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DISABLING ILLNESS AMONG INDUSTRIAL EMPLOYEES IN 1936 AS COMPARED WITH EARLIER YEARS

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This report for the calendar year 1936 is the sixteenth annual report of a series pertaining to disabling illness.[1] It relates to the average frequency of new cases of sickness and nonindustrial injuries causing absence from work for more than 1 week among approximately 171,000 male and 15,000 female industrial employees in 1936 as compared with the 5 preceding years. The data were computed from periodic reports received from about 33 sick benefit associations or relief departments of establishments located east of the Mississippi and north of the Ohio and Potomac Rivers. The report makes available the average annual number of cases per 1,000 employees by sex and by cause of disability for two groups of establishments. Group A comprises all associations and companies which reported in the specified year regardless of whether they continued to report throughout the 6 years. Group B is a part of group A and is composed of 23 establishments which reported continuously through the 6 years ending December 31, 1936.

In table 1 are given, among other things, the incidence rates for disabilities lasting 8 consecutive calendar days or longer per 1,000 men for the broad classification of diseases for 1936, as compared with their respective average rates for the 5-year period, 1931–35. It will be observed that groups A and B, respectively, show approximately the same percentage increase in frequency. Thus for sickness and nonindustrial injuries the increases are 3 and 2 percent; for sickness, 4 and 3 percent; for respiratory diseases, 7 and 6 percent; and for nonrespiratory diseases, 2 and 1 percent. As indicated in the table, the rates by individual years for group B have been generally somewhat lower than for group A. However, since group B is a part of group A, and proportionate time changes in the rates of one group are similar to corresponding ones in the other group shown, the comparisons to follow will be restricted, unless otherwise stated, to group A.

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1 For the record 1921-30, inclusive, see Public Health Reports, 47: 995-1001 (Apr. 29, 1932).

TABLE 1.—*Frequency of specified causes of disability lasting 8 consecutive calendar days or longer among male industrial workers in various industries, by years from 1931 to 1936 inclusive* [1]

[Rates per 1,000 men]

Year in which disability began	Sickness and nonindustrial injuries [2]		Sickness		Respiratory diseases [3]		Sickness exclusive of influenza		Nonrespiratory diseases		Average number of men, all reporting establishments
	A	B	A	B	A	B	A	B	A	B	
1931	94.6	94.0	82.2	82.2	34.9	35.2	63.8	62.9	47.3	47.0	171,694
1932	97.5	95.3	84.9	83.5	37.6	37.3	62.9	61.5	47.3	46.2	163,979
1933	82.3	78.8	71.0	68.5	28.6	26.8	55.7	54.6	42.4	41.7	152,203
1934	78.1	76.3	65.8	64.4	24.5	24.0	55.7	54.2	41.3	40.4	174,643
1935	85.1	82.6	73.9	71.5	29.3	28.2	61.2	59.3	44.6	43.3	157,959
1936	90.3	87.4	78.8	76.0	33.2	32.0	63.7	61.4	45.6	44.0	170,680
5 preceding years [4]	87.5	85.4	75.6	74.0	31.0	30.3	59.8	58.5	44.6	43.7	164,096

A = all reporting establishments; B = establishments which reported throughout the 6 years ending Dec. 31, 1936.

[1] For the record 1921 to 1930, inclusive, see reference given in footnote 1.
[2] Industrial accidents, venereal diseases, and a few numerically unimportant causes of disability are not reported.
[3] Title numbers 11, 23, 104–115a, in the International List of Causes of Death, fourth revision, Paris, 1929.
[4] 1931 to 1935 inclusive.

The frequency rate of new cases of sickness and nonindustrial injuries causing absence from work for more than 1 week among 170,680 male employees was 90.3 cases per 1,000 in 1936.[2] This was the highest rate during the period 1933–36, but well below the rates for 1931 and 1932. The rate for sickness exclusive of influenza was 63.7 cases per 1,000 men, which exceeded all corresponding annual rates during the past 6 years.

RESPIRATORY DISEASES

The respiratory group of diseases accounted for the major portion of the increase in the incidence of illness in 1936 as compared with the 2 former years. As shown in table 2, with the exception of tuberculosis of the respiratory system and diseases of the pharynx and tonsils, each respiratory disease subgroup occurred at a higher incidence rate in 1936 than in 1934 or 1935.

The frequency of influenza and grippe in 1936 (15.1 cases per 1,000 men) was 19 percent higher than the rate for 1935 (12.7 cases per 1,000 men) and 50 percent higher than for 1934 (10.1 cases per 1,000 men). Nevertheless, the rate for 1936 was 4 percent below the average rate (15.8) for the preceding 5-year period.

Another development of an unfavorable nature was an increase in the number of cases of bronchitis, acute and chronic. In 1936 this

[2] A report, "Sickness among male industrial employees during the final quarter of 1936 and the year as a whole", was published in the Public Health Reports for Apr. 30, 1937. Because of the inclusion of additional data subsequently reported, the rates for 1936 in this final report are somewhat lower than the preliminary annual rates given in the quarterly report.

disease occurred at a rate of 4.8 cases per 1,000 men, which was 41 percent above its average incidence during the years 1931–35, and exceeded any rate recorded for this disease since 1929. The incidence of diseases of the pharynx and tonsils in 1936, although 4 percent higher than in the preceding 5-year period, was below the rate for 1935. The rate for pneumonia (all forms) in 1936 (2.6 cases per 1,000 men) was 13 percent above the rate for 1935 (2.3 cases per 1,000 men), and, in turn, exceeded the rate for any year since 1929. Among the industrial policyholders of the Metropolitan Life Insurance Co., the death rate from this disease in 1936 as compared with 1935 increased 5 percent.[3]

TABLE 2.—*Frequency of specified respiratory diseases which caused disability for 8 consecutive calendar days or longer among male industrial workers in various industries, by years, from 1931 to 1936, inclusive*[1]

[Rates per 1,000 men]

Year in which disability began	Influenza or grippe (11)		Bronchitis, acute and chronic (106)		Diseases of the pharynx and tonsils (115a)		Pneumonia, all forms (107–109)		Tuberculosis of the respiratory system (23)		Other diseases of the respiratory system (104–105; 110–114)	
	A	B	A	B	A	B	A	B	A	B	A	B
1931	18.9	19.3	3.6	3.8	5.2	5.1	2.1	2.1	1.0	1.0	4.1	3.9
1932	22.0	22.0	3.6	3.7	4.5	4.4	2.0	1.9	1.0	1.0	4.5	4.3
1933	15.3	13.9	2.9	2.8	3.9	3.6	1.8	1.7	.8	.9	3.9	3.9
1934	10.1	10.2	3.2	3.2	4.3	3.8	2.0	2.1	.8	.8	4.1	3.9
1935	12.7	12.2	3.6	3.6	5.1	4.8	2.3	2.2	1.0	1.0	4.6	4.4
1936	15.1	14.6	4.8	4.7	4.8	4.4	2.6	2.6	.8	.8	5.1	4.9
5 preceding years	15.8	15.5	3.4	3.4	4.6	4.4	2.0	2.0	.9	.9	4.3	4.1

Numbers shown in parentheses are disease title numbers from the International List of Causes of Death, fourth revision, Paris, 1929.

A = all reporting establishments; B = establishments which reported throughout the 6 years ending Dec. 31, 1936.

[1] For the record 1921 to 1930, inclusive, see reference given in footnote 1.

"Other diseases of the respiratory system", including diseases of the upper respiratory tract, showed a sizable increase in frequency in 1936 as compared with all the former years included in table 2.

Most noteworthy in the record since 1921 is the downward trend in the new cases of tuberculosis of the respiratory system. The incidence has decreased from 1.9 cases per 1,000 in 1921 and 1922 to 0.8 case in 1936.[4] During the 6 years under discussion the annual sickness rates fluctuated about a mean of 0.9, with 3 rates above and 3 below the mean.

DIGESTIVE DISEASES

For the digestive disease group as a whole (table 3) the frequency rate of cases in 1936 was slightly higher than that for 1935 and that for the preceding 5-year period. With the exception of "other digestive

[3] Statistical Bulletin, Metropolitan Life Insurance Co., New York, 18:11 (February 1937).

[4] Public Health Reports, 47: 998 (Apr. 29, 1932).

diseases" the same observation holds for all subgroups of diseases of the digestive system.

NONRESPIRATORY, NONDIGESTIVE DISEASES

As a group the nonrespiratory, nondigestive diseases showed relatively little change in occurrence since 1935, and the rate for 1936 corresponded very closely to the preceding 5-year average. The only subgroup of these diseases which showed a sensible increase in rates in 1936 over the average for 1931–35 were diseases of the circulatory system except diseases of the veins, and "ill-defined and unknown causes of disability." While not recording spectacular changes, diseases of the ears and of the mastoid process; nephritis, acute and chronic; diseases of the organs of vision; and cancer (all forms) showed downward trends during the years under consideration.

TABLE 3.—*Frequency of specified diseases of the digestive system which caused disability for 8 consecutive calendar days or longer among male industrial workers in various industries, by years from 1931 to 1936 inclusive* [1]

[Rates per 1,000 men]

Year in which disability began	Digestive diseases total (115b-129)		Diseases of the stomach except cancer (117-118)		Diarrhea and enteritis (120)		Appendicitis (121)		Hernia (122a)		Other digestive diseases (115b, 116, 122b-129)	
	A	B	A	B	A	B	A	B	A	B	A	B
1931	13.4	13.1	4.0	3.8	1.2	1.1	3.7	3.6	1.8	1.8	2.7	2.8
1932	13.3	12.7	4.0	3.7	1.0	1.0	3.4	3.5	1.9	1.8	3.0	2.7
1933	12.1	11.3	3.3	3.4	1.0	1.0	3.3	3.2	1.3	1.3	3.2	2.4
1934	12.7	12.5	3.2	3.5	1.3	1.1	3.9	4.0	1.5	1.4	2.8	2.5
1935	12.9	12.5	3.6	3.6	1.1	1.0	4.0	3.9	1.4	1.4	2.8	2.6
1936	13.6	13.1	3.7	3.5	1.3	1.3	4.1	4.1	1.7	1.6	2.8	2.6
5 preceding years	12.9	12.4	3.6	3.6	1.1	1.1	3.7	3.6	1.6	1.5	2.9	2.6

Numbers in parentheses are disease title numbers from the International List of Causes of Death, fourth revision, Paris, 1929.
A=all reporting establishments; B=establishments which reported throughout the 6 years ending Dec. 31, 1936.

[1] For the record 1921 to 1930, inclusive, see reference given in footnote 1.

Rheumatism, acute and chronic, which showed definite improvement in 1934 and 1935 (4.0 cases per 1,000 men) as compared with earlier years, increased to 4.2 cases per 1,000 in 1936. This rate was below the 5-year average. Diseases of the organs of locomotion except diseases of the joints occurred at a rate of 3.2 cases per 1,000 men in 1936, which exceeded the rates for 1933, 1934, and 1935, as well as the average for 1931–35.

The infectious and parasitic disease group, which is composed principally of the communicable diseases, had the favorable rate of 2.3 cases per 1,000 men. It is of interest to observe in this connection that the policyholders of the Metropolitan Life Insurance Co. showed a low mortality rate for the epidemic diseases listed during 1936 as compared with 1935.

TABLE 4.—*Frequency of specified nonrespiratory, nondigestive diseases which caused disability for 8 consecutive calendar days or longer among male industrial workers in various industries, by years from 1931 to 1936, inclusive* [1]

[Rates per 1,000 men]

Year in which disability began	Nonrespiratory, nondigestive diseases, total		Diseases of the circulatory system except diseases of the veins (90–99) (101–103)		Diseases of the veins (100)		Diseases of the heart (90–95)		Nephritis—acute and chronic (130–132)	
	A	B	A	B	A	B	A	B	A	B
1931	33.9	33.9	3.2	3.4	1.8	1.6	2.0	2.2	0.7	0.7
1932	34.0	33.5	3.7	3.9	1.8	1.7	2.5	2.7	.8	.7
1933	30.3	30.4	3.4	3.3	1.4	1.4	2.1	2.2	.5	.6
1934	28.6	27.9	3.0	3.0	1.5	1.4	2.0	2.0	.5	.6
1935	31.7	30.8	3.7	3.6	1.5	1.4	2.4	2.4	.5	.5
1936	32.0	30.9	3.7	3.4	1.6	1.6	2.3	2.3	.4	.4
5 preceding years	31.7	31.3	3.4	3.4	1.6	1.5	2.2	2.3	.6	.6

Year in which disability began	Other diseases of the genito-urinary system and annexa (133–138)		Neuralgia, neuritis, sciatica (87a)		Neurasthenia and the like (87b)		Other diseases of the nervous system (78–85)		Diseases of the organs of vision (88)	
	A	B	A	B	A	B	A	B	A	B
1931	2.3	2.3	2.1	2.1	1.5	1.5	1.1	1.3	1.0	0.9
1932	2.3	2.3	2.3	2.5	1.3	1.2	1.2	1.3	.9	.8
1933	2.2	2.2	2.1	2.0	.8	.8	1.4	1.3	.8	.9
1934	2.4	2.1	1.8	1.8	.8	.7	1.4	1.1	.8	.7
1935	2.7	2.5	2.3	2.3	1.2	1.0	1.3	1.2	.8	.8
1936	2.3	2.1	2.2	2.0	1.1	1.0	1.1	1.1	.8	.8
5 preceding years	2.4	2.3	2.1	2.1	1.1	1.1	1.3	1.2	.9	.8

Year in which disability began	Diseases of the ears and of the mastoid process (89)		Rheumatism, acute and chronic (56–57)		Diseases of the organs of locomotion except diseases of the joints (156b)		Diseases of the skin (151–153)		Infectious and parasitic diseases [2] (1–10, 12–22, 24–33, 36–44)	
	A	B	A	B	A	B	A	B	A	B
1931	0.7	0.6	5.4	5.4	3.3	3.6	3.2	3.2	3.3	2.9
1932	.7	.6	5.3	5.4	3.3	3.7	2.7	2.7	2.7	2.1
1933	.6	.6	4.9	5.0	2.8	3.0	2.7	2.7	2.0	1.9
1934	.5	.5	4.0	4.0	2.7	2.9	2.5	2.4	2.5	2.5
1935	.6	.5	4.0	4.0	2.7	2.8	2.7	2.7	3.0	2.8
1936	.5	.5	4.2	4.2	3.2	3.3	3.0	2.8	2.3	2.4
5 preceding years	.6	.6	4.7	4.8	3.0	3.2	2.8	2.8	2.7	2.4+

Year in which disability began	Cancer, all forms (45–53)		Other general diseases [3] (54, 55, 59, 77)		Diseases of the bones and joints (154–156a)		Ill-defined and unknown causes of disability (200)		Nonindustrial injuries (163–198)	
	A	B	A	B	A	B	A	B	A	B
1931	0.6	0.6	1.2	1.2	0.6	0.5	1.9	2.1	12.4	11.8
1932	.6	.6	1.7	1.7	.4	.4	2.3	1.9	12.6	11.8
1933	.5	.5	1.7	1.7	.5	.4	2.0	2.1	11.3	10.3
1934	.4	.4	1.9	1.9	.4	.3	1.5	1.6	12.3	11.9
1935	.5	.5	1.7	1.6	.5	.5	2.0	2.1	11.2	11.1
1936	.4	.4	1.8	1.7	.6	.5	2.8	2.7	11.5	11.4
5 preceding years	.5	.5	1.6	1.6	.5	.4	1.9	2.0	11.9	11.4

Numbers shown in parentheses are disease title numbers from the International List of the Causes of Death, fourth revision, Paris, 1929.

A=all reporting establishments; B=establishments which reported throughout the 6 years ending Dec. 31, 1936.

[1] For the record 1921 to 1930, inclusive, see reference given in footnote 1.

[2] Except influenza, respiratory tuberculosis, and the venereal diseases.

[3] Includes nutritional diseases, diseases of the endocrine glands, diseases of the blood and blood-making organs, chronic poisonings, and intoxication.

The frequency of nonindustrial injuries (11.5 cases per 1,000) was slightly greater in 1936 than in 1935, but lower than the average (11.9) for the preceding 5-year period.

WAS THE INCREASE IN DISABILITY IN 1936 DUE TO SELECTION?

Group B, which is composed of the identical 23 establishments throughout the past 6 years, showed a progressively decreasing number of male employees during the years 1931, 1932, and 1933. In 1934, 1935, and 1936, on the other hand, the number gradually increased. With the increase in the number employed there was a concomitant increase in the sickness rate. The following table contains the appropriate data:

Year	Average number of male employees	Annual number of cases per 1,000	Year	Average number of male employees	Annual number of cases per 1,000
1931	125, 520	94. 0	1934	122, 552	76. 3
1932	107, 681	95. 3	1935	125, 727	82. 6
1933	105, 128	78. 8	1936	145, 916	87. 4

It appears that an improvement in economic conditions paralleled an increase in the frequency of sickness. To account for this situation it may be hypothesized that, during the depression years, there was a general releasing of the older and less physically fit employees which led to a highly selected group in 1933 with necessarily low sickness rates; furthermore, pursuing the same thought, with a greater demand for employees in the later years the employed group gradually assumed its earlier complexion, together with higher sickness rates. The hypothesis is merely stated; to investigate its validity would require additional data which are not available.

FREQUENCY OF DISABILITY AMONG FEMALE EMPLOYEES IN 1936 AS COMPARED WITH FORMER YEARS

Because of the small number of years of exposure, the analyses for female employees are limited to rates for the broad disease groups. Most of the reporting establishments upon which this report is based pay no benefits for disabilities connected with diseases of pregnancy, childbirth, and the puerperal state; yet, on account of the difference in age distributions, the ratios of the female rates to the male rates are a crude comparison of the incidence of illness among the two sexes.

For the 15,000 female industrial employees covered in this report, an average of 144.4 per 1,000 women were disabled from sickness and nonindustrial injuries for 8 calendar days or longer during 1936 as compared with 90.3 males. Thus the ratio of the illness rate for females to that for males is 1.6 to 1. As shown in table 5, the incidence rate for females in 1936 was slightly lower than in 1935 and 2 percent lower than for the preceding 5-year period. The rate for the respiratory disease group for 1936, 60.7 cases per 1,000 females, as compared with the rate for 1935, 50.4 cases per 1,000, showed an increase of 20 percent in frequency for these diseases, while the rate for the nonrespiratory disease group, 71.2 cases per 1,000 women, as compared with 80.3, revealed a decrease of 11 percent in 1936 as compared with 1935. Likewise the occurrence of nonindustrial injuries decreased in 1936.

TABLE 5.—*Frequency of specified causes of disability lasting 8 consecutive calendar days or longer among female industrial workers in various industries, by years from 1931 to 1936, inclusive*

[Rates per 1,000 women]

Year in which disability began	Sickness and nonindustrial injuries [1]	Percent of male rate	Sickness	Respiratory diseases [2]	Sickness exclusive of influenza	Nonrespiratory diseases	Nonindustrial injuries	Average number of women, all reporting establishments
1931	162.0	171	147.8	63.9	115.5	83.9	14.2	12,272
1932	158.4	162	143.6	71.6	101.1	72.0	14.8	13,520
1933	131.3	160	119.5	51.3	91.4	68.2	11.8	14,587
1934	143.6	184	131.1	52.9	108.2	78.2	12.5	15,644
1935	144.9	170	130.7	50.4	108.2	80.3	14.2	15,049
1936	144.4	160	131.9	60.7	104.2	71.2	12.5	15,181
5 preceding years	148.0	169	134.5	58.0	104.9	76.5	13.5	14,214

[1] Industrial accidents, venereal diseases, and a few numerically unimportant causes of disability are not reported.
[2] Title numbers 11, 23, 104–115a, in the International List of the Causes of Death, fourth revision, Paris, 1929.

OCCUPATIONAL DISEASES OCCURRING IN FACTORIES AND WORKSHOPS OF GREAT BRITAIN, 1936 [1]

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The Annual Report of the Chief Inspector of Factories and Workshops of Great Britain for 1936 [2] was published in July 1937, and is of more than ordinary interest to those engaged in industrial health work. It is appropriate to direct attention at this time to some of the material and in particular that concerned with occupational diseases. Data on the number of persons exposed are not available; the presentation will be limited, therefore, to the actual number of cases and deaths, and to certain relevant proportions.

[1] From the Division of Industrial Hygiene of the National Institute of Health, U. S. Public Health Service, Washington, D. C.
[2] H. M. Stationery Office, London, 1937; 107 pp. The chapter titles follow: General Report, Safety, Accidents to Young Workers, Health, Hours of Employment, Welfare, Piece-Work Particulars, Trucks, and Home Office Industrial Museum.

TABLE 1.—*Occupational diseases reported in 1936, with comparative data for 1935*

[Reported under sec. 73 of the Factory and Workshop Act of 1901, and under sec. 3 of the Lead Paint Act]

Disease	1936				1935			
	Cases		Deaths		Cases		Deaths	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	428	100.0	44	100.0	438	100.0	58	100.0
Lead poisoning	163	38.1	13	29.5	168	38.4	17	29.3
Epitheliomatous ulceration	142	33.2	27	61.4	171	39.0	38	65.5
Chrome ulceration	84	19.6			67	15.3		
Anthrax	30	7.0	1	2.3	20	4.6	3	5.2
Aniline poisoning	7	1.7	1	2.3	9	2.1		
Arsenical poisoning	1	.2	1	2.3	1	.2		
Chronic benzene poisoning	1	.2	1	2.2				
Mercurial poisoning					1	.2		
Carbon bisulphide poisoning					1	.2		
Phosphorus poisoning								
Manganese poisoning [1]								
Toxic jaundice								

[1] Became notifiable Aug. 1, 1936.

The occupational diseases reported in 1936 under the Factory and Workshop Act, and the Lead Paint Act are shown in table 1. Comparative data are included for the year 1935. There were reported 428 cases and 44 deaths in 1936, as compared with 438 cases and 58 deaths in 1935. Lead poisoning and epitheliomatous ulceration are well above the other causes with respect to both cases and deaths, and in both years. The percentages of all reported cases associated with lead were similar in both years, namely, approximately 38 percent. The proportions of deaths due to lead were also approximately the same in both years (29 percent). While the proportions of cases with epitheliomatous ulceration were in both years of the same magnitude as those associated with lead, the proportions dying in both years were over twice the corresponding proportions recorded for lead. In both years chrome ulceration and anthrax ranked third and fourth, respectively, with regard to proportion of cases.

Lead poisoning.—Table 2 shows the industrial origin of cases and deaths connected with lead poisoning. With respect to cases, the painting of buildings ranks first in both years, with 17 percent in 1936 and 19 percent in 1935; paint and color works, smelting of metals, and pottery follow in order, with between 10 and 12 percent in both years. In 1936 more than half of all reported deaths from lead poisoning were caused in the painting of buildings, with 8 percent in the smelting of metals and the same percentage in pottery making. In 1935 the painting of buildings and pottery each accounted for 7 deaths, with a percentage in each instance of 41.

TABLE 2.—*Industrial origin of lead poisoning*

Industry	1936				1935			
	Cases		Deaths		Cases		Deaths	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total	163	100.0	13	100.0	168	100.0	17	100.0
Painting of buildings	27	16.6	7	53.8	32	19.1	7	41.2
Paint and color works	19	11.7	-	-	21	12.5	-	-
Smelting of metals	19	11.7	1	7.7	17	10.1	-	-
Pottery	18	11.0	1	7.7	18	10.7	7	41.2
Electric accumulator works	15	9.2	-	-	10	5.9	-	-
Shipbreaking	11	6.7	-	-	10	5.9	-	-
Coach and car painting	7	4.3	-	-	5	3.0	1	5.9
Other contact with molten lead	5	3.1	-	-	11	6.5	-	-
White and red lead works	5	3.1	1	7.7	7	4.2	-	-
Vitreous enamelling	5	3.1	-	-	1	.6	-	-
Paint used in other industries	4	2.5	1	7.7	2	1.2	-	-
Printing	3	1.8	-	-	4	2.4	1	5.9
Plumbing and soldering	3	1.8	-	-	3	1.8	1	5.8
Shipbuilding	3	1.8	-	-	3	1.8	-	-
Indiarubber works	1	.6	-	-	-	-	-	-
Tinning of metals	-	-	-	-	-	-	-	-
Other industries	18	11.0	2	15.4	24	14.3	-	-

TABLE 3.—*Industrial origin of epitheliomatous ulceration, chrome ulceration, and anthrax*

Disease and industry	1936				1935			
	Cases		Deaths		Cases		Deaths	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Epitheliomatous ulceration	142	100.0	27	100.0	171	100.0	38	100.0
Pitch and tar:								
Tar distilling	42	29.6	4	14.8	48	28.1	3	7.9
Patent fuel works	31	21.8	-	-	27	15.8	2	5.3
Gas works	13	9.2	6	22.2	19	11.1	7	18.4
Other industries	7	4.9	2	7.4	7	4.1	3	7.9
Mineral oil:								
Cotton mule spinning	41	28.9	12	44.5	62	36.3	20	52.6
Other industries	5	3.5	3	11.1	5	2.9	1	2.6
Paraffin: Shale oil works	3	2.1	-	-	3	1.7	2	5.3
Chrome ulceration	84	100.0	-	-	67	100.0	-	-
Chromium plating	66	78.6	-	-	48	71.6	-	-
Chrome tanning	7	8.3	-	-	6	9.0	-	-
Dyeing and finishing	6	7.1	-	-	7	10.4	-	-
Manufacture of bichromates	1	1.2	-	-	-	-	-	-
Other industries	4	4.8	-	-	6	9.0	-	-
Anthrax	30	100.0	1	100.0	20	100.0	3	100.0
Wool	19	63.4	-	-	13	65.0	1	33.3
Hides and skins	9	30.0	1	100.0	5	25.0	1	33.3
Horsehair	1	3.3	-	-	-	-	-	-
Other industries	1	3.3	-	-	2	10.0	1	33.4

Epitheliomatous ulceration.—Table 3 shows, among other things, the industrial origin of epitheliomatous ulceration. In both years over half of these cases occurred in connection with tar distilling and cotton mule spinning, about half of the deaths occurring in both years in cotton mule spinning.

Chrome ulceration.—Eighty-four and 67 cases were reported in 1936 and 1935, respectively (table 3). In both years over 70 percent of the cases were accounted for by chromium plating.

Anthrax.—Over 60 percent of the cases in both years occurred in wool handlers (table 3). Handlers of hides and skins contributed 30 and 25 percent of the cases in 1936 and 1935, respectively.

The foregoing material, which relates to cases, is presented graphically in figures 1 and 2.

It is of interest to observe that in 1936 there were no reports in connection with the following: Mercury, carbon bisulphide, phosphorus, and manganese.

Other data.—The report includes data on reported cases of gassing. A total of 153 cases and 12 deaths was reported in 1936, as compared with 120 cases and 13 deaths during the preceding year. Over half of

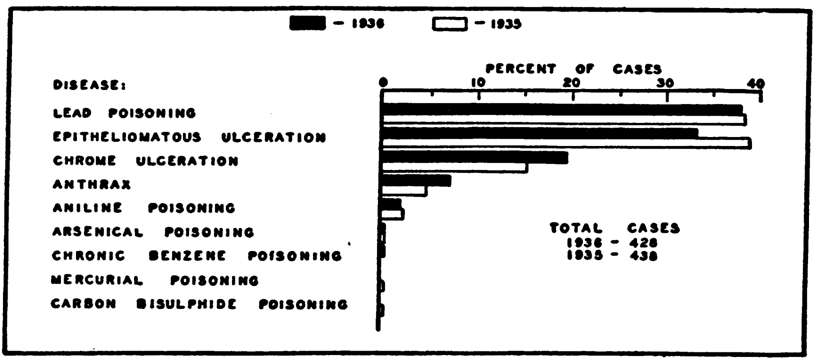

FIGURE 1.—Percentage distribution of cases of occupational diseases reported in 1936 under section 73 of the Factory and Workshop Act of 1901, and under section 3 of the Lead Paint Act, with comparative data for 1935.

the cases in both years were caused by carbon monoxide, particularly from blast-furnace gas. Each of the other causative agents, including, among others, trichlorethylene, nickel carbonyl, chlorine, nitrous fumes, and sulphuretted hydrogen, contributed less than 8 percent of the cases in both years.

Sixty-four deaths (50 in 1935) from silicosis and 62 (76 in 1935) from silicosis and tuberculosis were reported, together with 7 deaths (11 in 1935) from asbestosis and 4 (4 in 1935) from asbestosis and tuberculosis.

There were 1,771 (1,429 in 1935) voluntarily reported cases of dermatitis, the largest number occurring in both years among engineers (19 percent in 1936, 17 percent in 1935). The 3 most important

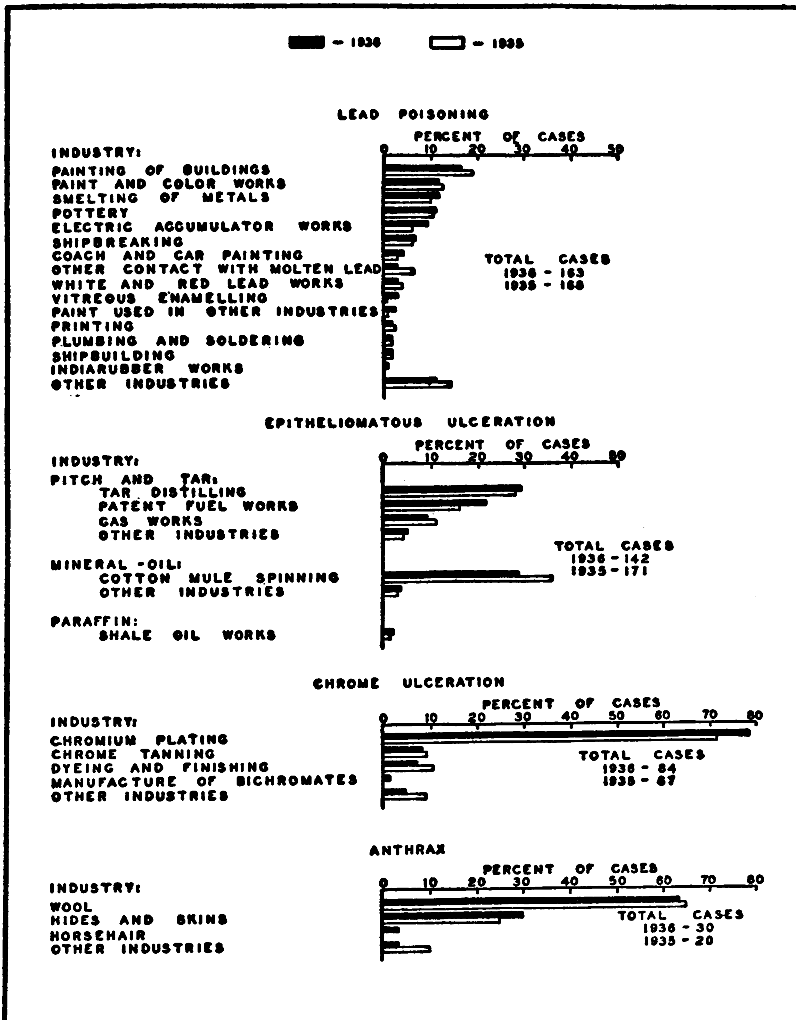

FIGURE 2.—Industrial origin, in 1936, of cases of lead poisoning, epitheliomatous ulceration, chrome ulceration, and anthrax, respectively, with comparative data for 1935.

agents responsible were oils, alkalis, and friction and heat, contributing in 1936 the following percentages of cases: 17, 15, and 11, respectively. In 1935 the corresponding figures were 15, 16, and 12.

REMOVAL OF FLUORIDE FROM WATER [1]

By Elias Elvove, *Senior Chemist, United States Public Health Service*

In considering the problem of the removal of fluoride from drinking water, it appeared desirable to find a substance the use of which would not leave in the water any element or group not ordinarily present in appreciable quantity; and which, likewise, would not impair the potability of the water by increasing any ordinary constituent to an undesirable concentration. Although the field from which to choose was thus narrowed, three substances [2] were found that appeared promising. These are tricalcium phosphate, magnesium oxide, and magnesium hydroxide.[3]

The results obtained with tricalcium phosphate and with magnesium hydroxide were qualitatively similar to those obtained with magnesium oxide. Since, however, the question of cost is very important, and since, at present, magnesium oxide appears as the least expensive,[4] experiments have been conducted mostly with this substance.

It seems reasonable to expect that different grades of commercial magnesium oxide would show different degrees of fluoride-removing power. Preliminary experiments indicated that this is actually the case; and while it appears probable that a magnesium oxide could be prepared for this special purpose which would have a fluoride-removing power considerably above that of the ordinary commercial grades, it is questionable whether from the point of view of cost, it might not be more economical to utilize a commercially inexpensive magnesium oxide even though its fluoride-removing power is, per given weight, relatively lower.

The results reported in this paper have been obtained with two different grades of magnesium oxide. The grade referred to as calcined magnesite was obtained from a business concern which uses it in the construction of cement floors. The other grade was a commercial sample of light magnesium oxide similar to that of the United States Pharmacopœia. In both cases, the magnesium oxides were used in the finely-divided condition as they are ordinarily sold.

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[1] From Division of Chemistry, National Institute of Health.

[2] Other substances have been reported in the literature; but since the present paper is intended as a brief note, it is not deemed necessary to discuss here the related literature on the subject. Some references to other published methods for the removal of fluoride from drinking water are, however, included in the list of references at the end of this paper.

[3] Scott, Kimberly, Van Horn, Ey, and Waring have reported (Am. Water Works Asso., January 1937, pp. 9-25) the reduction of the fluoride content of magnesium-containing waters by applying the ordinary lime softening treatment but over-treating with the lime to a causticity of about 2 grains per gallon.

A report describing methods for the removal of fluoride from water by means of tricalcium phosphate, magnesium oxide, or magnesium hydroxide, was forwarded by the writer to the Surgeon General on June 26, 1936, for consideration of the advisability of applying for letters patent, to protect the public interest and the right of any citizen of the United States to use these methods without payment of royalties.

[4] Calcined magnesite is quoted at about 3 cents per pound ($60 per ton) and tricalcium phosphate at 6.5 cents per pound in the March 1937 Market Report of Industrial and Engineering Chemistry. No comparable price on magnesium hydroxide is quoted. Light magnesium oxide complying with purity requirements of the United States Pharmacopoeia is quoted at 36 cents per pound.

One mode of operation may be illustrated by the following described experiments. The fluoride-containing water to be treated was introduced into tall bottles so as nearly to fill them to the beginning of the curved portion. The quantity of the magnesium oxide used corresponded to one ounce per gallon of water in each bottle. The magnesium oxide and water were then actively agitated, by means of a current of air, for about half an hour. After complete settling,[5] about three-fourths of the column of water was siphoned off, replaced by a fresh supply of the fluoride-containing water, and the process repeated.

The water used in these experiments was prepared by adding sufficient sodium fluoride to distilled water to make its fluoride content 5 parts per million. On the basis of quantitative epidemiological studies (*1*, *2*), such a fluoride concentration in a drinking water would be expected to produce a high incidence of mottled enamel when used continuously by children during the susceptible age period. The fluoride was estimated with the aid of the zirconium-alizarin reagent (*3*). The results obtained are summarized in the accompanying tables.

TABLE 1.—*Comparative results with a commercial calcined magnesite and a commercial light magnesium oxide*

Number of times the MgO was used in this series (A)	Fluoride (F) content before treatment (B)	Fluoride after treatment with the calcined magnesite (C)	Fluoride removed [1] (D)	Fluoride after treatment with the light magnesium oxide (E)	Fluoride removed (F)
	Parts per million				
1	5	0.2	4.8	0.2	4.8
2	5	.7	4.3	.4	4.6
3	5	.7	4.3	.6	4.4
4	5	1.7	3.3	.9	4.1
5	5	1.9	3.1	1.3	3.7
6	5	2.5	2.5	1.3	3.7
7	5	2.1	2.9	1.7	3.3
8	5	2.7	2.3	1.8	3.2
9	5	2.2	2.8	1.9	3.1
10	5	2.1	2.9	1.7	3.3
11	5	2.1	2.9	1.7	3.3
12	5	3.5	1.5	1.9	3.1
13	5	3.0	2.0	2.0	3.0
14	5	4.5	.5	2.3	2.7
15	5	4.0	1.0	2.2	2.8
16	5	4.2	.8	3.0	2.0
17	5	4.0	1.0	3.0	2.0

[1] Application of a similar procedure to a natural water showing about 419 p. p. m. of total solids, 58 SiO_2, 47 Ca, 45 Mg, 358 HCO_3, 48 SO_4, 2.8 NO_3, 10 Cl, and 3.5 p. p. m. of fluoride, reduced the fluoride content to 0.6, 0.6, and 0.9 p. p. m. in the first, second, and third runs, respectively.

[5] This usually required standing overnight.

TABLE 2.—*Results with a composite water after a second treatment, using a commercial calcined magnesite*

Number of times the MgO was used in this series (A)	Fluoride (F) content before any treatment (B)	Fluoride of the composite [1] sample after one treatment with 4-times-used calcined magnesite (table 1) (C)	Residual fluoride after a second treatment (with a fresh portion of the magnesite) (D)	Fluoride removed by first treatment (B−C) (E)	Fluoride removed by second treatment (C−D) (F)	Total fluoride removed by the two treatments (E+F) (G)
	Parts per million					
1	5	2.9	0.7	2.1	2.2	4.3
2			.6		2.3	4.4
3			1.1		1.8	3.9
4			1.0		1.9	4.0
5			.8		2.1	4.2
6			.8		2.1	4.2
7			.9		2.0	4.1
8			1.1		1.8	3.9
9			1.0		1.9	4.0
10			1.2		1.7	3.8
11			1.5		1.4	3.5
Average			1.0		1.9	4.0

[1] This composite represented a mixture of the water from runs 5 to 17 (table 1, column C).

TABLE 3.—*Results with a composite water after a second treatment, using a commercial light magnesium oxide*

Number of times the MgO was used in this series (A)	Fluoride (F) content before any treatment (B)	Fluoride of the composite [1] sample after one treatment with 5-times-used light magnesium oxide (table 1) (C)	Residual fluoride after a second treatment (with a fresh portion of the oxide) (D)	Fluoride removed by first treatment (B−C) (E)	Fluoride removed by second treatment (C−D) (F)	Total fluoride removed by the two treatments (E+F) (G)
	Parts per million					
1	5	2.1	0.6	2.9	1.5	4.4
2			.7		1.4	4.3
3			.7		1.4	4.3
4			.6		1.5	4.4
5			.7		1.4	4.3
6			.7		1.4	4.3
7			.6		1.5	4.4
8			.7		1.4	4.3
9			.6		1.5	4.4
10			.6		1.5	4.4
11			.9		1.3	4.1
Average			.7		1.4	4.3

[1] This composite represented a mixture of the water from runs 6 to 17 (table 1, column E).

Table 4.—*Showing the residual fluoride-removing power of the used calcined magnesites*

Number of times the 11-times-used calcined magnesite (table 2) was used in this series (A)	Fluoride (F) content before any treatment (B)	Fluoride content of the mixed water obtained from 25 subsequent runs with the 17-times-used calcined magnesite (table 1) (C)	Residual fluoride in (C) after treatment with the 11-times-used calcined magnesite (table 2) (D)	Average fluoride first removed by the 17-times-used calcined magnesite in 25 subsequent runs (B−C) (E)	Fluoride subsequently removed by the 11-times-used (table 2) calcined magnesite (C−D) (F)	Total fluoride removed in two treatments (by the 17-times-used and 11-times-used) calcined magnesites (E+F) (G)
	Parts per million					
1	5	4.2	2.8	0.8	1.9	2.7
2			2.2		2.0	2.8
3			2.3		1.9	2.7
4			2.2		2.0	2.8
5			2.7		1.5	2.3
6			3.1		1.1	1.9
7			2.8		1.4	2.2
8			3.1		1.1	1.9
9			3.2		1.0	1.8
10			3.0		1.2	2.0
Average			2.7		1.5	2.3

Table 5.—*Showing the residual fluoride-removing power of the used light magnesium oxides*

Number of times the 11-times-used light magnesium oxide (table 3) was used in this series (A)	Fluoride (F) content before any treatment (B)	Fluoride content of the mixed water obtained from 25 subsequent runs with the 17-times-used light magnesium oxide (table 1) (C)	Residual fluoride in (C) after treatment with the 11-times-used light magnesium oxide (table 3) (D)	Average fluoride first removed by the 17-times-used light magnesium oxide in 25 subsequent runs (B−C) (E)	Fluoride subsequently removed by the 11-times-used (table 3) light magnesium oxide (C−D) (F)	Total fluoride removed in two treatments (by the 17-times-used and 11-times-used) light magnesium oxides (E+F) (G)
	Parts per million					
1	5	3.2	1.1	1.8	2.1	3.9
2			1.1		2.1	3.9
3			1.0		2.2	4.0
4			1.0		2.2	4.0
5			1.1		2.1	3.9
6			1.4		1.8	3.6
7			1.7		1.5	3.3
8			2.0		1.2	3.0
9			1.5		1.7	3.5
10						
11			1.0		2.2	4.0
Average			1.3		1.9	3.7

Since the cost of treatment would probably vary with different localities, with the varying cost of the magnesium oxide, with the varying composition of the dissolved solids in the water, the cost of possible methods of reactivation, or the reduction of the original cost by utilizing the magnesium oxide for other purposes after its use for fluoride removal, we can consider this question at present only partially [6] and in general terms. We may, however, consider particularly the important factor of the efficiency of a given specimen of the magnesium oxide as a fluoride-remover. If we take the gallon and pound as the units for our calculations, we may summarize the above results as follows:

Table 1 shows that, in the case of the calcined magnesite, the fluoride removal in the first three runs was 4.3 to 4.8 parts per million, yielding water with residual fluoride of less than 1 p. p. m. (0.2 to 0.7); but if the waters were mixed, that from the fourth run could be added and the composite sample would still show less than 1 p. p. m. (0.8). In the case of the light magnesium oxide, the first four runs yielded water with residual fluoride of less than 1 p. p. m. (0.2 to 0.9); but if the waters were mixed, those from the fifth, sixth, and seventh runs could be added and the composite sample would still show less than 1 p. p. m. (0.9). The fifth to the seventeenth runs, in the case of the calcined magnesite, yielded a composite sample that showed a fluoride removal of about 2.1 p. p. m.; while in the case of the light magnesium oxide, the sixth to the seventeenth runs yielded a composite water that showed a fluoride removal of about 2.9 p. p. m. Using a composite water which had received one treatment, the residual fluoride in the mixture obtained from 11 runs with a second portion of magnesium oxide (tables 2 and 3) was reduced to about 1 p. p. m. or less (about 1 in the case of the calcined magnesite and 0.7 in the case of the light magnesium oxide).

The fluoride-removing power of the magnesium oxides, however, was not yet completely exhausted. In the subsequent 25 runs with the magnesium oxide that had already been used in 17 runs (table 1), there was a further removal of fluoride, corresponding to an average of about 0.8 p. p. m. in the case of the calcined magnesite and to about 1.8 p. p. m. in the case of the light magnesium oxide; and when about two-fifths of each of these waters were then treated a second time with magnesium oxide that had already been used in 11 runs (tables 2 and 3), there was a further average reduction of about 1.5 p. p. m., or a total fluoride removal of about 2.3 p. p. m. in the case of the calcined magnesite (table 4). In the case of the light magnesium oxide, the corresponding figures were about 1.9 and 3.7 p. p. m., respectively (table 5).

[6] The treatment with magnesium oxide leaves a slight caustic alkalinity which would have to be neutralized (with carbon dioxide). This, therefore, is another item of expense to be considered.

If we do not consider the indicated residual fluoride-removing power of the used magnesium oxides (tables 4 and 5) and limit our calculations to the quantities of water in which the fluoride was reduced from 5 to about 1 p. p. m. in not exceeding two treatments (tables 1, 2, and 3), the above results show that, when the operation was carried out on a basis of 1 ounce of the magnesium oxide per gallon of water in the treatment container, the two treatments (using a total of 2 ounces per gallon) were effective in reducing the fluoride to not exceeding about 1 p. p. m. for a quantity of water corresponding to about 11 gallons [7] when using the calcined magnesite and to about 12 gallons when using the light magnesium oxide. On this basis, 1 pound of the calcined magnesite would serve to treat about 88 gallons and 1 pound of the light magnesium oxide would be sufficient to treat about 96 gallons of such water.

It is to be noted, however, that the above treatment has been applied to a fluoride concentration considerably higher than is ordinarily found in endemic areas (*4*). As indicated in tables 2 and 3, the cost of treatment would be lower when the fluoride concentration is less than 5 p. p. m. (a larger number of runs with the same magnesium oxide yielding water with a residual fluoride of not exceeding about 1 p. p. m. when starting with 2.1 or 2.9 instead of 5 p. p. m.).

As has been stated, the magnesium oxides used were utilized in the condition as sold for their ordinary uses. This eliminates an increase of cost on account of preparatory treatment. Besides using a chemical which is comparatively inexpensive to start with, it is believed that, in the case of the calcined magnesite particularly, since it is used extensively in building operations and for various other purposes, there is opportunity for realizing a salvage value for the material after its use as a fluoride-remover for drinking water, and thus indirectly reducing the cost of treatment. The comparatively small amount of fluoride [8] or other constitutents of the water that will have been

[7] These figures were derived as follows: In the case of the calcined magnesite, the mixed water from the first 4 runs (table 1, column C) did not require a second treatment; but since only ¾ of the column of water was siphoned off after each run, only the water of the first run may be considered as representing a whole gallon of treated water, while the water obtained from the 3 subsequent runs corresponded to only 2.25 gallons (0.75×3) of treated water. Similarly, the water from the first run of table 2 corresponded to a whole gallon, but the contribution of the subsequent 10 runs corresponded to only 7.5 gallons (0.75×10). The total quantity of water with a residual fluoride of not exceeding about 1 p. p. m., therefore, corresponded to 11.75 gallons ($1 + 2.25 + 1 + 7.5$), or about 11 gallons in round numbers.

Similarly in the case of the light magnesium oxide, the contribution of sufficiently treated water from the first 5 runs of table 1 represented 4 gallons ($1 + 3$); and the water from the second treatment (table 3) represented 8.5 gallons ($1 + 7.5$). The total in this case, therefore, corresponded to 12.5 gallons ($4 + 8.5$), or about 12 gallons in round numbers.

[8] In this connection, it may be interesting to note that Nagai and Takahara (*5*) have recently proposed the addition of small amounts of fluoride to portland cement raw mixtures for promoting combination. Likewise, Shaw and Shaw (*6*) have recommended as beneficial the presence of a small proportion of fluoride as magnesium silico-fluoride in the preparation of concretes, mortars, and plaster from medium or lightly burned dolomite.

adsorbed by or removed with the magnesium oxide probably would not interfere with its subsequent utilization.

SUMMARY

Results obtained indicate that fluoride can be removed from water with the aid of tricalcium phosphate, magnesium oxide, or magnesium hydroxide. Since the question of cost is very important, and since, at present, magnesium oxide appears to be the least expensive, experiments have been conducted mostly with this substance. Different grades of commercial magnesium oxide showed different degrees of fluoride-removing power. Although a commercial light magnesium oxide was found more efficient as a fluoride-remover, per given weight, than a commercial calcined magnesite, its greater efficiency was not proportional to its present higher cost. From the point of view of economical operation, much work remains to be done. It is pointed out, however, that in the case of the calcined magnesite particularly, since it is used extensively in building operations and for various other purposes, it may be possible to utilize the material after its availability for fluoride removal has been exhausted and thus indirectly reduce the cost of treatment. Such utilization would add another advantage to the advantages of its commercial availability in large quantities and comparatively low initial cost.

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NOTE ON A NEW OCULAR MICROMETER FOR USE IN DUST COUNTING

By Richard T. Page, *Assistant Public Health Engineer, United States Public Health Service*

The technique most commonly employed for determining the dust concentration in impinger samples of air is practically a duplication of the technique used by Whipple (*1*) for determining plankton concentration in drinking water. A portion of the sample is placed in a covered glass counting cell which is placed upon the stage of a microscope. Then the numbers of particles in several representative fields are counted. The counting cell must have a transparent base and cover, and the depth of the liquid being examined must be exactly established. A cell depth of 1 millimeter has been found convenient; consequently, the rectangular Sedgwick-Rafter cell, having a capacity of 1 cubic centimeter and a depth of 1 millimeter, is commonly used. In counting either dust particles or plankton, the whole depth of the cell is examined. This prohibits the use of a ruled counting cell and requires the use of an ocular micrometer that defines the area of the field.

The standard micrometer for this work has been the one designed by Whipple. It consists of a ruled square upon a thin glass disk which is placed upon the diaphragm of the ocular. The side of the large square on the Whipple micrometer is 7 mm. It is used with a combination of objective, ocular, and tube length of the microscope such that the area on the stage covered by the ocular micrometer is exactly 1 square millimeter. Consequently, with a cell 1 millimeter deep, the volume within the outlines of the ruled square is 1 cubic millimeter. For convenience in determining the size of the plankton organisms found, Whipple further subdivided the micrometer as shown in Figure 1–A. The large square is divided into 100 medium-sized squares and 1 of these in turn is further subdivided into 25 very small squares.

In making plankton counts, it is customary to count the whole field covered by the Whipple micrometer. In making dust counts (*2*), on the other hand, it is the practice to count the dust in only one-quarter of each ruled field. Only one of the three quadrants which do not contain the finely subdivided square is counted; the remaining three quadrants are unused and therefore unnecessary. To facilitate the counting of dust samples, a micrometer eyepiece was made according to the design shown in Figure 1–B. The ruled grid corresponding to one quadrant of the Whipple grid is located in the center of the visible field. The grid consists of an etched square 3.5 mm side measurement, divided into 25 small squares. Results obtained with this micrometer are identical with results obtained when counting one-fourth of the Whipple field. Both micrometer eyepieces are being used for dust counting by the Division of Industrial Hygiene of the United States Public Health Service.

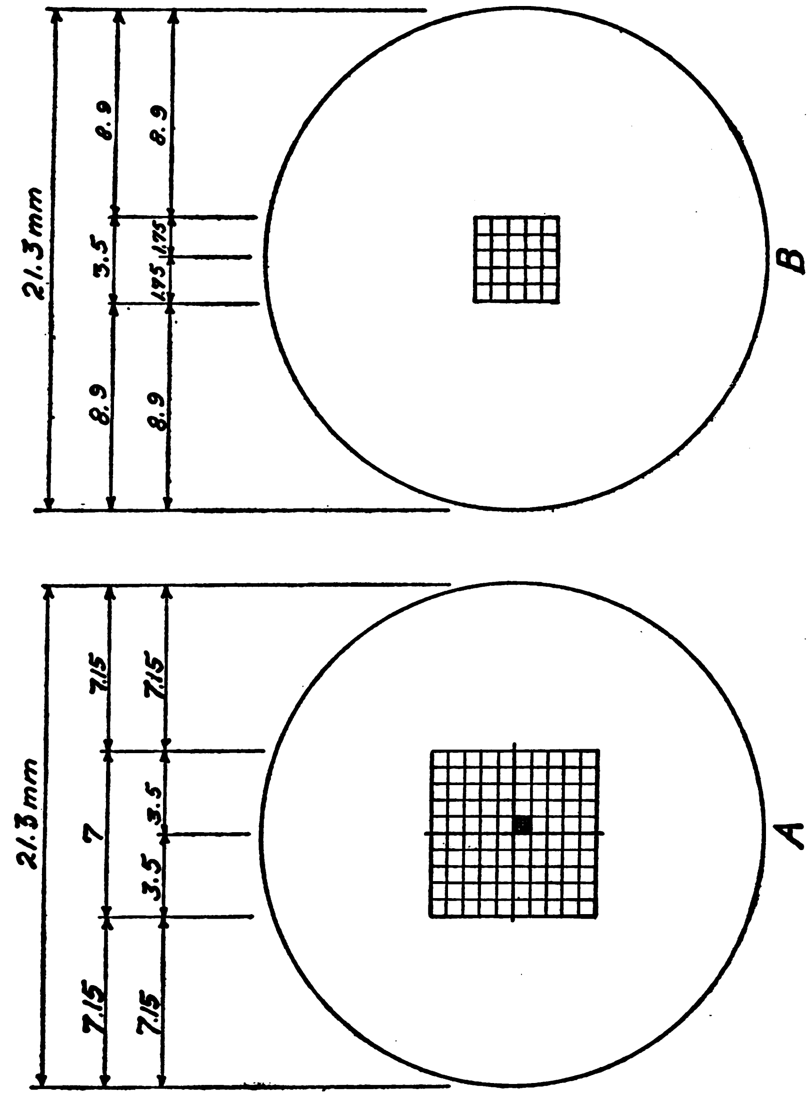

FIGURE 1.—(A) Whipple ocular micrometer. (B) Modified ocular micrometer.

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DEATHS DURING WEEK ENDED AUGUST 28, 1937

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

	Week ended Aug. 28, 1937	Corresponding week, 1936
Data from 86 large cities of the United States:		
Total deaths	7,140	7,345
Average for 3 prior years	7,027	
Total deaths, first 34 weeks of year	302,006	302,933
Deaths under 1 year of age	511	509
Average for 3 prior years	482	
Deaths under 1 year of age, first 34 weeks of year	19,360	19,075
Data from industrial insurance companies:		
Policies in force	69,724,311	68,313,576
Number of death claims	10,801	11,009
Death claims per 1,000 policies in force, annual rate	8.1	8.4
Death claims per 1,000 policies, first 34 weeks of year, annual rate	10.2	10.3

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Sept. 4, 1937, and Sept. 5, 1936

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936
New England States:								
Maine	1	1			2	3	0	0
New Hampshire	1						0	0
Vermont						2	0	0
Massachusetts	3	3			14	21	0	1
Rhode Island					1		0	0
Connecticut	3		1	3	1	6	0	0
Middle Atlantic States:								
New York	11	15		[1] 4	78	66	3	5
New Jersey	2	3		4	20	8	1	3
Pennsylvania	12	27			131	57	4	2
East North Central States:								
Ohio	8	4		2	38	5	1	0
Indiana	4	6	14	7	13	10	1	2
Illinois	15	20	6	3	44	2	3	3
Michigan	9	9	3		27	13	0	3
Wisconsin	2	4	10	2	33	8	2	1
West North Central States:								
Minnesota	1	5	1		6	4	1	1
Iowa	2	5			1	3	1	0
Missouri	8	13	83	8	10	2	1	1
North Dakota	1	2			2		0	0
South Dakota						10	1	0
Nebraska	1	6			2	1	0	0
Kansas	2	7		1	2	2	1	0
South Atlantic States:								
Delaware							0	0
Maryland [2,3]	6		2	2	6	13	0	0
District of Columbia	5	9		1	4	1	1	0
Virginia [4]	23	15			13	8	2	3
West Virginia	11	6	16	5	9	1	0	0
North Carolina [3,4]	44	38		2	24	7	2	0
South Carolina [3]	3	4	50	50	10	2	0	1
Georgia [3]	14	11					0	1
Florida [3]	12	8					1	1
East South Central States:								
Kentucky	19	12	1	5	18	17	4	2
Tennessee [3]	6	17	6	6	31	5	0	7
Alabama [3]	13	21	5	6	3		1	0
Mississippi [3]	7	19					0	0

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Sept. 4, 1937, and Sept. 5, 1936—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936
West South Central States:								
Arkansas	14	9	4	2	3		1	1
Louisiana	7	10	7	15			1	1
Oklahoma [5]	4	8	17	8		18	2	0
Texas [3]	36	28	76	31	8	8	2	2
Mountain States:								
Montana	1	1		4	7		0	0
Idaho	1	1				1	0	0
Wyoming						1	0	0
Colorado [4]	2	5			13	3	0	5
New Mexico	2	2		1	5	3	1	2
Arizona		2	7	14		1	0	1
Utah [3]	5		5		12	1	0	2
Pacific States:								
Washington		1		2	21	4	1	1
Oregon			14	10	4	4	0	0
California [3]	14	30	11	13	17	18	3	3
Total	335	387	339	211	633	339	42	55
First 35 weeks of year	14,417	15,489	275,124	140,518	242,553	268,099	4,292	5,993

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936
New England States:								
Maine	19	1	4	4	0	0	1	0
New Hampshire	4	0		3	0	0	0	0
Vermont	0	0	1	3	0	0	0	0
Massachusetts	44	1	12	38	0	0	4	5
Rhode Island	3	0	3	6	0	0	0	6
Connecticut	10	1	4	7	0	0	3	2
Middle Atlantic States:								
New York	52	20	72	88	0	0	28	30
New Jersey	10	1	13	11	0	0	5	27
Pennsylvania	19	5	66	76	0	0	39	38
East North Central States:								
Ohio	31	2	28	52	0	0	43	15
Indiana	11	1	28	14	0	0	8	8
Illinois	106	30	77	84	1	3	22	25
Michigan	34	5	96	40	0	0	17	10
Wisconsin	23	1	37	46	1	1	3	2
West North Central States:								
Minnesota	18	0	14	12	2	0	0	2
Iowa	16	3	13	16	4	4	5	1
Missouri	25	2	24	13	1	0	36	47
North Dakota	3	0	4	5	1	2	3	2
South Dakota	5	2	6	13	3	0	2	1
Nebraska	19	1	5	3	0	0	1	0
Kansas	14	0	23	17	0	0	5	11
South Atlantic States:								
Delaware	0	0			0	0	0	1
Maryland [2 3]	6	1	11	15	0	0	17	11
District of Columbia	4	0	2	6	0	0	5	0
Virginia [4]	1	4	6	17	0	0	19	15
West Virginia	4	3	31	12	0	0	17	16
North Carolina [3 4]	8	1	22	27	0	0	16	25
South Carolina [3]	0	0	2	3	0	0	10	4
Georgia [3]	2	5	9	1	0	0	16	24
Florida [3]	2	2		4	0	0	4	5

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Sept. 4, 1937, and Sept. 5, 1936—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936	Week ended Sept. 4, 1937	Week ended Sept. 5, 1936
East South Central States:								
Kentucky	8	4	29	27	0	0	34	52
Tennessee [3]	2	22	10	21	0	0	13	25
Alabama [3]	5	5	10	13	2	0	12	12
Mississippi [2]	10	18	5	3	0	0	11	16
West South Central States:								
Arkansas	6	1	10	3	0	0	13	20
Louisiana	4	3	5	3	0	0	19	33
Oklahoma [5]	9	0	14	8	0	0	18	26
Texas [3]	36	1	24	24	1	0	65	27
Mountain States:								
Montana	3	1	10	16	11	3	2	7
Idaho	1	0	4	4	0	0	0	5
Wyoming	0	0	7	9	0	5	1	0
Colorado [4]	20	2	15	6	2	0	4	6
New Mexico	0	2		5	0	0	5	20
Arizona	1	0		1	0	0	3	0
Utah [2]	2	0	47	2	0	0	1	1
Pacific States:								
Washington	1	7	14	9	8	8	1	2
Oregon	2	0	5	11	1	2	8	5
California [3]	38	25	56	64	1	0	17	16
Total	641	183	878	865	34	28	556	606
First 35 weeks of year	4,695	1,801	166,580	180,424	8,080	6,004	9,374	8,500

[1] New York City only.
[2] Week ended earlier than Saturday.
[3] Typhus fever, week ended Sept. 4, 1937, 83 cases, as follows: Maryland 1; North Carolina, 3; South Carolina, 2; Georgia, 32; Florida, 6; Tennessee, 1; Alabama, 16; Texas, 21; California, 1.
[4] Rocky Mountain spotted fever, week ended Sept. 4, 1937, 6 cases, as follows: Virginia, 1; North Carolina, 4; Colorado, 1.
[5] Figures for 1936 are exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
June 1937										
Puerto Rico	2	36	65	748	134		1	1	0	57
July 1937										
Arizona	1	11	46	1	28		5	20	0	16
Hawaii Territory		14	5		262		0		0	0
Massachusetts	5	26		3	672		30	262	0	14
Puerto Rico		44	32	944	64		0		0	35
Tennessee	10	23	23	255	317	44	53	40	1	194
Washington	5	9	6		157		1	46	9	16
August 1937										
District of Columbia	11	30			18		8	9	0	15
Nebraska	1	1			7		55	8		2

Summary of Monthly Reports from States—Continued

	Cases
June 1937	
Puerto Rico:	
Chickenpox	23
Dysentery	16
Filariasis	1
Leprosy	1
Puerperal septicemia	2
Tetanus	6
Trachoma	1
Whooping cough	39
July 1937	
Anthrax:	
Massachusetts	1
Chickenpox:	
Arizona	5
Hawaiian Territory	40
Massachusetts	439
Puerto Rico	22
Tennessee	9
Washington	124
Dysentery:	
Arizona	75
Massachusetts (bacillary)	3
Puerto Rico	13
Tennessee (amoebic)	8
Tennessee (bacillary)	154
Encephalitis, epidemic or lethargic:	
Massachusetts	2
Tennessee	1
Washington	1
Filariasis:	
Puerto Rico	14
German measles:	
Arizona	3
Massachusetts	60
Tennessee	10
Washington	10
Hookworm disease:	
Hawaii Territory	1
Tennessee	6
Impetigo contagiosa:	
Hawaii Territory	15
Tennessee	6
Jaundice, infectious:	
Hawaii Territory	2
Lead poisoning:	
Massachusetts	2
Leprosy:	
Hawaii Territory	6
Puerto Rico	3
Mumps:	
Arizona	20
Hawaii Territory	20
Massachusetts	171
Puerto Rico	1
Tennessee	62
Washington	155
Ophthalmia neonatorum:	
Massachusetts	83
Puerto Rico	1
Tennessee	7
Paratyphoid fever:	
Hawaii Territory	1
Massachusetts	28
Tennessee	12
Puerperal septicemia:	
Puerto Rico	8
Tennessee	3
Rabies in animals:	
Massachusetts	29
Washington	19
Rocky Mountain spotted fever:	
Tennessee	2
Septic sore throat:	
Massachusetts	10
Tennessee	10
Washington	1
Tetanus:	
Hawaii Territory	3
Massachusetts	4
Puerto Rico	11
Tennessee	3
Tetanus, infantile:	
Puerto Rico	1
Trachoma:	
Arizona	29
Massachusetts	1
Tennessee	1
Trichinosis:	
Massachusetts	1
Tularaemia:	
Tennessee	2
Typhus fever:	
Hawaii Territory	3
Tennessee	3
Undulant fever:	
Arizona	8
Massachusetts	4
Tennessee	1
Vincent's infection:	
Tennessee	5
Whooping cough:	
Arizona	51
Hawaii Territory	5
Massachusetts	789
Puerto Rico	23
Tennessee	455
Washington	300
August 1937	
Anthrax:	
Nebraska	1
Chicken pox:	
District of Columbia	7
Nebraska	9
Encephalitis, epidemic or lethargic:	
Nebraska	2
Mumps:	
Nebraska	5
Rocky Mountain spotted fever:	
District of Columbia	1
Septic sore throat:	
Nebraska	8
Whooping cough:	
District of Columbia	36
Nebraska	42

PLAGUE INFECTION IN WASATCH COUNTY, UTAH, AND MADISON COUNTY, MONT.

Under date of September 2, 1937, plague infection was reported to have been demonstrated, by animal inoculation, in tissue from one ground squirrel (*Citellus armatus*) shot August 19 west of Strawberry Reservoir, 21 miles southeast of Heber, Wasatch County, Utah, and from 2 ground squirrels (*Citellus elegans*), separately, taken on August 20 and 23, 4½ and 5 miles southeast of Cameron, Madison County, Mont.

CASE OF SMALLPOX (VARIOLOID) ON VESSEL AT HONOLULU, T. H.

Report has been received that a case of smallpox (varioloid) occurred in a steerage passenger on the British S. S. *Empress of Asia*, which arrived at Honolulu on September 5. The case was recognized by the ship's surgeon 2 days before the vessel arrived. The patient was taken to the ship's hospital and all third-class passengers and crew contacts were vaccinated. Those failing to show an immune reaction were detained at quarantine, while those showing such reaction were released.

WEEKLY REPORTS FROM CITIES

City reports for week ended Aug. 28, 1937

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

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Data for 90 cities:											
5-year average	119	54	13	187	278	269	3	353	109	1,019	--------
Current week [1]	52	23	8	249	270	206	1	331	51	1,088	--------
Maine:											
Portland	0	------	0	0	0	1	0	1	1	4	16
New Hampshire:											
Concord	0	------	0	1	0	0	0	0	0	0	4
Nashua	0	------	--------	0	-------	0	0	-------	0	0	7
Vermont:											
Barre	0	------	0	0	1	0	0	0	0	0	4
Burlington	0	------	0	0	0	0	0	0	1	0	7
Rutland	0	------	0	0	0	0	0	0	0	0	6
Massachusetts:											
Boston	0	------	0	3	5	9	0	12	1	28	176
Fall River	0	------	0	1	1	1	0	0	0	22	24
Springfield	0	------	0	0	0	0	0	0	1	14	28
Worcester	0	------	0	0	1	0	0	3	0	3	50
Rhode Island:											
Pawtucket	0	------	0	0	0	0	0	0	0	0	9
Providence	0	------	0	5	2	6	0	2	0	11	51
Connecticut:											
Bridgeport	0	------	0	0	1	0	0	0	0	0	29
Hartford	0	------	0	0	2	0	0	0	0	6	33
New Haven	0	------	0	6	2	1	0	0	0	3	40
New York:											
Buffalo	0	------	1	2	4	1	0	2	0	15	119
New York	8	2	2	35	64	12	0	69	8	--------	1,186
Rochester	0	1	0	2	5	1	0	2	0	9	62
Syracuse	0	------	0	0	2	1	0	0	0	15	40
New Jersey:											
Camden	0	------	0	0	0	0	0	0	1	1	38
Newark	0	1	0	3	1	2	0	3	0	13	76
Trenton	0	------	0	5	1	2	0	1	1	1	42
Pennsylvania:											
Philadelphia	2	------	0	3	10	8	0	26	7	28	446
Pittsburgh	1	------	0	17	8	5	0	9	3	44	127
Reading	0	------	0	1	1	1	0	0	0	4	21
Scranton	0	------	--------	0	-------	0	0	-------	0	6	--------
Ohio:											
Cincinnati	0	------	1	0	7	3	0	7	2	22	113
Cleveland	0	2	0	18	8	13	0	12	1	51	175
Columbus	0	------	0	1	1	1	0	2	0	11	75
Toledo	0	------	0	1	3	3	0	4	7	14	74
Indiana:											
Anderson	0	------	0	1	0	0	0	0	0	6	6
Fort Wayne	0	------	0	0	1	0	0	1	0	3	30
Indianapolis	0	------	0	2	3	0	0	5	0	17	89
Muncie	0	------	0	1	0	1	0	1	0	0	7
South Bend	0	------	0	0	2	2	0	2	0	0	18
Terre Haute	0	------	0	0	0	0	0	0	0	0	19
Illinois:											
Alton	0	------	0	2	0	0	0	0	0	1	11
Chicago	11	2	1	39	11	18	0	39	1	73	542
Elgin	0	------	0	0	1	0	0	0	0	0	7
Moline	0	------	0	0	0	0	0	0	0	6	12
Springfield	0	------	0	0	3	0	0	0	0	1	19
Michigan:											
Detroit	2	3	0	12	3	20	0	14	4	108	234
Flint	0	------	0	0	1	3	0	1	2	2	29
Grand Rapids	0	------	0	7	1	2	0	0	0	8	26

[1] Figures for St. Joseph, Raleigh, Atlanta, and Great Falls estimated; reports not received.

City reports for week ended Aug. 28, 1937—Continued

State and city	Diphtheria cases	Influenza Cases	Influenza Deaths	Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
Wisconsin:											
Kenosha	0		0	1	0	0	0	0	0	5	7
Madison	0		0	0	0	1	0	0	0	7	14
Milwaukee	0		0	11	0	1	0	2	0	50	74
Racine	0		0	3	0	2	0	0	0	1	12
Superior	0		0	3	0	0	0	0	0	2	5
Minnesota:											
Duluth	0		0	0	2	1	0	2	0	10	18
Minneapolis	0		0	1	1	11	0	2	0	12	84
St. Paul	0		0	1	4	1	0	2	0	14	43
Iowa:											
Cedar Rapids	0			0		1	0		0	0	
Davenport	0			0		0	0		0	0	
Des Moines	0			0	2	2	0		0	0	20
Sioux City	0			0		1	0		0	4	
Waterloo	0			0		0	0		0	0	
Missouri:											
Kansas City	0		0	2	2	6	0	2	1	1	81
St. Joseph											
St. Louis	1		0	13	1	12	1	8	2	8	216
North Dakota:											
Fargo	0		0	0	0	0	0	0	0	27	9
Grand Forks	0			0		0	0		0	2	
Minot	0		0	0	0	1	0	0	0	0	4
South Dakota:											
Aberdeen	0			0		0	0		0	0	
Sioux Falls	0		0	0	0	0	0	0	0	0	7
Nebraska:											
Omaha	0		0	2	1	3	0	1	0	1	41
Kansas:											
Lawrence	0		0	0	0	0	0	0	0	0	3
Topeka	0		0	0	1	1	0	0	1	11	17
Wichita	0		0	0	1	1	0	1	0	11	22
Delaware:											
Wilmington	0		0	0	1	0	0	2	0	1	27
Maryland:											
Baltimore	2	1	1	1	11	0	0	5	1	82	196
Cumberland	0		0	0	0	0	0	1	0	3	13
Frederick	0		0	0	0	0	0	0	0	0	7
District of Columbia:											
Washington	4		0	3	15	1	0	9	2	8	144
Virginia:											
Lynchburg	0		0	0	0	0	0	0	0	2	9
Norfolk	2		0	1	0	1	0	1	0	4	20
Richmond	1		0	1	2	0	0	5	0	0	45
Roanoke	0		0	0	1	0	0	0	0	0	11
West Virginia:											
Charleston	0	1	0	0	1	0	0	0	0	2	37
Huntington	1			0		1	0		0	0	
Wheeling	0		0	0	0	1	0	1	0	10	12
North Carolina:											
Gastonia	0			0		0	0		0	0	
Raleigh											
Wilmington	0		0	0	0	0	0	0	0	10	9
Winston-Salem	0		0	1	1	1	0	0	0	10	9
South Carolina:											
Charleston	0		0	0	2	0	0	0	1	0	22
Florence	0		0	0	0	1	0	0	0	0	17
Greenville	1		0	0	0	0	0	0	0	1	19
Georgia:											
Atlanta											
Brunswick	0		0	0	0	0	0	0	0	0	11
Savannah	0		0	0	0	0	0	0	1	0	19
Florida:											
Miami	0	1	0	8	1	0	0	1	0	0	24
Tampa	0		0	1	3	0	0	1	0	4	23
Kentucky:											
Covington	0		0	0	1	0	0	0	0	7	19
Lexington	0		0	0	0	0	0	0	0	5	24
Louisville	1		0	4	3	11	0	5	0	24	86

City reports for week ended Aug. 28, 1937—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Tennessee:											
Knoxville	1	1	0	0	0	0	0	0	2	0	27
Memphis	0	------	0	4	6	8	0	3	0	17	57
Nashville	0	------	0	0	2	1	0	0	0	7	33
Alabama:											
Birmingham	2	2	0	0	0	1	0	2	0	6	57
Mobile	0	------	1	0	1	0	0	1	0	0	25
Montgomery	1	------	--------	0	-------	0	0	-------	0	1	--------
Arkansas:											
Fort Smith	1	------	--------	0	-------	0	0	-------	0	0	--------
Little Rock	0	------	0	0	0	0	0	3	0	0	5
Louisiana:											
Lake Charles	0	------	0	0	0	0	0	0	0	0	2
New Orleans	3	2	1	0	7	0	0	9	0	18	140
Shreveport	0	------	0	0	0	1	0	3	2	0	22
Oklahoma:											
Oklahoma City	0	------	0	0	3	2	0	2	3	0	39
Tulsa	1	------	--------	2	-------	0	0	-------	1	2	--------
Texas:											
Dallas	0	------	0	1	2	0	0	7	1	9	47
Fort Worth	0	------	0	0	1	0	0	0	1	2	17
Galveston	0	------	0	0	0	1	0	1	1	0	16
Houston	3	------	0	0	7	0	0	6	0	0	80
San Antonio	0	------	0	0	3	0	0	6	1	1	66
Montana:											
Billings	0	------	0	0	0	0	0	0	0	1	4
Great Falls	-------	------	--------	-------	-------	-------	-------	-------	-------	-------	--------
Helena	0	------	0	0	0	0	0	0	0	0	2
Missoula	0	------	0	0	0	0	0	0	0	0	3
Idaho:											
Boise	0	------	0	1	0	0	0	0	0	1	5
Colorado:											
Colorado Springs	0	------	0	0	0	0	0	1	1	1	18
Denver	1	------	0	15	6	3	0	0	1	21	100
Pueblo	0	------	0	1	0	0	0	0	1	0	10
New Mexico:											
Albuquerque	1	------	0	0	1	0	0	3	0	4	21
Utah:											
Salt Lake City	0	------	0	8	0	4	0	1	0	1	37
Washington:											
Seattle	0	------	0	3	2	0	0	2	1	15	88
Spokane	0	------	0	1	1	1	0	0	0	3	21
Tacoma	0	------	0	0	3	2	0	0	0	7	33
Oregon:											
Portland	3	------	0	0	3	4	0	2	1	2	68
Salem	0	------	--------	0	-------	0	0	-------	0	0	--------
California:											
Los Angeles	5	4	0	5	9	13	0	10	0	57	298
Sacramento	0	------	0	0	3	0	0	1	1	17	31
San Francisco	0	------	0	0	5	0	0	2	0	36	151

City reports for week ended Aug. 28, 1937—Continued

State and city	Meningococcus meningitis		Polio-myelitis cases
	Cases	Deaths	
Vermont:			
Burlington	0	0	1
Massachusetts:			
Boston	0	0	25
Springfield	0	0	1
Worcester	0	1	0
Connecticut:			
Hartford	0	0	2
New York:			
Buffalo	1	0	9
New York	5	3	27
New Jersey:			
Newark	0	0	2
Pennsylvania:			
Philadelphia	0	0	5
Ohio:			
Cincinnati	0	0	9
Cleveland	1	0	8
Columbus	1	0	1
Toledo	0	0	2
Indiana:			
Fort Wayne	0	0	1
Muncie	0	0	2
South Bend	0	0	1
Illinois:			
Chicago	2	0	30
Michigan:			
Detroit	0	0	14
Grand Rapids	0	0	1
Wisconsin:			
Milwaukee	0	0	7
Minnesota:			
Minneapolis	1	0	6
Iowa:			
Des Moines	0	0	2
Sioux City	1	0	0
Missouri:			
Kansas City	0	0	10
St. Louis	0	0	6
Nebraska:			
Omaha	0	0	17
Kansas:			
Wichita	0	0	1
Maryland:			
Baltimore	0	0	5
District of Columbia:			
Washington	5	1	3
Virginia:			
Richmond	0	1	0
West Virginia:			
Charleston	0	0	1
Tennessee:			
Memphis	0	0	1
Alabama:			
Mobile	0	0	2
Arkansas:			
Little Rock	0	0	1
Louisiana:			
New Orleans	1	0	1
Texas:			
Dallas	0	0	1
Fort Worth	0	0	2
Colorado:			
Denver	1	0	1
Utah:			
Salt Lake City	0	0	1
California:			
Los Angeles	0	0	6
Sacramento	0	0	1

Dengue.—Cases: Fort Worth, 1.

Encephalitis, epidemic or lethargic.—Cases: Toledo, 2; Indianapolis, 1; St. Paul, 1; St. Louis, 38; Sacramento, 1.

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

Typhus fever.—Cases: Charleston, S. C., 3; Savannah, 5; Miami, 1; Memphis, 5; Montgomery, 3; Dallas, 1; Fort Worth, 1.

FOREIGN AND INSULAR

DENMARK

Notifiable diseases—April–June 1937.—During the months of April, May, and June 1937, cases of certain notifiable diseases were reported in Denmark as follows:

Disease	April	May	June	Disease	April	May	June
Cerebrospinal meningitis	4	5	7	Poliomyelitis	3	1	8
Chicken pox	50	20	23	Puerperal fever	16	22	14
Diphtheria	112	106	93	Scabies	1,032	722	738
Epidemic encephalitis	3	2	2	Scarlet fever	649	394	356
Erysipelas	249	176	210	Syphilis	58	60	59
German measles	145	105	68	Tetanus neonatorum	3	8	5
Gonorrhea	785	735	804	Tetanus, traumatic		1	1
Influenza	5,904	4,106	2,970	Typhoid fever	2	1	11
Malaria	3	9	8	Undulant fever (Bact. abort. Bang)	61	56	57
Measles	106	74	71	Weil's disease		3	2
Mumps	1,839	1,136	822	Whooping cough	1,422	948	1,041
Paradysentery	13	26	104				
Paratyphoid fever	7	4	21				

SCOTLAND

Vital statistics—1936.—Following are vital statistics for Scotland for the year 1936:

	Number	Rate per 1,000 population		Number	Rate per 1,000 population
Population	4,966,300		Maternal mortality	494	[1] 5.6
Births	88,928	17.91	Deaths from tuberculosis (all forms)		[2] 74
Deaths	66,749	13.44			
Infant mortality		[1] 82.3			

[1] Per 1,000 births.
[2] Per 100,000 population.

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

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for Aug. 27, 1937, pp. 1191–1205. A similar cumulative table will appear in the PUBLIC HEALTH REPORTS to be issued Sept. 24, 1937, and thereafter, at least for the time being, in the issue published on the last Friday of each month.

Cholera

China.—Cholera has been reported in China as follows: Week ended August 21, 1937, 4 cases in Swatow; week ended August 28, 1937, 8 cases in Shanghai.

Plague

Hawaii Territory—Island of Hawaii—Hamakua District—Hamakua Mill Sector.—A rat found August 19, 1937, in Hamakua Mill Sector, Hamakua District, Island of Hawaii, Hawaii Territory, has been proved plague infected.

United States.—A report of plague infection in Montana and Utah appears on page 1321 of this issue of PUBLIC HEALTH REPORTS.

Smallpox

Mexico.—Smallpox has been reported in Mexico for the month of June 1937, as follows: Guadalajara, Jalisco State, 1 case, 1 death; Mexico, D. F., 28 cases, 15 deaths; Queretaro, Queretaro State, 8 cases; San Luis Potosi, San Luis Potosi State, 1 case, 1 death.

Typhus Fever

Mexico.—During the month of June 1937, typhus fever was reported in Mexico as follows: Mexico, D. F., 14 cases, 5 deaths; Pachuca, Hidalgo State, 2 cases; Queretaro, Queretaro State, 2 cases.

Yellow Fever

Brazil—Matto Grosso State—Tres Lagoas.—On July 1, 1937, 1 death from yellow fever was reported in Tres Lagoas, Matto Grosso State, Brazil.

Nigeria.—Yellow fever has been reported in Nigeria as follows: August 21, 1 fatal case in Aba; August 28, 1 fatal case in Sapele.

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