealed up and fumigated in the ordinary way. If open lighters must be used, the cargo should be covered with large tarpaulins to make a tent, and cyanide generated underneath. To insure good results, the freight must be piled so as to leave air spaces and passageways for the circulation of the gas; but this must be carefully confined by sealing all cracks in the covered lighters, or by fastening the tarpaulins carefully, especially to the deck, battening them down with reasonably heavy timbers or with boards with weights upon them.

On account of the recent outbreak of plague at Barcelona, Spain, it has been necessary to take special precautions at New York with vessels arriving from that port. Measures begun in October, 1922, which include the fumigation of dangerous cargo, have been changed

but slightly, and these fumigations have resulted in no serious delays, such as are usually considered justified under similar circumstances.

Our procedure for such ships is as follows:

1. On arrival, the boarding officer obtains a cargo stowage plan and notifies the chief of the fumigation division, who personally boards the vessel and examines the manifest and holds to see if the vessel can be fumigated without removing any cargo.
2. Immigration and custom officials are permitted to board the vessel to complete their work.
3. Ship is held in stream on day of arrival and not permitted to dock until early next morning.
4. If not prepared to fumigate at this time, on account of deck cargo or holds that are filled to hatch coaming, the ship may discharge the deck cargo and barreled or case goods from the holds until the square of the hatch is clear, during daylight hours under the supervision of a guard.
5. Ship to pull out in stream at 4 p. m. if not fumigated the same day.
6. Fumigation of whole ship to be started promptly at 9 a. m., when the ship is prepared, four hours' exposure, and prolonged blowing out with aerothrust. When possible, the generating machine on the fumigating tug *Von Ezdorf* is to be used in conjunction with the usual method; the hose from the generator to be inserted into a ventilator opening to get gas beneath cargo at the same time it is generating in the square of the hatches.
7. The day following fumigation, two fumigators are to stand by with gas masks to recover additional rats or to run aerothrust if stevedores complain of gas while working cargo.
8. In event of live rats being seen by guards on watch, during discharge of cargo, the discharge is to be stopped and the vessel refumigated. This fractional fumigation is to be repeated at any time when, in the opinion of the fumigating officer, the cargo is such that the gas will not penetrate thoroughly.
9. When holds are completely filled with cargo that may harbor rats, such as bags of almonds or crates of vegetables, enough cargo must be discharged into lighters to permit the fumigation of the ship, the lighters to be fumigated when loaded.
10. When the ship in question carries cargo and passengers in transit, it will be treated as follows:
    - *a.* Either ship will remain in stream where New York cargo will be discharged into lighters and fumigated; or
    - *b.* The ship may go to the dock, if holds are not completely filled with cargo, and be fumigated there after crew and passengers have been removed.
11. Ship, in all cases, to be fumigated throughout after complete discharge of cargo.

Referring to paragraph 6 of these instructions, it should be noted that this first fumigation is complete in regard to superstructure, no space being omitted, unless the presence of rat harbors can be absolutely excluded by inspection. In preparing for this fumigation, all

inclosed space, such as double walls, must be opened to allow the gas to enter. In addition, while fumigation is in process, a careful search for rats is made in all parts of the deck, especially in boxes, vegetable bins, and life boats. The above is required in all our fumigations, but is stressed in vessels from badly infected ports.

With the superstructure and deck free from rats, it is considered safe to allow the vessel to discharge at the dock as usual, provided any cargo that may harbor rats is fumigated, as previously described, and the vessel itself again fumigated when entirely empty.

Report on two of the vessels treated by this procedure may be selected as examples. They are as follows:

American S. S. *City of Eureka:*

October 29, 1922: Inspected and held in quarantine.
October 30, 1922: Docked. Complete cyanide fumigation, 5 ounces per 1,000 cubic feet. Result, 25 rats.
October 31, 1922: 16 rats discovered while discharging.
November 8, 1922: Fumigated at Baltimore after complete discharge of cargo. Result, 4 rats.

One fumigator on guard before fumigation; two fumigators with gas masks on guard for 24 hours after fumigation.

Norwegian S. S. *Bessegen:*

December 8, 1922: Inspected and held in quarantine.
December 9, 1922: Docked. Complete cyanide fumigation before discharge of cargo. Four hours' exposure. Barrel generators in holds. Hose from fumigating tug's generator put down ventilator pipes. Total dosage for holds, 15 ounces per 1,000 cubic feet. Superstructure, complete fumigation, 5 ounces per 1,000 cubic feet. Two hours' exposure. Result, 4 rats.
December 10, 1922: Sunday. Cargo not worked. One guard on boat. Hatches open.
December 11–15, 1922: Discharging. No rats recovered.
December 16, 1922: Complete fumigation empty. Result, 5 rats.

In comparing the results of fractional fumigations of several vessels with the results obtained when the same ships were previously fumigated at New York after discharge of cargo, it has been observed that, as a rule, fractional fumigations yield more rats. Of the vessels treated, we have records of previous fumigations of but six. If these are typical we must ask ourselves if too many rats do not escape either in the freight or by other means before "fumigation after discharge."

Comparison of results of fractional and routine fumigation.

Steamer.	Fractional method.					Routine method; fumigation after discharge.		
	Rats recovered.		Total number of fumigations.	Number of rats per ship.	Average number of rats per fumigation.	Number of rats from all previous fumigations.	Number of fumigations.	Average number of rats per fumigation.
	Preliminary fumigation.	Final fumigation.						
Cabo Villano	9	0	2	9	4.5	4	2	2
City of Eureka	41	4	2	45	22.5	0	1	0
Bankdale	11	8	2	19	9.5	12	5	2.4
Cabo Espartel	9	1	2	10	5	10	4	2.5
Bessegen	4	5	2	9	4.5	0	2	0
Fenchurch	1	1	2	2	1	54	7	7.71
Total	75	19	12	94	.....	80	21	.....
Average number of rats per ship fumigated	.....				15.6	.....		3.8
Average number of rats per fumigation	.....				7.8	.....		3.8

This article has been prepared to emphasize the necessity, under certain conditions, of fumigating cargo and to submit a procedure for handling vessels from plague-infected ports which gives a large amount of protection without excessive delay or expense.

It is also hoped that observations upon the efficiency of fumigation may be stimulated and the results reported.

NOTE.—All records and tables given in this paper were prepared by Acting Asst. Surg. S. B. Doyle, in charge of the fumigating division, New York Quarantine Station.

INFLUENZA IN THE UNITED STATES.

The accompanying table shows the numbers of cases of influenza reported by telegraph by State health officers for the three weeks ended January 6, 1923, compared with the reports for the corresponding period of the two preceding winters.

A similar table covering the period from October 1 to December 23, 1922, appeared in the Public Health Reports December 29, 1922, pages 3204–3205.

Cases of influenza reported weekly by telegraph by State health officers, December 17, 1922, to January 6, 1923, and corresponding periods of preceding years.

State and year.	Fifty-first week.	Fifty-second week.	First week.
New England States:			
Maine—			
1923			10
1922	6		5
1921		1	18
1920	5	7	7
Massachusetts—			
1923			59
1922	28	83	7
1921	12	9	37
1920	12	19	41
Connecticut—			
1923			22
1922	12	21	5
1921	11	2	13
1920	15	5	1
Middle Atlantic States:			
New York—			
1923			136
1922	20	60	28
1921	23	24	86
1920	20	39	52
New Jersey—			
1923			30
1922	31	26	28
1921	7	17	34
1920	21	23	22
East North Central States:			
Illinois—			
1923			100
1922	25	46	25
1921	24	17	42
1920	21	15	60
Wisconsin—			
1923			92
1922	32	26	46
1921	2	4	64
1920	41	33	6
West North Central States:			
Minnesota—			
1923			
1922		1	1
1921			2
Missouri—			
1923			
1922	44	167	7
1921	4	2	51
South Dakota—			
1923			
1922		1	
1921			2
1920	1		(1)
Nebraska—			
1923			16
1922		47	
1921			3
1920	6		
Kansas—			
1923			19
1922	3	6	9
1921	3		13
1920	7	19	22
South Atlantic States:			
Delaware—			
1923			
1922	(1)	36	(1)
1921	2	1	9
1920	14	10	1
Maryland—			
1923			133
1922	51	82	21
1921	18	14	70
1920	45	47	(1)

State and year.	Fifty-first week.	Fifty-second week.	First week.
South Atlantic States—Continued.			
District of Columbia—			
1923			3
1922	2	6	1
1921	2		2
1920	2	6	(1)
West Virginia—			
1923			656
1922	90	301	
South Carolina—			
1923			2,277
1922		3,077	
Georgia—			
1923			872
1922	1,199	505	21
1921	22	14	30
1920	8	12	10
Florida—			
1923			56
1922	21	36	3
1921	11	7	6
1920	25	8	14
East South Central States:			
Kentucky—			
1923			
1922	81	79	17
1921	30	31	(1)
1920	12	17	41
Alabama—			
1923			503
1922		115	2
1920		13	
Mississippi—			
1923			3,048
1922		686	
West South Central States:			
Arkansas—			
1923			112
1922	40	123	83
1921	26	46	63
1920	100	17	52
Louisiana—			
1923			24
1922			7
1921	4	4	39
1920			32
Texas—			
1923			70
1922	8		48
1921		9	39
1920	6	25	(1)
Mountain States:			
Colorado—			
1923			
1922		1	
1921	2	1	(1)
New Mexico—			
1923			1
1922			
1921			
1920			2
Pacific States:			
Oregon—			
1923			[2] 1
1922	4	[2] 3	
1921		3	(1)
California—			
1923			19
1922	24	13	38
1921	3	10	22
1920	14	19	

[1] No report.

[2] Deaths.

DEATH RATES IN A GROUP OF INSURED PERSONS.

COMPARISON OF DEATH RATES FOR PRINCIPAL CAUSES, SEPTEMBER AND OCTOBER, 1922, AND OCTOBER AND YEAR, 1921.

The accompanying table is taken from the Statistical Bulletin of the Metropolitan Life Insurance Co. for November, 1922, and presents the mortality experience of the company for September and October, 1922, and for October and year, 1921. The rates are based on a strength of approximately 14,000,000 insured persons.

The mortality record for this group continues to show a favorable health situation, the rate for October, 7.86 per 1,000, being only slightly higher than that for September, 7.44. This rise in mortality is to be expected, in view of the seasonal increase in the number of deaths from respiratory diseases and diphtheria.

Death rates (annual basis) for principal causes per 100,000 lives exposed, September and October, 1922, and October and year, 1921.

[Industrial Department, Metropolitan Life Insurance Co.

Cause of death.	Death rate per 100,000 lives exposed.			
	October, 1922.	September, 1922.	October, 1921.	Year 1921.
Total, all causes	786.4	743.6	790.6	870.6
Typhoid fever	9.4	9.4	8.6	6.7
Measles	1.3	.9	.3	3.2
Scarlet fever	3.9	2.6	3.4	7.0
Whooping cough	2.0	2.6	1.4	3.9
Diphtheria	19.4	10.1	28.1	23.8
Influenza	4.9	2.1	3.7	8.7
Tuberculosis (all forms)	101.4	93.0	97.8	117.4
Tuberculosis of respiratory system	91.5	85.6	89.2	105.6
Cancer	70.8	71.4	71.3	71.7
Cerebral hemorrhage	55.7	51.3	54.1	62.1
Organic diseases of heart	104.2	100.6	110.5	117.4
Pneumonia (all forms)	40.4	26.9	40.4	67.8
Other respiratory diseases	11.5	8.1	12.1	14.1
Diarrhea and enteritis	13.5	17.7	15.1	14.2
Bright's disease (chronic nephritis)	67.4	58.8	63.8	68.0
Puerperal state	16.2	14.8	14.5	19.8
Suicides	6.3	8.5	8.6	7.6
Homicides	7.4	8.0	6.8	6.7
Other external causes (excluding suicides and homicides)	54.0	62.6	51.2	57.6
Traumatism by automobile	15.3	16.5	14.2	12.2
All other causes	196.7	194.3	199.0	192.9

REDUCTION IN THE TYPHOID DEATH RATE.

The following figures show the decline in the death rate from typhoid fever among the industrial policyholders of the company in American and Canadian cities during the 12-year period 1911–1922, and evidence the fact that modern sanitary science is conquering typhoid. The death rate from this disease in this group of persons shows practically an uninterrupted decline from 22.8 per 100,000 in 1911 to 6.7 in 1920 and 1921, and to 5.9 (estimated) in 1922.

Year.	Death rate.	Year.	Death rate.
1911	22.8	1917	12.1
1912	19.1	1918	11.5
1913	18.4	1919	7.3
1914	16.1	1920	6.7
1915	12.9	1921	6.7
1916	13.0	1922	[1] 5.9

[1] Based on estimated mortality figures for 1922.

DECLINE IN MALARIA DEATH RATE.

During the 10-year period 1911–1921 the death rate from malaria among the policyholders of the industrial department of the company has declined at an average yearly rate of 15½ per cent, as follows:

Year.	Death rate.	Year.	Death rate.
1911	6.1	1917	2.3
1912	5.4	1918	2.3
1913	4.5	1919	2.0
1914	3.7	1920	1.4
1915	3.5	1921	1.5
1916	2.9		

DEATHS DURING WEEK ENDED DECEMBER 30, 1922.

Summary of information received by telegraph from industrial insurance companies for week ended December 30, 1922, and corresponding week of 1921. (From the Weekly Health Index, January 4, 1923, issued by the Bureau of the Census, Department of Commerce.)

	Week ended Dec. 30, 1922.	Corresponding week, 1921.
Policies in force	51,541,201	47,852,588
Number of death claims	11,409	9,643
Death claims per 1,000 policies in force, annual rate	11.5	10.5

Deaths from all causes in certain large cities of the United States during the week ended December 30, 1922, infant mortality, annual death rate, and comparison with corresponding week of 1921. (From the Weekly Health Index, January 4, 1923, issued by the Bureau of the Census, Department of Commerce.)

City.	Estimated population July 1, 1922.	Week ended Dec. 30, 1922.		Annual death rate per 1,000, corresponding week 1921.	Deaths under 1 year.		Infant mortality rate, week ended Dec. 30, 1922.[2]
		Total deaths.	Death rate.[1]		Week ended Dec. 30, 1922.	Corresponding week 1921.	
Total	27,996,656	7,540	14.0	13.0	974	854	.....
Akron, Ohio	[3] 208,435	44	11.0	8.5	9	2	99
Albany, N. Y.	116,223	35	15.7	17.7	2	1	46
Atlanta, Ga.	220,047	86	20.4	18.3	12	8	.....
Baltimore, Md.	762,222	243	16.6	14.0	38	21	107
Birmingham, Ala.	191,017	60	16.4	16.2	10	7	.....
Boston, Mass.	764,017	251	17.1	14.7	29	27	78
Bridgeport, Conn.	[3] 143,555	30	10.9	13.1	5	5	63
Buffalo, N. Y.	528,163	130	12.8	11.3	26	21	102
Cambridge, Mass.	110,944	41	19.3	15.1	7	3	120

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births—an annual rate based on deaths under 1 year for the week and births for 1921. Cities left blank are not in the registration area for births.
[3] Enumerated population Jan. 1, 1920.

Deaths from all causes in certain large cities of the United States during the week ended December 30, 1922, infant mortality, annual death rate, and comparison with corresponding week of 1921. (From the Weekly Health Index, January 4, 1923, issued by the Bureau of the Census, Department of Commerce)—Continued.

City.	Estimated population July 1, 1922.	Week ended Dec. 30, 1922.		Annual death rate per 1,000, corresponding week 1921.	Deaths under 1 year.		Infant mortality rate, week ended Dec. 30, 1922.
		Total deaths.	Death rate.		Week ended Dec. 30, 1922.	Corresponding week 1921.	
Camden, N. J.	121,915	42	18.0	13.9	9	4	141
Chicago, Ill.	2,833,288	638	11.7	10.8	90	83	.....
Cincinnati, Ohio.	404,865	148	19.1	15.6	13	12	83
Cleveland, Ohio.	854,565	205	12.5	9.7	31	30	81
Columbus, Ohio.	253,455	86	17.7	14.3	13	7	137
Dallas, Tex.	171,974	46	13.9	13.6	14	11	.....
Dayton, Ohio.	161,824	42	13.5	11.5	4	5	65
Denver, Colo.	267,591	67	13.1	14.1	2	7	.....
Detroit, Mich.	[3] 993,678	233	12.2	9.9	39	30	73
Duluth, Minn.	104,183	13	6.5	.....	4	.....	86
Erie, Pa.	109,528	24	11.4	15.2	3	7	59
Fall River, Mass.	120,790	30	13.0	13.8	9	9	126
Flint, Mich.	111,794	28	13.1	.....	3	.....	56
Fort Worth, Tex.	114,717	38	17.3	10.8	7	2	.....
Grand Rapids, Mich.	143,572	40	14.5	11.1	7	5	108
Houston, Tex.	150,087	36	12.5	9.8	8	2	.....
Indianapolis, Ind.	333,257	91	14.2	14.7	11	10	81
Jersey City, N. J.	305,911	84	14.3	10.3	11	12	70
Kansas City, Kans.	113,801	20	9.2	16.1	2	3	44
Los Angeles, Calif.	624,866	186	15.3	16.3	25	23	103
Louisville, Ky.	256,877	72	14.6	13.0	6	4	64
Lowell, Mass.	114,423	32	14.6	11.9	3	2	50
Memphis, Tenn.	167,862	64	19.9	16.1	10	4	.....
Milwaukee, Wis.	476,603	105	11.5	9.0	8	12	39
Minneapolis, Minn.	400,970	95	12.4	11.3	17	16	94
Nashville, Tenn.	120,332	47	20.4	22.2	5	4	.....
New Bedford, Mass.	127,542	41	16.8	10.4	9	4	129
New Haven, Conn.	169,987	25	7.7	14.7	2	5	24
New Orleans, La.	399,616	152	19.8	17.6	18	21	.....
New York, N. Y.	5,839,746	1,453	13.0	12.4	155	175	60
Bronx Borough.	809,536	178	11.5	10.6	15	18	51
Brooklyn Borough.	2,117,164	526	13.0	11.3	67	70	70
Manhattan Borough.	2,271,888	594	13.6	14.5	64	78	59
Queens Borough.	516,757	98	9.9	10.1	5	6	27
Richmond Borough.	124,401	57	23.9	12.5	4	3	73
Newark, N. J.	431,792	114	13.8	11.0	14	13	62
Norfolk, Va.	124,915	32	13.4	11.6	3	4	56
Oakland, Calif.	233,279	62	13.9	17.0	7	3	87
Omaha, Nebr.	200,739	59	15.3	12.2	8	9	87
Paterson, N. J.	138,521	35	13.2	10.2	4	1	62
Philadelphia, Pa.	1,894,500	588	16.2	14.1	77	70	92
Pittsburgh, Pa.	607,902	213	18.3	15.6	30	39	99
Portland, Oreg.	269,240	60	11.6	14.8	5	8	49
Providence, R. I.	241,011	75	16.2	17.0	7	7	56
Richmond, Va.	178,365	48	14.0	14.5	8	6	96
Rochester, N. Y.	311,548	74	12.4	11.8	7	7	53
St. Louis, Mo.	795,008	229	15.0	13.7	22	10	.....
St. Paul, Minn.	239,836	72	15.7	8.8	5	5	46
Salt Lake City, Utah.	123,918	29	12.2	9.9	4	6	61
San Antonio, Tex.	178,056	63	18.4	.....	15	.....	.....
San Francisco, Calif.	529,792	126	12.4	17.8	9	8	51
Seattle, Wash.	[3] 315,312	55	9.1	10.6	11	6	101
Spokane, Wash.	104,445	24	12.0	14.5	2	5	40
Springfield, Mass.	140,052	36	13.4	14.6	7	5	108
Syracuse, N. Y.	181,012	48	13.8	16.4	4	6	48
Tacoma, Wash.	100,369	20	10.4	.....	4	.....	95
Toledo, Ohio.	260,817	68	13.6	12.1	10	6	96
Trenton, N. J.	125,075	51	21.3	13.6	7	1	108
Washington, D. C.	[3] 437,571	143	17.0	18.2	16	14	93
Wilmington, Del.	115,568	36	16.2	12.9	0	1	0
Worcester, Mass.	188,449	55	15.2	16.1	10	7	108
Yonkers, N. Y.	105,422	22	10.9	13.1	2	3	41

[3] Enumerated population Jan. 1, 1920.

PREVALENCE OF DISEASE.

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

UNITED STATES.

CURRENT STATE SUMMARIES.

Reports for Week Ended January 6, 1923.

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

ALABAMA.

	Cases.
Diphtheria	9
Hookworm disease	33
Influenza	503
Malaria	9
Pellagra	4
Pneumonia	46
Scarlet fever	15
Tuberculosis	9
Typhoid fever	3

ARKANSAS.

Chicken pox	13
Diphtheria	12
Hookworm disease	1
Influenza	112
Malaria	21
Measles	5
Ophthalmia neonatorum	1
Pellagra	5
Scarlet fever	3
Smallpox	1
Trachoma	1
Tuberculosis	13
Typhoid fever	3
Whooping cough	3

CALIFORNIA.

Cerebrospinal meningitis:	
Los Angeles	1
San Francisco	2
Diphtheria	130
Influenza	19
Measles	57
Scarlet fever	118
Smallpox	20
Typhoid fever	6

COLORADO.

(Exclusive of Denver.)	Cases.
Cerebrospinal meningitis	1
Chicken pox	23
Diphtheria	31
Measles	4
Mumps	1
Pneumonia	24
Scarlet fever	64
Smallpox	22
Tuberculosis	22
Typhoid fever	11
Whooping cough	6

CONNECTICUT.

Cerebrospinal meningitis	2
Chicken pox	73
Conjunctivitis	4
Diphtheria	63
Favus	1
German measles	2
Influenza	22
Measles	367
Mumps	15
Pneumonia (lobar)	39
Scarlet fever	85
Smallpox	1
Tuberculosis (all forms)	28
Whooping cough	73

FLORIDA.

Dengue	3
Diphtheria	5
Influenza	56
Malaria	2
Pneumonia	5
Scarlet fever	1
Smallpox	4
Typhoid fever	6

GEORGIA.

	Cases.
Chicken pox	8
Diphtheria	20
Dysentery (bacillary)	1
Hookworm disease	4
Influenza	872
Malaria	9
Measles	36
Paratyphoid fever	1
Pneumonia	29
Scarlet fever	15
Septic sore throat	2
Smallpox	2
Tuberculosis (pulmonary)	6
Typhoid fever	4

ILLINOIS.

Cerebrospinal meningitis—Chicago	1
Diphtheria:	
Champaign County	10
Cook County (including Chicago)	225
Chicago	211
Kane County	8
La Salle County	8
Lake County	15
Madison County	8
St. Clair County	8
Scattering	100
Influenza	76
Pneumonia	576
Scarlet fever:	
Cook County (including Chicago)	116
Chicago	92
Madison County	12
Stephenson County	9
Winnebago County	9
Scattering	160
Smallpox:	
Lee County	13
Will County	28
Scattering	17
Typhoid fever	18
Whooping cough	194

INDIANA.

Cerebrospinal meningitis—Allen County	1
Diphtheria	155
Scarlet fever	116
Smallpox	114
Typhoid fever	5

IOWA.

Diphtheria	61
Scarlet fever	77
Smallpox	5
Typhoid fever	1

KANSAS.

Chicken pox	83
Diphtheria	87
German measles	1
Influenza	19
Lethargic encephalitis	2

KANSAS—continued.

	Cases.
Measles	28
Mumps	12
Pneumonia	74
Scarlet fever	134
Smallpox	1
Tuberculosis	45
Whooping cough	20

LOUISIANA.

Cerebrospinal meningitis	1
Dengue	12
Diphtheria	26
Influenza	24
Scarlet fever	3
Smallpox	17
Typhoid fever	10

MAINE.

Chicken pox	9
Diphtheria	2
German measles	1
Influenza	10
Measles	3
Pneumonia	5
Scarlet fever	10
Tuberculosis	3
Whooping cough	10

MARYLAND.[1]

Cerebrospinal meningitis	1
Chicken pox	152
Diphtheria	100
German measles	3
Influenza	133
Lethargic encephalitis	1
Malaria	1
Measles	107
Mumps	30
Pneumonia (all forms)	193
Scabies	2
Scarlet fever	76
Tuberculosis	45
Typhoid fever	4
Whooping cough	104

MASSACHUSETTS.

Cerebrospinal meningitis	3
Chicken pox	195
Conjunctivitis (suppurative)	3
Diphtheria	209
German measles	4
Influenza	59
Lethargic encephalitis	1
Measles	657
Mumps	148
Ophthalmia neonatorum	14
Pneumonia (lobar)	195
Scarlet fever	253
Septic sore throat	3
Tuberculosis (all forms)	83
Typhoid fever	9
Whooping cough	277

[1] Week ended Friday.

MICHIGAN.

	Cases.
Diphtheria	201
Measles	197
Pneumonia	219
Scarlet fever	354
Smallpox	53
Tuberculosis	24
Typhoid fever	9
Whooping cough	114

MINNESOTA.

Chicken pox	9
Diphtheria	95
Measles	58
Pneumonia	5
Scarlet fever	168
Smallpox	61
Tuberculosis	71
Typhoid fever	1
Whooping cough	4

MISSISSIPPI.

Dengue	11
Diphtheria	22
Influenza	3,048
Scarlet fever	6
Smallpox	9
Typhoid fever	3

MONTANA.

Diphtheria	3
Scarlet fever	23
Smallpox	18
Typhoid fever	1

NEBRASKA.

Chicken pox	34
Diphtheria:	
Omaha	11
Wymore	11
Scattering	18
Influenza	16
Measles	1
Mumps	6
Scarlet fever:	
Dundy County	12
Scattering	50
Septic sore throat	12
Smallpox	6
Tuberculosis	1
Typhoid fever	1
Whooping cough	1

NEW JERSEY.

Cerebrospinal meningitis	3
Chicken pox	211
Diphtheria	197
Influenza	30
Malaria	1
Measles	1,099
Pneumonia	224
Poliomyelitis	2
Scarlet fever	218
Typhoid fever	22
Whooping cough	127

NEW MEXICO.

	Cases.
Chicken pox	17
Conjunctivitis	1
Diphtheria	27
Influenza	1
Pneumonia	7
Scarlet fever	14
Trachoma	1
Tuberculosis	16
Typhoid fever	6
Whooping cough	2

NEW YORK.

(Exclusive of New York City.)

Cerebrospinal meningitis	1
Diphtheria	209
Influenza	136
Measles	646
Pneumonia	427
Poliomyelitis	2
Scarlet fever	344
Smallpox	9
Typhoid fever	24
Whooping cough	357

NORTH CAROLINA.

Chicken pox	65
Diphtheria	64
German measles	1
Measles	109
Scarlet fever	55
Septic sore throat	3
Smallpox	33
Typhoid fever	5
Whooping cough	170

OREGON.

Chicken pox	18
Diphtheria:	
Portland	12
Scattering	6
Influenza	[1] 1
Lethargic encephalitis	3
Measles	5
Pneumonia	[1] 6
Scarlet fever	7
Septic sore throat	1
Smallpox	17
Tuberculosis	[1] 7
Whooping cough	1

SOUTH DAKOTA.

Chicken pox	9
Diphtheria	19
Measles	5
Pneumonia	19
Scarlet fever	34
Smallpox	6
Tuberculosis	3
Typhoid fever	4
Whooping cough	3

[1] Deaths.

TEXAS.

	Cases.
Chicken pox	44
Dengue	222
Diphtheria	16
Dysentery	5
Influenza	70
Lethargic encephalitis	2
Measles	36
Mumps	1
Pneumonia	34
Scarlet fever	26
Smallpox	25
Tuberculosis	9
Typhoid fever	17
Whooping cough	10

VERMONT.

Chicken pox	43
Diphtheria	6
Influenza	1
Measles	12
Mumps	5
Pneumonia	1
Scarlet fever	12
Typhoid fever	3
Whooping cough	76

WASHINGTON.

Chicken pox	61
Diphtheria	18
Impetigo contagiosa	1
Lethargic encephalitis—Whitman County	1
Measles	5
Mumps	11
Pneumonia	1
Poliomyelitis—Pierce County	1
Scarlet fever	44
Smallpox	22
Tuberculosis	21
Typhoid fever	9
Vincent's angina	1
Whooping cough	22

WEST VIRGINIA.

	Cases.
Diphtheria	26
Influenza:	
Beckley	100
Fairmont	36
Pennsboro	2
Princeton	500
Williamson	18
Scarlet fever	17
Typhoid fever	1

WISCONSIN.

Milwaukee:	
Chicken pox	34
Diphtheria	32
German measles	1
Influenza	5
Measles	609
Pneumonia	14
Scarlet fever	66
Tuberculosis	15
Whooping cough	16
Scattering:	
Cerebrospinal meningitis	3
Chicken pox	152
Diphtheria	58
German measles	2
Influenza	87
Measles	234
Pneumonia	23
Poliomyelitis	1
Scarlet fever	128
Smallpox	34
Tuberculosis	11
Typhoid fever	6
Whooping cough	69

WYOMING.

Chicken pox	3
Pneumonia	5
Scarlet fever	3
Smallpox	1

Reports for Week Ended December 30, 1922.

KENTUCKY.

	Cases.
Chicken pox	2
Diphtheria	13
Influenza	79
Lethargic encephalitis:	
Jackson County	1
Measles:	
Henderson County	32
Livingston County	20
McCracken County	70
Scattering	9
Pneumonia	11
Scarlet fever	3
Septic sore throat	1
Smallpox	1
Tonsillitis	1

KENTUCKY—continued.

	Cases.
Trachoma	6
Tuberculosis	7
Typhoid fever	2
Whooping cough	5

NORTH DAKOTA.

Chicken pox	38
Diphtheria	22
Measles	10
Pneumonia	9
Scarlet fever	37
Smallpox	10
Tuberculosis	4
Whooping cough	3

SUMMARY OF CASES REPORTED MONTHLY BY STATES.

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

State.	Cerebrospinal meningitis.	Diphtheria.	Influenza.	Malaria.	Measles.	Pellagra.	Poliomyelitis.	Scarlet fever.	Smallpox.	Typhoid fever.
November, 1922.										
Colorado	2	133	4	.....	10	.....	.....	166	147	53
Montana	6	54	4	.....	7	.....	.....	93	18	12
New Mexico	.....	123	18	.....	3	.....	.....	32	.....	43
Ohio	6	2,213	23	.....	1,060	.....	7	1,878	137	163

RECIPROCAL NOTIFICATION.

NOVEMBER, 1922.

Cases of communicable diseases referred during November, 1922, to other State health departments by departments of health of the States of Connecticut, Illinois, Massachusetts, Minnesota, and New York.

State.	Diphtheria.	Scarlet fever.	Tuberculosis.	Typhoid fever.
Connecticut	3	.....	5	.....
Illinois	.....	.....	19	.....
Massachusetts	.....	.....	.....	2
Minnesota	1	.....	31	6
New York	2	1	.....	.....

CITY REPORTS FOR WEEK ENDED DECEMBER 23, 1922.

ANTHRAX.

City.	Cases.	Deaths.
Pennsylvania:		
Philadelphia	1	1

CEREBROSPINAL MENINGITIS.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Dec. 23, 1922.		City.	Median for previous years.	Week ended Dec. 23, 1922.	
		Cases.	Deaths.			Cases.	Deaths.
California:				Rhode Island:			
Riverside	0	1	1	Providence	0	.....	1
Indiana:				Texas:			
Indianapolis	0	.....	1	Dallas	0	1	.....
South Bend	0	.....	1	Galveston	0	1	.....
Massachusetts:				Washington:			
Lynn	0	.....	1	Seattle	0	3	.....
New Jersey:				West Virginia:			
Newark	1	.....	1	Bluefield	0	.....	1
New York:				Wisconsin:			
New York	4	3	1	Superior	0	.....	2

CITY REPORTS FOR WEEK ENDED DECEMBER 23, 1922—Continued.

DENGUE.

City.	Cases.	Deaths.
Alabama:		
Mobile		1
Louisiana:		
Baton Rouge	2	

DIPHTHERIA.

See p. 78; also Current State summaries, p. 68, and Monthly summaries by States, p. 72.

INFLUENZA.

City.	Cases.		Deaths, week ended Dec. 23, 1922.
	Week ended Dec. 24, 1921.	Week ended Dec. 23, 1922.	
Alabama:			
Birmingham	2	3	3
Montgomery		1	
Arkansas:			
Little Rock	1	1	
California:			
Berkeley		3	
Los Angeles	3	4	1
Oakland		2	1
Sacramento		3	1
San Francisco	3	4	1
Colorado:			
Denver			1
Connecticut:			
Bridgeport		3	
New Britain	8		
Waterbury	1		
District of Columbia:			
Washington	2	2	1
Florida:			
Tampa	3	1	
Georgia:			
Albany	1		
Atlanta	5	85	
Brunswick		48	
Macon		35	
Rome		16	
Savannah		23	6
Valdosta			1
Illinois:			
Chicago	18	16	5
Jacksonville		1	
Kentucky:			
Covington	1		
Louisville		2	
Louisiana:			
New Orleans	1		
Maryland:			
Baltimore	8	27	
Massachusetts:			
Beverly		1	
Boston	1	8	
Cambridge	1	1	
Danvers		4	
Everett		4	
Fall River		1	
Haverhill		1	
Lawrence	4	2	1
Leominster		2	
Lowell		1	
Malden		1	
Quincy		1	1
Massachusetts—Contd.			
Saugus	3		
Watertown	1		
Winthrop	1		
Woburn			1
Worcester	12		
Michigan:			
Ann Arbor	1		
Detroit		3	1
Missouri:			
St. Joseph		1	1
Montana:			
Missoula		1	1
Nebraska:			
Lincoln			1
New Jersey:			
Kearny		2	
Newark	4	16	2
Passaic		1	
New York:			
Albany	8		
Buffalo	2		
Cohoes		1	
New York	34	54	4
Saratoga Springs	1		
North Carolina:			
Rocky Mount			1
Winston-Salem			1
Ohio:			
Akron	2	1	
Cincinnati		1	5
Cleveland		1	
Springfield			1
Toledo			2
Pennsylvania:			
Philadelphia	4	5	8
Rhode Island:			
Providence			1
South Carolina:			
Charleston		29	
Utah:			
Salt Lake City			1
Virginia:			
Petersburg	3		
Richmond			2
Roanoke	3	10	1
West Virginia:			
Fairmont	1	1	
Wisconsin:			
Green Bay	1		
Marinette			1

CITY REPORTS FOR WEEK ENDED DECEMBER 23, 1922—Continued.

LETHARGIC ENCEPHALITIS.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Nebraska:			Oregon:		
Omaha	1	1	Portland	2	.....

MALARIA.

Alabama:			Massachusetts:		
Birmingham	1	.....	Malden	1	.....
Louisiana:			Tennessee:		
New Orleans	1	.....	Memphis	3	1

MEASLES.

See p. 78; also Current State summaries, p. 68, and Monthly summaries by States, p. 72.

PELLAGRA.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Alabama:			Texas:		
Birmingham	1	.....	Dallas	.....	1
Illinois:			Fort Worth	.....	1
Chicago	.....	1	Houston	.....	1
Louisiana:					
New Orleans	1	.....			

PNEUMONIA (ALL FORMS).

Alabama:			Illinois—Continued.		
Birmingham	.....	10	Evanston	3	.....
Mobile	.....	5	Forest Park	1	.....
Montgomery	3	.....	Freeport	.....	2
California:			Galesburg	3	2
Alameda	.....	1	Jacksonville	1	.....
Berkeley	.....	2	Kewanee	.....	1
Long Beach	1	.....	La Salle	1	.....
Los Angeles	36	17	Mattoon	.....	1
Oakland	7	2	Oak Park	4	2
Sacramento	5	2	Peoria	.....	6
San Bernardino	.....	1	Springfield	.....	3
San Diego	.....	1	Indiana:		
San Francisco	.....	6	Anderson	.....	1
Colorado:			Crawfordsville	.....	1
Denver	.....	17	East Chicago	.....	2
Pueblo	.....	4	Fort Wayne	.....	2
Connecticut:			Gary	.....	1
Bridgeport	.....	2	Huntington	.....	1
Bristol	2	.....	Indianapolis	.....	13
Derby	.....	2	Kokomo	.....	1
Hartford	3	2	La Fayette	.....	2
Milford	.....	1	Logansport	.....	1
New Haven	3	1	Michigan City	.....	1
New London	.....	2	Muncie	.....	3
District of Columbia:			South Bend	.....	6
Washington	.....	17	Terre Haute	.....	4
Florida:			Iowa:		
St. Petersburg	.....	1	Burlington	2	1
Tampa	.....	3	Council Bluffs	.....	4
Georgia:			Muscatine	1	.....
Atlanta	.....	10	Kansas:		
Rome	1	.....	Fort Scott	1	.....
Savannah	.....	7	Kansas City	9	.....
Valdosta	.....	2	Lawrence	.....	1
Illinois:			Salina	1	.....
Aurora	4	2	Topeka	4	1
Blue Island	1	.....	Wichita	.....	7
Chicago	232	88	Kentucky:		
Cicero	.....	1	Louisville	.....	11
Decatur	2	.....	Louisiana:		
East St. Louis	.....	4	Baton Rouge	2	1
Elgin	.....	2	New Orleans	.....	12

CITY REPORTS FOR WEEK ENDED DECEMBER 23, 1922—Continued.

PNEUMONIA (ALL FORMS)—Continued.

City.	Cases.	Deaths.
Maine:		
Auburn		1
Biddeford		4
Lewiston		2
Portland		4
Sanford	3	
Maryland:		
Baltimore	63	32
Cumberland	3	1
Massachusetts:		
Arlington	2	
Attleboro		1
Beverly	2	1
Boston	34	32
Cambridge		12
Chelsea	4	1
Chicopee		3
Clinton		2
Easthampton		1
Fall River	8	5
Greenfield		1
Haverhill	5	
Holyoke	3	1
Lawrence	3	2
Leominster	2	1
Lowell	3	1
Lynn		1
Malden		4
Medford	1	
Methuen		1
New Bedford		4
Newburyport		1
Newton		4
North Adams		2
Northbridge		1
Peabody		2
Quincy		2
Revere		1
Salem	3	1
Somerville	6	3
Springfield	5	3
Wakefield		2
Waltham		1
Watertown		2
Webster	1	
West Springfield		1
Winthrop	1	
Woburn		1
Worcester		11
Michigan:		
Ann Arbor	2	
Benton Harbor		1
Detroit	88	33
Flint	6	2
Grand Rapids	12	
Hamtramck		4
Highland Park	6	2
Holland	1	
Jackson	4	1
Kalamazoo		2
Marquette	3	1
Pontiac	2	1
Port Huron		2
Minnesota:		
Duluth		6
Hibbing		1
Minneapolis		10
Rochester	3	2
St. Paul		9
Missouri:		
Kansas City	23	17
St. Joseph		5
Montana:		
Anaconda		1
Billings		1
Great Falls		1
Missoula		2
Nebraska:		
Lincoln	1	
Omaha		15
New Hampshire:		
Keene		1
New Jersey:		
Atlantic City		2
Bayonne	1	
Belleville	1	
Bloomfield	3	1
East Orange	1	
Garfield	1	
Hackensack		1
Hoboken		3
Kearny		1
Montclair		2
Morristown		2
Newark	79	21
Orange	6	
Passaic		4
Paterson	7	
Phillipsburg		1
Plainfield	2	
Summit	3	1
Trenton	28	4
West Hoboken		2
West New York		1
West Orange		1
New Mexico:		
Albuquerque		2
New York:		
Albany	10	
Auburn	3	1
Buffalo	23	9
Cohoes	2	1
Cortland		1
Glens Falls	1	
Hornell	2	
Hudson	2	
Ithaca	2	
Jamestown	4	1
Middletown	2	1
New York	358	183
Newburgh		2
Niagara Falls		2
North Tonawanda	1	
Olean		1
Port Chester	1	
Rochester	20	10
Rome	3	1
Saratoga Springs	1	
Schenectady	4	1
Syracuse	13	2
Troy	4	3
Watertown	5	
White Plains	3	1
North Carolina:		
Greensboro		1
Rocky Mount		1
Wilmington		4
Winston-Salem		7
Ohio:		
Akron	1	
Canton		6
Cincinnati		10
Cleveland	48	26
Columbus		9
Dayton	1	
East Cleveland	4	2
Findlay	1	
Hamilton		2
Kenmore	1	
Lima		2
Mansfield	2	1
Newark		2
Niles		1
Piqua		1
Steubenville	1	
Toledo		8
Youngstown		3
Zanesville		2
Oklahoma:		
Oklahoma		5

CITY REPORTS FOR WEEK ENDED DECEMBER 23, 1922—Continued.

PNEUMONIA (ALL FORMS)—Continued.

City.	Cases.	Deaths.
Oregon:		
Portland		10
Pennsylvania:		
Philadelphia	114	104
Rhode Island:		
Cranston		1
Pawtucket		4
Providence		10
South Carolina:		
Charleston		11
Greenville		1
South Dakota:		
Sioux Falls	2	
Tennessee:		
Memphis		9
Nashville		3
Texas:		
Amarillo	2	
Beaumont		2
Dallas		4
El Paso		3
Fort Worth		2
Galveston		3
Houston		4
San Antonio		3
Utah:		
Salt Lake City		6
Virginia:		
Charlottesville		1
Lynchburg		1
Norfolk		7
Petersburg		1
Richmond		7
Roanoke		3
West Virginia:		
Bluefield		1
Clarksburg		1
Huntington		2
Morgantown	1	
Parkersburg		2
Wheeling		6
Wisconsin:		
Beloit		2
Fond du Lac	1	
Kenosha	2	1
Marinette		1
Oshkosh		1
Racine		3
Superior		1
Wyoming:		
Cheyenne		1

POLIOMYELITIS (INFANTILE PARALYSIS).

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Dec. 23, 1922.		City.	Median for previous years.	Week ended Dec. 23, 1922.	
		Cases.	Deaths.			Cases.	Deaths.
Connecticut:				New York:			
New Haven	0	1		New York	0	5	
District of Columbia:				Rhode Island:			
Washington	0	1		Providence	0		1
Illinois:				Virginia:			
Chicago	1		1	Richmond	0	1	

RABIES IN ANIMALS.

City.	Cases.	City.	Cases.
California:		Texas:	
Los Angeles	8	Beaumont	1
Tennessee:		Virginia:	
Memphis	2	Alexandria	1

SCARLET FEVER.

See p. 78; also Current State summaries, p. 68, and Monthly summaries by States, p. 72.

CITY REPORTS FOR WEEK ENDED DECEMBER 23, 1922—Continued.

SMALLPOX.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Dec. 23, 1922.	
		Cases.	Deaths.
California:			
Eureka	0	1	.....
Los Angeles	2	1	.....
Oakland	0	2	.....
Santa Ana	0	1	.....
Colorado:			
Denver	9	8	3
Georgia:			
Valdosta	0	1	.....
Illinois:			
Chicago	1	2	.....
Freeport	0	8	.....
Indiana:			
Anderson	0	2	.....
Elwood	0	1	.....
Hammond	0	1	.....
Indianapolis	3	1	.....
Iowa:			
Clinton	0	1	.....
Davenport	2	1	.....
Des Moines	1	1	.....
Michigan:			
Ann Arbor	0	1	.....
Detroit	3	8	.....
Flint	0	1	.....
Grand Rapids	0	3	.....
Highland Park	0	2	.....
Minnesota:			
Duluth	0	17	.....
Minneapolis	13	6	.....
St. Paul	7	13	.....
Missouri:			
St. Louis	2	1	.....
Montana:			
Great Falls	1	16	.....
Nebraska:			
Omaha	5	1	.....
Ohio:			
Dayton	0	3	.....
Hamilton	2	1	.....
Toledo	1	3	.....
Oklahoma:			
Tulsa	1	3	.....
Oregon:			
Portland	3	7	.....
Pennsylvania:			
Philadelphia	0	1	.....
Tennessee:			
Nashville	0	1	.....
Texas:			
Fort Worth	0	1	.....
Waco	0	1	.....
Utah:			
Salt Lake City	3	4	1
Washington:			
Bellingham	2	1	.....
Seattle	3	3	.....
Wisconsin:			
Eau Claire	0	1	.....
Superior	0	23	.....

TETANUS.

City.	Cases.	Deaths.
Alabama:		
Mobile	.....	1
Illinois:		
Chicago	1	1
Maine:		
Lewiston	1	1
Missouri:		
St. Louis	1	.....
New York:		
New York	1	.....
Ohio:		
Columbus	.....	1
Oklahoma:		
Oklahoma	.....	1
Texas:		
Houston	.....	1

TUBERCULOSIS.

See p. 78; also Current State summaries, p. 68.

CITY REPORTS FOR WEEK ENDED DECEMBER 23, 1922—Continued.

TYPHOID FEVER.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Dec. 23, 1922.	
		Cases.	Deaths.
Alabama:			
Birmingham	1	.....	1
Mobile	0	.....	1
California:			
Los Angeles	1	3	2
San Francisco	1	3	2
Stockton	0	1	.....
District of Columbia:			
Washington	2	1	.....
Florida:			
St. Petersburg	.....	1	.....
Georgia:			
Atlanta	0	2	.....
Illinois:			
Bloomington	0	1	.....
Chicago	6	2	.....
Indiana:			
Kokomo	0	.....	1
Kansas:			
Kansas City	0	1	.....
Kentucky:			
Louisville	0	1	.....
Louisiana:			
New Orleans	2	3	.....
Maryland:			
Baltimore	5	2	1
Massachusetts:			
Chelsea	0	1	.....
Malden	0	1	.....
Southbridge	0	1	1
Michigan:			
Battle Creek	0	1	.....
Detroit	2	5	2
Minnesota:			
Duluth	1	1	.....
Minneapolis	1	1	.....
Missouri:			
St. Louis	3	.....	2
Montana:			
Great Falls	0	2	.....
New Jersey:			
Bayonne	0	1	.....
Newark	1	3	.....
Orange	0	1	.....
New York:			
Ithaca	0	2	.....
New York	10	9	3
Rochester	0	2	.....
Troy	1	1	1
North Carolina:			
Wilmington	0	1	.....
Ohio:			
Akron	0	2	.....
Ashtabula	0	3	.....
Chillicothe	0	1	.....
Cincinnati	0	1	.....
Piqua	0	1	.....
Pennsylvania:			
Philadelphia	4	.....	1
Tennessee:			
Nashville	0	1	.....
Texas:			
Dallas	0	1	.....
Galveston	0	1	.....
San Antonio	0	2	2
Virginia:			
Richmond	0	2	.....
Washington:			
Seattle	0	1	.....
Wisconsin:			
Manitowoc	0	1	.....
West Allis	0	3	.....

TYPHUS FEVER.

City.	Cases.	Deaths.
New York:		
New York	1	.....

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Alabama:										
Birmingham	178,806	50	2	.....	.....	.....	3	.....	6	6
Mobile	60,777	21	1	.....	.....	.....	2	.....	.....	2
Montgomery	43,464	19	.....	.....	.....	.....	.....	.....	.....	.....
Arkansas:										
Hot Springs	11,695	3	.....	.....	.....	.....	.....	.....	.....	.....
Little Rock	65,142	.....	2	.....	1	.....	2	.....	8	.....
North Little Rock	14,048	.....	1	1	1	.....	.....	.....	.....	1

CITY REPORTS FOR WEEK ENDED DECEMBER 23, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
California:										
Alameda	28,806	11	2						3	
Berkeley	56,036	5	1				5		1	
Eureka	12,923	6					1		2	
Long Beach	55,593	21	3		1		2			1
Los Angeles	576,673	188	56	1	9		26	1	44	17
Oakland	216,261	46	7	1			6		4	3
Pasadena	45,354	20	1		3		9			4
Richmond	16,843	1	1							
Riverside	19,341	4	1						1	
Sacramento	65,908	21	4						1	3
San Bernardino	18,721	10	3							2
San Diego	74,683	20	11				7		4	2
San Francisco	506,676	141	24		2		9	1	12	9
San Jose	39,642	7	6							
Santa Ana	15,485	5	3		1			1		
Santa Barbara	19,441	3								
Santa Cruz	10,917	4							1	1
Stockton	40,296	12	5				1		1	2
Vallejo	21,107	3					2			
Colorado:										
Denver	256,491	82	41	3	2		18			11
Greeley	10,958	5								
Pueblo	43,050	8	7				3			
Connecticut:										
Bridgeport	143,555	36	13		7	1	6		7	4
Bristol	20,620	4	2		21					
Derby	11,238	4			8		11			
Fairfield (town)	11,475	2	1		2		2			
Greenwich (town)	22,123		1		1		7			
Hartford	138,036	28	22		4		3		4	
Manchester (town)	18,370	2					2			
Milford (town)	10,193	3								
New Haven	162,537	29	5		66		2		8	
New London	25,688	9	1	1						
Norwich (city)	22,304		4	2					2	
District of Columbia:										
Washington	437,571	120	25		13		19		17	11
Florida:										
St. Petersburg	14,237	10	1							
Tampa	51,608	21	1							2
Georgia:										
Atlanta	200,616	59	10		1		2		2	5
Macon	52,995		1		12		1		1	
Rome	13,252		1				4			
Savannah	83,252	56	1				1		2	4
Valdosta	10,783	6								
Idaho:										
Boise	21,393	10	3							
Pocatello	15,001	3								1
Illinois:										
Alton	24,682	5	2				3	1		2
Aurora	36,397	11	5		1		1		1	2
Bloomington	28,725	4	1				3		1	
Blue Island	11,424	3	1							
Chicago	2,701,705	765	183	19	125	5	89	5	133	39
Chicago Heights	19,653	6								1
Cicero	44,995	10							2	
Decatur	43,818	13	2				2		1	1
East St. Louis	66,767	20	4	1			2		1	2
Elgin	27,454	11			2		4		1	
Evanston	37,234	7	2		1		1		2	
Freeport	19,669	8			1		7			
Galesburg	23,834	7	2		2					
Jacksonville	15,713	10	2				5			
Kewanee	16,026	7	1				2			
La Salle	13,050	1			3					
Mattoon	13,552	2	1				2		1	
Oak Park	39,858	16	2		2		3		1	
Pekin	12,086	3	1							
Peoria	76,121	28	3				8			2
Quincy	35,978	12								
Springfield	59,183	20	9		15		1		2	1

CITY REPORTS FOR WEEK ENDED DECEMBER 23, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Indiana:										
Anderson	29,767		3	1			4			1
Crawfordsville	10,139	3					1			
East Chicago	35,967	9	2	1			3			1
Elwood	10,790	3	1				1			
Fort Wayne	86,549		5	1			5			1
Frankfort	11,585	1	4							
Gary	55,378	17	1				3			2
Hammond	36,004	6	1		3					
Huntington	14,000	4								
Indianapolis	314,194	93	29	2	3		9	1	21	5
Kokomo	30,067	6	9							
La Fayette	22,486	10	3				2			
Logansport	21,626	3								
Michigan City	19,457	6					7			1
Mishawaka	15,195	4	4	1	39		5			
Muncie	36,524	15	2	1	1		1			3
Peru	12,410	3								
South Bend	70,983	14			89		3			
Terre Haute	66,083	22	3				2			
Iowa:										
Burlington	24,057	9	4				3			
Cedar Rapids	45,566						4			
Clinton	24,151		6							
Council Bluffs	36,162	16	1	1	1		1			
Davenport	56,727		15				1			
Des Moines	126,468		15	1	1		21	1		
Dubuque	39,141				17		1			
Marshalltown	15,731						2			
Mason City	20,065	6	3	1			1			
Muscatine	16,068	6					1			
Ottumwa	23,003		3				1			
Sioux City	71,227		5		3		4		1	
Kansas:										
Atchison	12,630	1	1							
Coffeyville	13,452	2	1							
Fort Scott	10,693	8	9					1		1
Hutchinson	23,298		2		1		2		1	
Kansas City	101,177		4		1		2		2	
Lawrence	12,456	3	1				4		1	
Leavenworth	16,912								1	
Parsons	16,028	4	3		1					
Salina	15,085		2							
Topeka	50,022	8	19				3			
Wichita	72,217	33	15	1	1		3			3
Kentucky:										
Covington	57,121	19	4	1			2			
Henderson	12,169	4			32		1			
Louisville	234,891	78	12	1			4		9	3
Owensboro	17,424		2				1			
Paducah	24,735		2		74					
Louisiana:										
Baton Rouge	21,782	7								
New Orleans	387,219	131	32	3	2		3		18	15
Maine:										
Auburn	16,985	4	1				4		1	
Bath	14,731	6								
Biddeford	18,008	12								1
Lewiston	31,791	17					1		2	1
Portland	69,272	17	4		10					
Sanford (town)	10,691	6	1	1						1
Waterville	13,351		2							
Maryland:										
Baltimore	733,826	224	54	5	25		21		12	18
Cumberland	29,837	13	1		7		1		2	1
Frederick	11,066	3	2						2	
Massachusetts:										
Adams (town)	12,967	1					2			
Amesbury (town)	10,036	0								
Arlington (town)	18,665	4							1	1
Attleboro	19,731	7			44					1
Belmont (town)	10,749	2			1					
Beverly	22,561	5					3			
Boston	748,060	266	67	8	81	3	39	1	25	16
Braintree (town)	10,580	4			2					2

CITY REPORTS FOR WEEK ENDED DECEMBER 23, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Massachusetts—Continued.										
Brookline	37,748	8	2	.....	2	.....	.....	.....	1	1
Cambridge	109,694	40	4	.....	11	.....	3	.....	2	3
Chelsea	43,184	11	3	.....	34	.....	5	.....	.....	.....
Chicopee	36,214	9	.....	.....	.....	.....	.....	1	.....	.....
Clinton	12,979	4	.....	.....	1	.....	.....	.....	.....	.....
Danvers	11,108	.....	1	1	.....	.....	.....	.....	.....	.....
Dedham	10,792	3	.....	.....	.....	.....	.....	.....	.....	.....
Easthampton	11,261	2	.....	.....	.....	.....	.....	.....	.....	1
Everett	40,120	12	3	.....	4	.....	2	.....	1	.....
Fall River	120,485	33	8	1	110	1	4	.....	6	3
Framingham	17,033	2	.....	.....	.....	.....	.....	.....	.....	.....
Gardner	16,971	7	.....	.....	.....	.....	3	.....	.....	.....
Greenfield	15,462	3	4	.....	.....	.....	2	.....	2	.....
Haverhill	53,884	6	2	.....	1	.....	2	.....	4	1
Holyoke	60,203	19	2	.....	.....	.....	2	.....	1	1
Lawrence	94,270	25	3	.....	4	.....	.....	.....	4	3
Leominster	19,744	6	.....	.....	.....	.....	1	.....	2	.....
Lowell	112,759	25	4	1	11	.....	7	.....	3	.....
Lynn	99,148	26	6	.....	75	.....	5	.....	.....	.....
Malden	49,103	18	.....	2	1	.....	5	.....	1	.....
Medford	39,038	7	1	.....	14	.....	1	.....	.....	.....
Melrose	18,204	6	.....	.....	.....	.....	5	.....	.....	.....
Methuen	15,189	3	.....	.....	.....	.....	.....	.....	.....	.....
New Bedford	121,217	28	5	1	224	.....	3	.....	6	1
Newburyport	15,618	5	1	.....	.....	.....	5	.....	.....	.....
Newton	46,054	16	1	.....	1	.....	9	.....	.....	1
North Adams	22,282	7	1	.....	.....	.....	1	.....	.....	1
Northampton	21,951	5	.....	.....	1	.....	3	.....	2	.....
Northbridge	10,174	4	.....	.....	.....	.....	.....	.....	.....	.....
Peabody	19,552	6	1	.....	.....	.....	.....	.....	2	.....
Pittsfield	41,763	11	8	.....	1	.....	6	.....	1	.....
Plymouth	13,045	4	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	47,876	5	5	.....	3	.....	3	.....	4	1
Revere	28,823	5	.....	.....	.....	1	.....	.....	.....	.....
Salem	42,529	15	2	1	.....	.....	.....	.....	.....	.....
Somerville	93,091	22	3	.....	5	.....	4	.....	1	1
Southbridge	14,245	2	.....	.....	1	.....	2	.....	.....	.....
Springfield	129,614	50	11	1	.....	.....	4	.....	7	3
Taunton	37,137	16	1	.....	.....	.....	5	.....	2	1
Wakefield	13,025	6	1	.....	.....	.....	1	.....	.....	.....
Waltham	30,915	14	4	.....	.....	.....	6	.....	1	.....
Watertown	21,457	6	3	.....	.....	.....	2	.....	1	.....
Webster	13,258	2	.....	.....	.....	.....	.....	.....	.....	.....
West Springfield	13,443	2	.....	1	.....	.....	.....	.....	.....	.....
Westfield	18,604	6	1	.....	.....	.....	.....	.....	.....	.....
Winthrop	15,455	2	.....	.....	2	.....	.....	.....	.....	.....
Woburn	16,574	6	.....	.....	.....	.....	.....	.....	.....	.....
Worcester	179,754	55	5	.....	.....	.....	14	.....	3	2
Michigan:										
Alpena	11,101	.....	6	1	.....	.....	2	.....	.....	.....
Ann Arbor	19,516	9	7	2	.....	.....	.....	.....	.....	.....
Battle Creek	36,164	.....	4	.....	1	.....	10	.....	.....	.....
Benton Harbor	12,233	3	1	.....	28	.....	1	.....	.....	.....
Detroit	993,678	237	70	4	5	.....	91	2	60	17
Flint	91,599	26	20	1	9	.....	32	.....	5	2
Grand Rapids	137,634	47	10	.....	.....	.....	9	.....	5	1
Hamtramck	48,615	9	3	1	.....	.....	.....	.....	.....	.....
Highland Park	46,499	14	3	1	.....	.....	3	.....	.....	.....
Holland	12,183	1	1	.....	.....	.....	1	.....	.....	1
Jackson	48,374	9	2	.....	1	.....	4	.....	.....	.....
Kalamazoo	48,487	16	16	1	.....	.....	2	.....	.....	1
Marquette	12,718	3	.....	.....	.....	.....	.....	.....	.....	.....
Pontiac	34,273	5	2	.....	.....	.....	8	.....	.....	.....
Port Huron	25,944	12	1	.....	.....	.....	2	.....	.....	.....
Sault Ste. Marie	12,096	1	.....	.....	.....	.....	.....	.....	1	.....
Minnesota:										
Duluth	98,917	21	1	.....	10	.....	7	.....	.....	.....
Faribault	11,089	3	.....	.....	.....	.....	4	.....	.....	.....
Hibbing	15,089	6	1	.....	.....	.....	9	.....	.....	1
Minneapolis	380,582	92	39	3	1	.....	58	.....	23	3
Rochester	13,722	20	.....	.....	.....	.....	.....	.....	.....	1
St. Cloud	15,573	.....	2	.....	.....	.....	.....	.....	.....	.....
St. Paul	234,698	68	20	2	11	.....	46	1	8	2
Virginia	14,022	.....	.....	.....	1	.....	3	.....	.....	.....
Winona	19,143	.....	1	.....	.....	.....	2	.....	.....	.....

CITY REPORTS FOR WEEK ENDED DECEMBER 23, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Missouri:										
Cape Girardeau	10,252	.....	2	.....	.....	.....	.....	.....	1	.....
Carthage	10,068	.....	3	.....	.....	.....	2	.....	.....	.....
Joplin	29,902	.....	4	.....	.....	.....	.....	.....	.....	.....
Kansas City	324,410	101	16	1	1	.....	12	.....	7	6
St. Joseph	77,939	38	3	.....	.....	.....	4	.....	.....	.....
St. Louis	772,897	199	42	2	3	.....	29	.....	23	12
Montana:										
Anaconda	11,668	3	.....	1	.....	.....	.....	.....	.....	.....
Billings	15,100	6	.....	.....	.....	.....	6	.....	.....	.....
Great Falls	24,121	7	.....	.....	.....	.....	.....	.....	1	.....
Helena	12,037	3	.....	.....	.....	.....	.....	.....	.....	.....
Missoula	12,668	8	.....	.....	.....	.....	.....	.....	2	.....
Nebraska:										
Lincoln	54,948	12	1	.....	.....	.....	2	.....	.....	.....
Omaha	191,601	47	8	1	1	.....	10	.....	.....	1
Nevada:										
Reno	12,016	2	.....	.....	.....	.....	.....	.....	.....	.....
New Hampshire:										
Berlin	16,104	3	.....	.....	.....	.....	.....	.....	.....	1
Concord	22,167	9	.....	.....	.....	.....	.....	.....	.....	.....
Dover	13,029	2	.....	.....	.....	.....	.....	.....	.....	.....
Keene	11,210	5	2	.....	.....	.....	2	.....	.....	.....
New Jersey:										
Asbury Park	12,400	4	.....	.....	.....	.....	.....	.....	.....	.....
Atlantic City	50,707	14	1	.....	74	.....	5	.....	2	.....
Bayonne	76,754	.....	1	.....	1	.....	2	.....	2	.....
Belleville	15,660	.....	1	.....	.....	.....	.....	.....	.....	.....
Bloomfield	22,019	7	3	.....	1	.....	3	.....	.....	.....
Clifton	26,470	1	2	.....	7	.....	2	.....	.....	.....
East Orange	50,710	.....	.....	.....	9	.....	6	.....	1	.....
Garfield	19,381	1	1	.....	4	.....	1	.....	4	.....
Hackensack	17,667	7	.....	.....	1	.....	1	.....	1	.....
Hoboken	68,166	25	3	1	.....	.....	.....	.....	2	.....
Kearny	26,724	10	1	.....	.....	.....	1	.....	.....	.....
Montclair	28,810	4	1	.....	.....	.....	.....	.....	.....	.....
Morristown	12,548	7	.....	.....	70	1	.....	.....	.....	.....
Newark	414,524	123	19	1	66	1	14	.....	31	5
Orange	33,268	8	1	.....	22	1	1	.....	1	.....
Passaic	63,841	21	4	.....	10	.....	6	.....	2	.....
Paterson	135,875	.....	8	.....	4	.....	.....	.....	.....	.....
Perth Amboy	41,707	3	3	1	1	.....	.....	.....	.....	.....
Phillipsburg	16,923	2	1	1	.....	.....	.....	.....	.....	.....
Plainfield	27,700	6	.....	.....	.....	.....	.....	.....	.....	.....
Summit	10,174	1	.....	.....	1	.....	.....	.....	.....	.....
Trenton	119,289	44	43	4	.....	.....	5	.....	3	1
Union (town)	20,651	.....	1	.....	1	.....	.....	.....	.....	.....
West Hoboken	40,074	9	.....	.....	.....	.....	1	.....	.....	.....
West New York	29,926	4	.....	.....	.....	.....	2	.....	1	1
West Orange	15,573	2	1	.....	16	.....	.....	.....	.....	.....
New Mexico:										
Albuquerque	15,157	9	.....	.....	.....	.....	.....	.....	.....	3
New York:										
Albany	113,344	.....	7	.....	3	.....	.....	.....	3	.....
Auburn	36,192	10	3	.....	.....	.....	.....	.....	.....	.....
Buffalo	506,775	126	11	1	77	.....	24	1	20	11
Cohoes	22,987	8	2	1	.....	.....	.....	.....	1	1
Cortland	13,294	3	.....	.....	.....	.....	.....	.....	1	1
Geneva	14,648	1	.....	.....	.....	.....	.....	.....	.....	1
Glens Falls	16,638	10	.....	.....	.....	.....	.....	.....	.....	.....
Hornell	15,025	2	.....	.....	.....	.....	3	.....	.....	.....
Hudson	11,745	5	2	.....	.....	.....	.....	.....	1	.....
Ithaca	17,004	5	.....	.....	1	.....	5	.....	.....	1
Jamestown	38,917	12	3	.....	.....	.....	1	.....	.....	.....
Little Falls	13,029	4	.....	.....	.....	.....	.....	.....	.....	.....
Lockport	21,308	8	1	.....	.....	.....	.....	.....	.....	.....
Middletown	18,420	.....	.....	.....	.....	.....	1	.....	.....	.....
New York	5,620,048	1,452	226	9	137	4	192	2	[1] 201	[1] 99
Newburgh	30,366	14	1	.....	.....	.....	2	.....	.....	.....
Niagara Falls	50,760	7	2	.....	2	.....	1	.....	.....	.....
North Tonawanda	15,482	2	.....	.....	1	.....	2	.....	.....	.....
Olean	20,506	11	.....	.....	.....	.....	3	.....	.....	.....
Peekskill	15,868	5	.....	.....	.....	.....	14	.....	1	.....

[1] Pulmonary tuberculosis only.

CITY REPORTS FOR WEEK ENDED DECEMBER 23, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
New York—Continued.										
Port Chester	16,573	4			5					
Rochester	295,750	69	7		53	1	3			2
Rome	26,341	10	2				2			
Saratoga Springs	13,181	3					2		1	
Schenectady	88,723	17	1				7		3	2
Syracuse	171,717	38	23				11	1	1	
Troy	72,013	29	3						2	1
Watertown	31,285	5	2				1		1	
White Plains	21,031	6			2		9			
North Carolina:										
Durham	21,719	5					2			5
Greensboro	15,861	6								
Rocky Mount	12,742	4								1
Wilmington	33,372	11								
Winston-Salem	48,395	20	2						1	3
North Dakota:										
Fargo	21,961		2				1			
Grand Forks	14,010						1	1		
Ohio:										
Akron	208,435	37	15		4		10		35	
Ashtabula	22,082	4	1							1
Barberton	18,811	6	1				2	1	1	
Bucyrus	10,425	0					2			
Cambridge	13,104	5	1		1				1	
Canton	87,091	16	4				2			
Chillicothe	15,831	6	1				1			
Cincinnati	401,247	144	19	3	5		18		6	8
Cleveland	796,841	195	66	5	39		134	1	31	20
Cleveland Heights	15,236				1		3			
Columbus	237,031	86	9	2	8		6		2	8
Dayton	152,559	36	8		2		16		1	
East Cleveland	27,292	7	2		1		5		1	
Findlay	17,021	4			58					
Fremont	12,468	5			1					
Hamilton	39,675	12			3					2
Kenmore	12,683		1				1			
Lancaster	14,706	3	4	1						
Lima	41,326	5	2				2			
Lorain	37,295		1		8		2			
Mansfield	27,824	9			10					
Marion	27,891				1		3			
Martins Ferry	11,634	3			20					
Middletown	23,594	5	2							
Newark	26,718	8	1							
Niles	13,080	5	1	1			1			1
Norwood	24,906	2					1		1	1
Piqua	15,044	2	1				1			
Salem	10,305	2	3							
Sandusky	22,897	7	1		1		2	1		
Springfield	60,840	9	7	1			3		1	
Steubenville	28,508	10	2						1	
Toledo	243,164	58	19	2	312		10		3	7
Youngstown	132,358	35	33	3	1		12		3	5
Zanesville	29,569	9	3	1	53		1			
Oklahoma:										
Oklahoma	91,295	30	4		2		4			
Tulsa	72,075	1	5	1	9		4			
Oregon:										
Portland	258,288	60	9				11		20	5
Pennsylvania:										
Philadelphia	1,823,779	617	80	9	1,487	33	44	2	48	36
Rhode Island:										
Cranston	29,407	6			3		1			
Pawtucket	64,248	18			6					1
Providence	237,595	70	12	1	72		5			3
South Carolina:										
Charleston	67,957	24	2				1			
Columbia	37,524		1						1	
Greenville	23,127	6	2				1			1
South Dakota:										
Sioux Falls	25,202	4	2				2			
Tennessee:										
Chattanooga	57,895		5				6			
Memphis	162,351	63	7		10		1		5	7
Nashville	118,342	42	7	1			5		6	2

CITY REPORTS FOR WEEK ENDED DECEMBER 23, 1922—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Texas:										
Beaumont	40,422	11	2							
Corpus Christi	10,522	3	1						1	1
Corsicana	11,356	2								
Dallas	158,976	43	7				3			4
El Paso	77,560	28					1		6	7
Fort Worth	106,482	24	8				4		1	1
Galveston	44,255	15	3							1
Houston	138,276	40	9				2			1
San Antonio	161,379	59	8				1			6
Waco	38,500	11	1							1
Utah:										
Salt Lake City	118,110	27	6				1		1	
Vermont:										
Barre	10,008						2			
Burlington	22,779	6								1
Rutland	14,954	4								
Virginia:										
Alexandria	18,060	5	1							
Charlottesville	10,688	1	1							
Lynchburg	30,070	10	3	1					2	
Norfolk	115,777		3				1		3	2
Petersburg	31,012	11	2				2			2
Richmond	171,667	44	6				15		6	5
Roanoke	50,842	18	6				5			1
Washington:										
Everett	27,644				1					
Seattle	315,312		3		3		10		14	
Tacoma	96,965		1		1		7			
Yakima	18,539		2				1			
West Virginia:										
Bluefield	15,282	4			2					
Charleston	39,608	14	7		1		1		1	2
Clarksburg	27,869	8	4		1		2			
Fairmont	17,851		3						1	
Huntington	50,177	16	2				2			
Martinsburg	12,515		1							
Morgantown	12,127		1				1			
Moundsville	10,669	3								
Parkersburg	20,050	7					1			1
Wheeling	56,208	15			57		2			
Wisconsin:										
Appleton	19,561	7	1		1				1	
Ashland	11,334						2			
Beloit	21,284	5			6		7			
Eau Claire	20,906		1		1		1		1	
Fond du Lac	23,427	6					4			
Janesville	18,293	2			1		1			
Kenosha	40,472	7	2		17		2			
Madison	38,378	6	4				6			
Manitowoc	17,563	3	1		1					
Marinette	13,610	9	1							
Milwaukee	457,147	107	32	2	674	1	94	2	2	3
Oshkosh	33,162	19					1			2
Racine	58,593	15	6	1	2		2			1
Sheboygan	30,955	8	8	1			1			
Stevens Point	11,371		2				3			
Superior	39,671	9					3			1
Wausau	18,661		2							
West Allis	13,745	1	10		53		13			
Wyoming:										
Cheyenne	13,829	7		2			1		1	

FOREIGN AND INSULAR.

CUBA.

Cummunicable Diseases—Habana.

Communicable diseases have been notified at Habana as follows:

Disease.	Dec. 11-20, 1922.		Remaining under treatment Dec. 20, 1922.	Disease.	Dec. 11-20, 1922.		Remaining under treatment Dec. 20, 1922.
	New cases.	Deaths.			New cases.	Deaths.	
Chicken pox	4	.....	6	Measles	1	.....	.....
Diphtheria	6	.....	4	Paratyphoid fever	2	.....	7
Leprosy	.....	.....	10	Scarlet fever	1	.....	5
Malaria	77	.....	[1] 65	Typhoid fever	35	3	[2] 110

[1] From the interior, 26.

[2] From the interior, 22; from abroad, 1.

Quarantine Against Gulf Ports in United States Suspended.

Under date of December 22, 1922, quarantine measures against Gulf ports in the United States, on account of plague, were declared suspended for arrivals in Cuban ports.

ECUADOR.

Diseases Declared Quarantinable.

By legislative decree of the Government of Ecuador, approved September 29, 1922, Asiatic cholera, bubonic plague, smallpox, typhus fever, and yellow fever were declared subject to quarantine.

Plague—Plague-Infected Rats—Guayaquil—November, 1922.

During the month of November, 1922, one case of plague was notified at Guayaquil, Ecuador. During the same period, out of 8,750 rats examined, 52 rats were found plague infected.

JAMAICA.

"Alastrim."

During the two weeks ended December 9, 1922, 68 new cases of "alastrim" were reported in the island of Jamaica.

Epidemic Outbreak—St. Thomas Parish.

Under date of December 13, 1922, the appearance of a small epidemic of "alastrim" was reported in the parish of St. Thomas,

island of Jamaica, with approximately 100 cases and 10 deaths occurring within the previous two-month period. Twenty-two cases were stated to be present in hospital, and about 42 estimated cases outside of hospital, at the date of the report. More than 2,000 vaccinations were reported performed in the parish during the period covered by the report. It was stated that vaccination was not compulsory in the parish. The disease was reported to be almost exclusively confined to the negro agricultural laborers living in the foothills, and it was stated that few, if any, cases were present in the towns. The parish of St. Thomas adjoins the parish of Portland, in which epidemic prevalence of "alastrim" was reported October 25, 1922.[1]

Typhoid Fever—Kingston and Vicinity.

During the two weeks ended December 9, 1922, four cases of typhoid fever were reported at Kingston, occurring during the week ended December 9, 1922. During the two-week period covered by the report, 31 cases of typhoid fever were reported in the vicinity of Kingston.

PORTUGAL.

Inspection Regulations for Vessels—Lisbon.

Information dated October 6, 1922, shows that under a law made public September 25, 1922, vessels lying in the harbor of Lisbon were made subject to visits of port sanitary officers up to midnight of each working day.

Plague—Lisbon.

During the period November 10–29, 1922, four new cases of plague with two deaths, were reported at Lisbon, Portugal.

PORTUGUESE WEST AFRICA.

Plague—Angola—Loanda.[2]

Under date of November 4, 1922, the plague outbreak at Loanda, Portuguese West Africa, was stated to have spread from the section of the city in which the first cases were reported to other sections, with a total of 27 deaths from October 1 to 28, 1922. Fatal cases were reported among the white population.

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[1] Public Health Reports, Nov. 17, 1922, p. 2879.
[2] Public Health Reports, Dec. 15, 1922, p. 3125.

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

Reports Received During Week Ended January 12, 1923.[1]

The reports contained in the following tables must not be considered as complete or final, either as regards the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India				Sept. 24-Oct. 28, 1922: Cases, 4,616; deaths, 3,070.
Bombay	Oct. 27-Nov. 4	1		
Madras	Nov. 19-25	2	1	
Rangoon	Nov. 12-18	3	1	

PLAGUE.

Azores:				
Fayal Island—				
Castelo Branco	Dec. 2		2	Vicinity of Horta.
Pico Island—				
Lages	Nov. 27-Dec. 15		8	1 case present Dec. 15, 1922.
St. Michaels Island	Nov. 12-25	32	15	At localities 3-9 miles from Ponta Delgada.
Brazil:				
Bahia	Nov. 12-18		1	
British East Africa:				
Kenya Colony—				
Tanganyika Territory	Oct. 15-21		1	
Ceylon:				
Colombo	Nov. 12-18	9	5	Plague rodents, 3.
China:				
Hongkong	Nov. 5-11	1	3	
Ecuador:				
Guayaquil	Nov. 16-30	1	1	Nov. 1-30, 1922: Rats examined, 8,750; found plague-infected, 52.
Egypt				Jan. 1-Nov. 30, 1922: Cases, 480; deaths, 224.
City—				
Alexandria	Nov. 19	1		
Port Said	Nov. 24-27	2	1	
Suez	Nov. 18-19	1	2	
Province—				
Assiout	Nov. 19	1		
Minieh	Nov. 18-27	2	1	
India				Oct. 1-28, 1922: Cases, 7,569; deaths, 6,567.
Bombay	Oct. 27-Nov. 4	1		
Madras	Nov. 19-25	1	1	
Rangoon	Nov. 12-18	7	6	
Portugal:				
Lisbon	Nov. 10-29	4	2	
Portuguese West Africa:				
Angola—				
Loanda	Oct. 1-28		27	Fatal cases among white population.
Syria:				
Beirut	Nov. 6-12	2	1	

SMALLPOX.

Algeria:				
Algiers	Dec. 1-10	1		
Arabia:				
Aden	Nov. 26-Dec. 2	2		
British East Africa:				
Kenya Colony—				
Tanganyika Territory	Oct. 8-28	12	2	
Canada:				
Manitoba—				
Winnipeg	Dec. 3-9	4		
Chile:				
Valparaiso	Oct. 2-Nov. 5		51	
China:				
Hongkong	Nov. 5-11		1	
India:				
Madras	Nov. 12-18	8	2	
Rangoon	Nov. 5-11	2	1	

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

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

Reports Received During Week Ended January 12, 1923—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Java:				
West Java—				
Batavia	Nov. 4–10	14		Province.
Mexico:				
Sonora, State—				
Empalme	Nov. 1–30	4	1	Present in northern section of State.
Syria:				
Aleppo	Nov. 26–Dec. 2	22	10	
On vessel:				
S. S. Huntress	Nov. 11	1		At Fremantle, Australia, from Cape Town, South Africa.

TYPHUS FEVER.

Czechoslovakia:				
Prague	Nov. 19–25	1		
Palestine	Dec. 5–11	2		In northern part of country.
Spain:				
Barcelona	Nov. 30–Dec. 6		2	

Reports Received from December 30, 1922, to January 5, 1923.[1]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Calcutta	Nov. 12–18	1	1	

PLAGUE.

Brazil:				
Bahia	Oct. 29–Nov. 11	1		
Porto Alegre	Nov. 19–25	1		
China:				
Hongkong	Nov. 12–18	5	3	
Egypt:				
Alexandria	Nov. 19–25	1		
Port Said	do	2	1	
Java:				
East Java—Soerabaya	Oct. 22–28	1	1	
Palestine:				
Jaffa	Nov. 27–Dec. 4	1		
Peru				Nov. 1–15: Cases, 8; deaths, 3.
Localities—				
Chepen	Nov. 1–15			Present.
Guadalupe	do	3	0	
Lima (country)	do	2	0	
Lima (city)	do	1	1	
San Pedro	do	2	1	
Trujillo	do	0	1	
Portugal:				
Lisbon	Nov. 20–26		1	
Turkey:				
Constantinople	Nov. 22–28	2		

[1] From medical officers of the Public Health Service, American consuls, and other sources. For reports received from July 1 to Dec. 29, 1922, see Public Health Reports for Dec. 29, 1922. The tables of epidemic diseases are terminated semiannually and new tables begun.

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

Reports Received from December 30, 1922 to January 5, 1923—Continued.

SMALLPOX.

Place.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Aden	Nov. 19-29	5	1	
Brazil:				
Bahia	Nov. 5-11	1		
Canada:				
Manitoba—				
Winnipeg	Dec. 10-16	2		
Ontario—				
Niagara Falls	Dec. 3-16	5		
Ottawa	Dec. 10-16	3		
Chile:				
Concepcion	Oct. 30-Nov. 20		3	
China:				
Antung	Nov. 13-26	1		
India:				
Calcutta	Nov. 12-18	1	1	
Java:				
West Java—				
Batavia	Nov. 11-17	7		
Mexico:				
Chihuahua	Dec. 4-10		3	
Nogales	Dec. 10-19		1	
Peru:				
Callao	Nov. 1-15	2	0	
Lima (country)	do	2	1	
Portugal:				
Lisbon	Nov. 19-Dec. 2	26	6	
Oporto	Oct. 15-Dec. 2	19	8	
Spain:				
Corunna	Nov. 26-Dec. 2		1	
Seville	Nov. 27-Dec. 3		12	
Valencia	Nov. 26-Dec. 2	1		
Switzerland:				
Zurich	Nov. 19-25	6		
Syria:				
Aleppo	do	2	2	
Turkey:				
Constantinople	Nov. 19-Dec. 2	45	18	
Tunis:				
Tunis	Dec. 1-8		1	

TYPHUS FEVER.

Algeria:				
Algiers	Nov. 11-20	1	1	
Brazil:				
Port Alegre	Nov. 19-25	1		
Chile:				
Concepcion	Oct. 17-Nov. 20		4	
China:				
Antung	Nov. 13-26	5		
Egypt:				
Alexandria	Nov. 19-25	1	1	
Portugal:				
Oporto	Oct. 15-Dec. 2	1	1	
Turkey:				
Constantinople	Nov. 27-Dec. 2	3		

YELLOW FEVER.

Senegal:				
Dakar—				
Saltpond				Reported present Dec. 21, 1922.
Warrai				Do.