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RATES OF PHYSICAL IMPAIRMENTS IN 28 OCCUPATIONS, BASED ON 17,294 MEDICAL EXAMINATIONS [1]

By ROLLO H. BRITTEN, *Senior Statistician, and* JENNIE C. GODDARD, *Junior Statistician, Office of Industrial Hygiene and Sanitation, United States Public Health Service*

In a recent paper analyzing certain phases of a tabulation of health examinations,[2] it was brought out that broad occupational groups of white, native-born, male life insurance policyholders showed marked differences in the rates of physical impairments. Of all the groups (agricultural, business, professional, and skilled trade), the one which, in general, presented the highest rates was "skilled trade." Such a finding made it desirable to study the rate of impairment in the specific occupations making up this group, and that is the purpose of the investigation reported in this paper. In order to make the comparisons as comprehensive in application as possible, there have been included a number of specific occupations which would not strictly fall within the definition of "skilled trade." Thus the study is based upon 28 occupations (with a total of 17,294 persons), instead of the 19 occupations used in the previous analysis.

In view of the fact that the general conditions of the investigation and the possible factors of selection involved were described in detail in the first paper in this series,[3] it is necessary at this point only to say that the data were taken from records of examinations which had been given to policyholders as a part of the welfare service of certain life-insurance companies, and were made by physicians cooperating with the Life Extension Institute. Such examinations are not to be confused with those made of applicants for insurance. All the persons included in the study had previously taken out life insurance. This is a factor of importance in considering the representativeness of the

[1] Studies in Diseases of Adult Life No. 6, from the Division of Research, Milbank Memorial Fund. This phase of the studies was carried out in cooperation with the Office of Industrial Hygiene and Sanitation, United States Public Health Service. The data were made available by the Medical Department of the Life Extension Institute.

[2] Studies in Diseases of Adult Life No. 4: Physical Impairments and Occupational Class. Differential Rates Based Upon Medical Examinations of 100,924 Native-born, Adult White Insured Males. By Edgar Sydenstricker and Rollo H. Britten. Pub. Health Rep., vol. 45, No. 34, Aug. 22, 1930. (Reprint No. 1404.)

[3] Studies in Diseases of Adult Life No. 1: General Results of a Statistical Study of Medical Examinations by the Life Extension Institute of 100,924 White Male Life Insurance Policyholders Since 1921. By Edgar Sydenstricker and Rollo H. Britten. Amer. Jour. Hyg., Vol. XI, No. 1, pp. 73-155, January, 1930.

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individuals included in the various occupations, because it is quite apparent that individuals who have purchased life insurance and have also taken the trouble to obtain a health examination are not typical of the general industrial worker. This fact is especially true of certain of the occupations which are made up largely of persons on the lower economic planes.

Women, foreign-born, and colored persons have been excluded from the study. The number of women in specific occupations was not sufficiently large to permit a determination of rates of physical impairment. It is not probable that the foreign-born or colored individuals who would be included in records of examinations of this character would be sufficiently representative to be used.

The examinations are of the periodic type, but for this analysis first examinations only have been considered.

In the paper dealing with broad occupational classes, it was found that the "skilled trade" group showed unusually high impairment rates for the following conditions: Defective vision, uncorrected; defective hearing; carious teeth; slightly infected gums; pyorrhea, definite; insufficient dentistry; frequent colds; bronchitis; organic valvular lesions of the heart; enlarged heart; arterial thickening; constipation; backache; insomnia; use of patent medicines; habitual use of laxatives; varicose veins; albumin in urine; and a tendency to rank high for a number of other conditions, such as sugar, pus, blood, and casts in the urine. The only condition in the "skilled trade" group showing a rate greatly below that of the other groups was defective vision, corrected, and this low rate means merely that a larger proportion of persons in the "skilled trade" group lets defects of vision go uncorrected.

The purpose of the present paper will be to determine in so far as possible whether specific occupational factors account for these higher rates.

The questions answered by the policyholder in his personal history were—"Occupation;" "Particular kind of work;" "Previous occupation." The physicians who were making the examinations were not concerned with the matter of occupation or the making of records for purely statistical purposes. It is impracticable, therefore, to make a rigorous classification according to industry and occupation, and each of the groups used must be regarded as more or less indefinite in nature. At the same time reference to the 28 occupations for which there were sufficient numbers to permit analysis will show that a fairly specific classification has been possible.

As was stated in previous papers, for the purposes of this series of studies the examinations have been divided into two groups, namely, those made in the "head" offices of the Institute (principally in New York, but later also in Chicago and Boston), and those made in

the "field" (all other localities in the United States and some in Canada). Considerable difference in the rates for the same impairment has been revealed by comparing the results in these two groups, but for the purposes of the present study it has generally been advisable to consider only the "field" examinations, because of the small numbers in the other group.

Very little information is available as to the inherent differences in individuals following specific occupations. One fundamental factor, however, lies in the age distribution of persons in this study. Table 1 presents the average age of persons in each occupation in the "field" and "head" offices, as well as the number of persons examined.

TABLE 1.—*Average age and number of workers in each occupation* [1]

Occupation	Average age in years		Number of persons	
	In field	At head office	In field	At head office
Total	37.8	37.1	17,294	3,293
Blacksmiths	43.6	45.8	172	17
Domestic help	42.2	38.8	188	41
Carpenters	41.8	42.3	1,673	153
Bricklayers	40.7	38.6	298	44
Painters	39.5	40.7	623	147
Firemen (stationary)	39.4	40.5	617	70
Tailors	39.3	39.4	1,053	486
Waiters and hotel servants	39.1	36.6	282	112
Butchers	38.8	38.5	564	132
Firemen, police	38.7	38.6	440	117
Barbers	38.7	38.8	721	95
Metal workers	38.6	37.4	347	40
Ironworkers	38.6	38.0	332	42
Foundry workers	38.6		173	5
Street-railway employees	38.5	35.9	287	20
Woodworkers	38.4	37.8	396	42
Plumbers, pipe and steam fitters	38.0	33.8	829	148
Miners	37.2		288	3
Shoe-factory operatives	37.1	36.2	532	62
Printers	36.9	36.3	977	232
Textile mill operators	36.7	37.7	207	24
Machinists (office, store)	36.4	36.6	3,070	265
Telephone and telegraph operators	36.4	34.9	410	42
Factory workers (unclassified, light)	36.1	35.2	611	104
Garment operatives	35.2	35.3	268	240
Chauffeurs	35.1	32.9	595	232
Cutters (cloth)	34.8	35.4	327	174
Electricians	34.2	32.8	1,014	199

[1] 20 to 59 years of age.

It will be noted that, in general, the average age does not differ widely, being from about 39 to 37 years for half of the occupations. However, a few groups show more marked differences. For instance, the average age of blacksmiths in the "field" data is 44 years and the average age of electricians 34 years. The effect which these distinctions in age have upon the impairment rates will be considered in the course of the paper.

It is difficult to interpret the differences in impairment rates for the various occupations, because the number of persons in each occupa-

tion varies greatly, ranging from 3,070 to 172 in the "field" data. It was also found that the rates of specified impairments varied widely in the different occupations, from about 40 per cent to about 1 per cent. Accordingly, a criterion was required in order to eliminate rates where the chance fluctuation was too great. To do this it was necessary to have an objective, arbitrary limit, independent of the opinion as to whether the rate in question was relatively high or low in comparison with other rates for the same impairment. Such a criterion could not be based entirely on the number of persons in the occupation, since even the occupations with relatively few could be used for the very common impairments; nor on number of cases of a particular condition, since the smaller the rate the fewer the cases required to establish significance. By reference to the actual probabilities involved, the following method was developed: If the number of individuals in a given occupation was too small to yield, at the median rate for all occupational groups, $50\sqrt{pq}$ cases, that occupation was omitted for that particular impairment.[4]

Although some of the individuals classed in the various occupations are more than 60 years of age, it was felt that a more precise indication of the rate of impairment among persons actually employed in industrial work would be obtained by limiting the study to individuals between 20 and 60 years of age, and this has been done throughout the discussion.

The basic data on which the analysis rests are given in Table 2. The data are limited to the "field." In the appendix will be found tables showing the number of cases for both "head" and "field."

[4] Here p represents the probability that the impairment would be found in the whole group (i. e., the rate reduced to a unity basis), and q the probability that it would not be found. It will be noticed that the product of these two probabilities becomes less as the rate decreases (i. e., from 50 per cent down). The constant 50 was chosen arbitrarily to give a criterion of 25 cases at an average impairment rate of 50 per cent, since the square root of one-half times one-half is one-half. This would require a population of 50 persons. If the average rate for an impairment is 10 per cent, then the square root of the two probabilities is 0.3, and 15 cases are required, or a population of 150. At 5 per cent we have 11 cases and a population of 220. At 3 per cent we have about 8 cases and a population of about 275. A graph was prepared from which these values were easily derived.

TABLE 2.—*Impairment rates by cause in each specific occupation, after application of criterion*

Nature of impairment, disease, or symptom	Miners	Ironworkers	Foundry workers	Blacksmiths	Metal workers	Woodworkers	Machinists (office, store)	Firemen (stationary)	Shoe factory operatives	Textile mill operators	Factory workers (unclassified, light)	Printers	Garment operatives	Tailors	Cutters (cloth)	Painters	Carpenters	Bricklayers	Plumbers, pipe and steam fitters	Electricians	Waiters and hotel servants	Domestic help	Chauffeurs	Barbers	Butchers	Street railway employees	Telephone and telegraph operators	Firemen, police
Respiratory:																												
Tuberculosis, actual or suspected	----	----	----	----	----	----	1.8	0.8	1.3	----	1.3	1.5	----	1.4	----	0.5	1.2	----	1.1	0.8	----	----	1.8	0.8	0.9	----	----	----
Lung pathology not suggestive of tuberculosis	6.6	4.2	----	----	4.6	5.1	3.2	3.4	4.1	----	4.6	5.4	6.3	7.1	7.3	5.8	4.2	3.4	3.7	4.2	6.0	----	4.2	3.5	5.7	4.5	5.4	1.8
Bronchitis, emphysema	----	----	----	----	----	1.3	1.2	1.6	1.7	----	2.0	1.6	----	3.2	----	1.3	1.8	----	2.1	1.8	----	----	1.0	1.2	2.8	----	1.5	1.8
Enlarged, diseased, or buried tonsils	25.7	25.3	26.6	22.1	28.0	26.8	25.5	24.6	24.1	24.2	29.0	32.0	48.5	35.6	35.8	29.4	24.6	25.2	28.9	30.3	32.3	26.6	30.9	27.2	28.4	26.8	27.6	25.9
Deflected septum—																												
Moderate or marked	1.0	4.5	----	----	4.9	5.1	3.5	3.7	3.2	----	4.6	4.0	4.9	4.1	3.7	5.5	4.6	3.0	5.2	3.9	4.3	----	5.7	1.8	4.3	5.9	3.4	4.1
Slight	24.0	24.7	19.1	22.1	23.3	22.5	22.7	24.5	19.9	21.3	23.9	28.5	36.7	30.8	31.2	26.0	23.9	22.1	23.5	25.7	28.0	19.1	31.3	24.6	24.5	24.4	23.7	26.6
Naso-pharyngitis	6.9	9.3	5.8	4.7	8.1	10.4	9.2	7.0	8.8	4.3	10.0	8.2	11.6	9.2	9.5	6.6	7.5	7.7	10.9	8.4	6.0	6.4	6.9	9.2	9.0	8.0	11.0	8.4
Hypertrophic rhinitis (enlarged turbinates)	14.2	19.9	19.1	19.8	21.3	22.7	18.2	19.0	15.4	16.9	20.6	20.8	37.7	28.4	32.1	21.5	20.4	17.1	21.1	19.6	21.3	17.6	28.9	18.7	20.0	21.6	20.2	19.5
Frequent colds	17.4	21.4	14.5	18.0	19.3	18.9	17.4	16.9	17.7	18.8	19.4	17.1	16.0	13.7	18.3	16.4	16.8	21.1	17.1	18.5	12.1	13.8	20.5	10.5	17.5	14.6	18.8	15.9
Digestive:																												
Teeth—																												
Carious teeth, septic roots	17.7	20.5	19.1	21.5	15.0	17.9	16.1	21.1	17.3	16.9	20.0	14.9	18.3	15.9	14.7	23.4	21.0	23.2	20.4	15.0	19.1	22.9	18.3	13.3	17.4	16.7	11.7	13.2
Heavy dentistry (X ray advised)	24.3	33.4	31.2	26.7	30.0	24.2	31.4	33.5	29.1	28.0	37.8	33.7	40.7	33.6	30.6	31.6	28.1	27.2	30.4	33.3	36.5	22.3	37.0	29.3	34.4	35.2	31.7	35.5
Missing teeth	7.3	7.2	----	----	6.1	6.1	7.1	8.1	7.5	5.8	8.2	7.9	7.5	7.1	10.1	8.3	9.9	8.1	7.4	7.3	6.0	9.6	7.4	4.0	5.9	8.4	5.6	7.3
Pyorrhea (definite)	7.3	7.8	----	----	5.8	5.8	6.3	9.4	6.8	5.3	6.1	5.2	9.0	8.3	4.9	11.1	9.3	7.0	8.0	4.5	9.9	6.4	6.1	7.2	7.3	10.1	6.1	4.8
Slightly infected gums	10.4	13.6	12.1	16.3	16.1	9.6	11.1	12.2	11.8	11.6	14.1	13.5	17.5	21.6	13.1	13.6	12.9	15.8	14.2	9.4	14.5	14.4	13.8	12.6	12.4	12.5	7.3	12.3

TABLE 2.—*Impairment rates by cause in each specific occupation, after application of criterion*—Continued

Nature of impairment, disease, or symptom	Miners	Ironworkers	Foundry workers	Blacksmiths	Metal workers	Woodworkers	Machinists (office, store)	Firemen (stationary)	Shoe factory operatives	Textile mill operators	Factory workers (unclassified, light)	Printers	Garment operatives	Tailors	Cutters (cloth)	Painters	Carpenters	Bricklayers	Plumbers, pipe and steam fitters	Electricians	Waiters and hotel servants	Domestic help	Chauffeurs	Barbers	Butchers	Street railway employees	Telephone and telegraph operators	Firemen, police
Digestive—Continued.																												
Other—																												
Gastric disturbances	4.9	7.8	5.2	9.9	8.6	8.8	7.1	11.2	8.5	9.7	8.8	8.1	6.0	8.6	7.0	7.2	7.1	7.7	9.8	8.7	8.9	8.5	7.6	9.0	6.2	12.2	10.0	6.8
"Acid stomach"	9.0	9.6	12.1	12.2	13.8	10.1	11.2	10.9	12.2	8.7	11.9	10.0	13.8	12.8	10.7	9.5	9.9	8.7	9.8	11.5	8.5	8.5	13.4	11.2	11.2	13.6	10.7	13.2
Constipation	28.8	35.8	34.1	29.1	35.2	38.4	34.0	34.0	32.1	33.3	37.0	36.1	48.1	42.2	40.1	37.4	30.4	35.6	32.7	36.4	37.6	36.2	31.8	38.1	33.7	39.4	39.3	38.9
Habitual use of laxatives	25.7	34.0	26.0	19.8	30.0	31.3	28.1	26.9	27.8	28.0	27.3	26.6	30.2	31.5	23.9	30.7	24.0	30.5	27.2	29.2	31.2	28.2	27.6	31.8	22.2	34.8	32.4	32.5
Hemorrhoids	8.3	12.7	9.8	12.2	14.7	9.6	9.8	11.5	11.3	10.6	8.7	10.4	13.4	12.1	13.8	14.1	13.1	12.8	12.8	10.6	12.1	8.0	8.4	11.6	11.5	10.5	11.0	12.3
Tenderness in region of appendix	2.1	3.9	-----	-----	2.9	4.5	3.7	3.2	4.7	-----	2.4	3.5	-----	1.6	3.1	2.6	3.2	3.4	2.7	2.8	4.3	-----	3.9	2.4	2.7	2.8	3.2	3.4
Circulatory:																												
Enlarged heart	-----	3.0	-----	-----	0	3.5	2.3	2.4	2.8	-----	2.1	1.8	-----	2.5	1.5	2.7	3.0	-----	2.7	2.0	-----	-----	1.7	2.6	3.0	-----	1.7	2.7
Organic valvular heart disease	1.4	3.6	-----	-----	2.9	4.3	3.4	3.1	2.3	-----	3.4	3.0	-----	2.7	3.1	1.8	2.7	4.0	2.8	2.9	-----	-----	2.7	2.1	4.3	4.9	2.9	2.5
Functional heart murmur	2.4	3.0	-----	-----	4.0	6.3	5.0	3.9	4.7	-----	5.4	5.0	7.1	5.0	5.2	5.5	4.5	4.7	5.3	5.2	4.3	-----	8.1	2.2	5.1	3.8	5.4	6.1
Arterial thickening—																												
Moderate or marked	-----	1.2	-----	-----	3.5	2.3	2.9	1.6	2.3	-----	2.0	2.7	-----	3.1	3.4	1.6	2.9	-----	3.1	1.5	-----	-----	2.0	1.7	2.5	-----	.5	1.8
Slight	4.2	9.0	5.2	7.0	9.8	7.3	8.2	9.6	5.5	9.7	9.7	9.0	13.4	12.5	8.3	11.2	10.6	11.4	10.7	8.0	12.1	9.0	9.7	6.4	10.1	8.7	5.6	8.6
Blood pressure—																												
20 and more millimeters above average	3.1	5.1	-----	-----	2.3	4.3	5.6	6.5	7.3	-----	6.7	4.8	5.6	6.4	4.9	7.5	5.2	5.4	4.7	4.6	10.6	-----	4.7	5.4	6.2	3.8	4.4	5.9
15 or more millimeters below average	10.1	13.3	12.7	12.2	13.8	13.6	12.5	11.7	13.5	13.5	10.8	12.7	14.6	16.4	15.6	14.8	15.1	14.8	13.0	12.8	15.2	12.2	11.1	14.5	13.1	14.6	14.4	10.2
Rapid pulse, over 90	1.7	5.1	-----	-----	4.0	6.3	5.1	3.9	7.0	-----	5.4	5.7	10.4	8.7	7.6	5.6	3.9	4.0	4.8	4.1	12.1	-----	6.4	5.0	8.0	2.8	5.6	4.1
Genito-urinary:																												
Albuminuria—																												
Moderate or marked	-----	-----	-----	-----	-----	2.4	2.1	2.1	2.3	-----	2.0	1.5	-----	1.7	-----	1.7	1.5	-----	2.7	2.0	-----	-----	1.4	1.5	2.5	-----	2.1	3.5
Slight	20.3	16.2	13.6	15.2	15.1	13.8	15.8	16.3	20.1	15.6	15.5	15.1	12.8	15.0	12.9	14.9	16.7	16.5	14.6	14.2	18.9	17.6	16.5	18.4	11.9	16.0	14.3	16.2

Granular casts in urine	6.8	6.1	-----	-----	4.5	6.8	6.1	6.9	6.6	4.5	4.6	5.4	1.9	5.0	4.6	6.9	4.9	6.0	4.0	6.2	6.8	-----	5.3	5.4	4.7	6.1	6.8	6.2
Hyaline casts in urine	12.7	9.7	11.4	11.3	8.1	8.6	9.3	8.9	12.3	9.0	8.4	9.3	7.0	10.4	7.3	9.5	8.8	12.3	7.4	9.9	10.6	13.9	9.4	9.6	10.0	9.9	9.6	9.2
Sugar in urine	6.4	3.9	-----	-----	6.3	7.8	4.8	7.0	6.5	-----	6.1	5.3	3.1	6.3	5.3	6.9	7.0	6.7	3.9	5.6	4.5	-----	4.4	4.2	6.1	6.9	5.2	4.9
Pus in urine	10.0	11.3	9.6	9.3	9.6	10.8	9.5	11.3	12.7	9.0	9.6	9.2	10.5	8.1	11.2	10.5	8.2	13.4	10.6	10.3	14.0	14.5	10.7	11.2	9.0	11.1	10.7	11.4
Enlarged prostate	3.8	3.3	-----	-----	4.0	3.8	3.3	5.3	3.4	-----	4.1	3.8	7.5	5.0	1.8	4.7	4.6	7.4	5.4	3.1	7.1	-----	3.7	4.4	4.1	4.9	6.1	3.9
Frequent or painful urination	10.8	7.8	12.7	5.8	11.2	8.8	7.6	10.0	8.3	10.1	9.0	8.8	8.6	6.2	6.4	10.4	8.4	9.4	7.4	7.2	8.2	5.9	10.7	8.9	6.7	12.5	10.5	7.5
Miscellaneous:																												
Defective vision—																												
Uncorrected	18.4	19.9	16.8	20.3	24.8	21.0	23.0	21.1	22.2	16.4	25.0	24.5	36.2	34.7	35.8	26.2	21.6	18.8	25.7	19.9	29.4	23.9	18.8	23.6	29.8	23.7	18.0	23.9
Corrected	10.4	17.8	17.9	22.7	19.0	21.2	17.2	21.1	20.9	23.7	16.4	28.2	16.8	20.8	17.1	17.0	18.4	17.8	15.1	18.5	17.7	22.3	14.3	23.4	20.8	21.3	25.9	16.1
Defective hearing	9.7	15.4	16.2	29.7	14.4	8.6	12.0	11.7	8.8	13.5	11.0	10.8	11.2	9.4	13.1	10.3	17.2	13.1	13.4	10.5	6.7	9.0	9.4	8.6	8.9	10.8	11.2	8.4
Wax in ears	7.3	12.7	9.2	8.1	11.2	9.6	10.7	11.2	6.4	8.7	11.9	11.9	12.3	10.3	8.9	10.0	10.6	11.4	10.0	10.0	10.3	7.4	11.6	6.4	9.9	9.8	9.3	10.9
Enlarged thyroid, simple goiter	-----	5.1	-----	-----	3.2	2.8	2.5	2.4	1.7	-----	2.9	3.3	-----	2.4	1.2	3.2	1.9	-----	2.4	2.3	-----	-----	1.2	1.9	2.7	-----	1.5	.9
Adenitis	3.5	2.7	-----	-----	2.6	2.5	4.1	2.3	1.7	-----	3.6	5.2	4.9	3.8	4.3	5.9	4.6	2.0	3.4	3.5	3.5	-----	4.0	2.5	3.7	4.2	2.0	3.2
Chronic skin affections	4.9	8.7	8.1	8.7	10.1	9.8	9.1	8.3	8.6	6.3	10.3	11.8	10.4	8.6	7.3	8.7	8.0	7.0	10.4	10.0	11.7	11.2	9.4	8.6	11.9	12.9	9.3	9.5
Hernia	1.4	3.0	-----	-----	3.7	5.6	5.1	5.0	3.9	-----	4.1	5.6	3.7	4.8	6.4	6.1	6.0	4.7	6.0	4.8	7.1	-----	6.2	7.8	7.6	5.2	2.9	1.8
Weak inguinal rings	3.8	5.4	-----	-----	4.9	3.8	4.5	4.5	4.3	-----	4.6	5.1	9.3	7.1	8.3	5.5	4.7	2.7	4.8	4.4	4.3	-----	5.4	5.4	6.9	3.8	2.2	4.5
Varicose veins	4.2	4.5	-----	-----	3.2	4.5	3.6	4.9	4.1	-----	3.3	3.3	3.0	4.1	2.1	5.8	4.8	5.0	2.8	2.6	6.4	-----	3.7	5.1	5.3	6.3	2.4	5.9
Varicocele	8.0	7.2	6.9	7.0	8.6	6.6	8.5	9.1	6.0	6.8	9.2	9.7	6.0	7.4	11.3	8.8	8.7	7.7	8.0	9.3	7.1	9.0	8.9	8.6	8.9	6.6	7.6	8.0
Flat feet	9.0	12.0	11.0	14.5	11.8	12.4	12.4	15.9	17.9	9.2	12.4	18.1	28.7	24.1	24.8	16.0	13.9	14.4	15.2	13.0	27.7	24.5	16.8	21.1	20.6	16.7	10.2	16.1
Spinal curvature	3.1	2.7	-----	-----	3.7	4.5	4.5	3.4	4.1	-----	3.6	4.0	3.7	4.2	2.1	3.2	4.0	4.0	4.3	2.9	3.5	-----	3.5	3.3	3.2	3.8	3.2	3.0
Backache	8.0	6.9	-----	-----	6.6	5.6	5.2	5.8	5.5	2.9	6.1	3.0	6.7	6.2	2.4	6.9	7.3	7.0	5.3	4.5	3.9	-----	4.7	3.7	5.7	3.8	5.1	3.9
Nervousness	4.5	6.0	-----	-----	7.5	7.1	6.5	6.0	6.8	4.8	8.2	7.8	10.1	6.9	8.0	6.7	5.4	6.7	7.2	6.1	5.7	6.9	6.0	8.5	7.8	5.2	8.5	5.2
Abnormal reflexes	5.9	8.4	-----	-----	3.8	6.0	5.3	5.1	5.7	6.2	5.8	4.6	7.9	5.7	4.0	6.7	6.3	6.1	4.9	4.7	6.1	-----	5.4	6.8	4.4	8.7	9.0	5.5
Dizziness	10.4	9.3	-----	-----	6.3	9.6	7.6	9.4	9.8	7.2	9.3	7.5	5.2	6.7	4.9	8.8	7.1	7.4	8.2	8.7	6.4	8.0	7.9	6.1	6.2	7.3	6.3	7.3
Insomnia	-----	-----	-----	-----	-----	-----	1.1	1.3	1.9	-----	1.5	1.5	-----	1.9	-----	1.6	1.1	-----	1.3	1.0	-----	-----	1.2	1.0	1.4	-----	-----	1.6
Headache	19.8	22.3	19.7	16.3	23.1	17.4	19.4	23.8	20.5	21.7	23.0	21.1	17.9	19.0	18.3	23.1	19.1	18.1	18.6	22.3	18.4	13.8	23.9	20.4	19.0	23.0	19.3	19.5
Use of patent medicine	10.4	9.6	8.1	6.4	12.4	8.6	11.6	9.9	8.8	10.6	7.6	11.8	6.7	9.8	8.3	9.0	8.5	8.7	9.6	11.1	12.1	11.2	9.1	11.1	7.8	7.0	7.6	10.7

In order to give a more precise expression of the differences in the rates of impairments in these occupations as a whole, compared with the population generally, the rank of the "business" group, in comparison with the 28 occupations, has been determined for each impairment. The rates for the "business" group, which is a very large one, are not particularly high or low, and so may be taken as typical of the examinations in general. It should be pointed out that the average age of workers in the trades represented in this study is about the same as that of persons in the "business" group.

The rank was determined prior to applying the criterion just discussed, in order to avoid having an unequal number of items in the different arrays. Table 3 gives also the "business" rate and the average occupational rate (median after applying criterion), with the ratio of the median rate to the "business" rate.

TABLE 3.—*Rank of "business" in comparison with the 28 occupations [1] for "field" data*

Nature of impairment, disease, or symptom	Rank [1]	Ratio of occupational to business rate (business=100)	Rate	
			Business	Occupational [2]
Carious teeth, septic roots	28	147	12.1	17.8
Pyorrhea (definite)	27	144	4.8	6.9
Slightly infected gums	26	125	10.4	13.0
Backache	26	149	3.7	5.5
Missing teeth	25	122	6.0	7.3
Albuminuria—slight	25	111	14.1	15.7
Habitual use of laxatives	24	109	25.8	28.1
Arterial thickening—slight	23	123	7.3	9.0
Frequent colds	23	117	14.9	17.4
Constipation	23	109	32.8	35.9
Pus in urine	23	112	9.4	10.5
Insomnia	22	130	1.0	1.3
Abnormal reflexes	22	112	5.2	5.8
Defective hearing	22	118	9.2	10.9
Dizziness	22	112	6.7	7.5
Bronchitis, emphysema	22	114	1.4	1.6
Casts, hyaline, in urine	22	109	8.8	9.6
Defective vision, uncorrected	21	116	20.1	23.3
Adenitis	20	125	2.8	3.5
Weak inguinal rings	20	109	4.3	4.7
Casts, granular, in urine	20	120	5.0	6.0
Lung pathology not suggestive of tuberculosis	20	121	3.9	4.6
Enlarged heart	19	119	2.1	2.5
Hernia	19	104	4.8	5.0
Frequent or painful urination	19	109	8.0	8.7
Wax in ears	19	104	9.6	10.0
Arterial thickening—moderate and marked	18	121	1.9	2.3
Gastric disturbances	18	109	7.8	8.5
Albuminuria—marked amount	18	111	1.8	2.0
Varicose veins	18	114	3.7	4.2
Tuberculosis—suspected or actual	18	109	1.1	1.2
Organic valvular heart conditions	18	104	2.8	2.9
"Acid stomach"	18	106	10.5	11.1
Deflected septum, marked	18	102	4.1	4.2
Tenderness in region of appendix	17	103	3.1	3.2
Functional murmur	16	102	4.9	5.0
Sugar in urine, trace or definite	15	102	5.7	5.8
High blood pressure (20 mm. and more above average)	14	96	5.5	5.3
Varicocele	14	99	8.1	8.0
Enlarged thyroid, simple goiter	13	100	2.4	2.4
Enlarged, diseased, or buried tonsils	13	98	27.6	27.0

[1] Prior to applying $50\sqrt{pq}$ criterion.

[2] Median rate after applying $50\sqrt{pq}$ criterion.

TABLE 3.—*Rank of "business" in comparison with the 28 occupations for "field" data*—Continued

Nature of impairment, disease, or symptom	Rank	Ratio of occupational to business rate (business=100)	Rate	
			Business	Occupational
Nasopharyngitis	13	98	8.5	8.3
Hemorrhoids	13	96	12.0	11.5
Hypertrophic rhinitis (enlarged turbinates)	12	97	20.7	20.1
Chronic skin affections	12	95	9.7	9.2
Nervousness	11	97	6.9	6.7
Use of patent medicines	11	96	10.0	9.6
Rapid pulse	11	88	6.0	5.3
Headache	10	92	21.3	19.6
Deflected septum, slight	10	97	25.0	24.2
Enlarged prostate	10	85	4.8	4.1
Heavy dentistry (X ray advised)	7	91	34.7	31.5
Low specific gravity	5	82	2.8	2.3
Low blood pressure (15 mm. or more below average)	2	85	15.7	13.4
Defective vision, corrected	1	62	29.6	18.4

It will be found that for carious teeth, for instance, the "business" group as a whole ranks twenty-eighth. This means that all but one of the 28 occupations under consideration had higher rates for carious teeth than the average rate for the "business" group. In other words, the impairments listed in the upper part of the table (down to rank 15) are those for which the rates among the industrially employed were above average. In the lower part of the table will be found the impairments for which the contrary was true.

A very clear impression is left by this table, i. e., that excessively high impairment rates in a few of these occupations which involve definite hazards are not sufficient to account for the generally higher rates which are found to be characteristic of the industrial workers as a whole when compared with the other persons analyzed. There are more than 10 findings and symptoms for which the rates in nearly every occupation are above the average for "business." In other words, one must come to the conclusion that where there is a marked difference in health and physical condition between these groups it is the result of various factors associated with social, educational, or economic causes.

For the purpose of an adequate comparison with the impairment rates of the "business" group, a ranking of the occupations according to the magnitude of the rates was desirable. For economy of space, comparison is limited to those occupations which had rates definitely above the "business" average for a given impairment. To determine this question, again, an arbitrary standard was required. A standard based directly on the probable error involved too much labor and was not considered satisfactory, since it would omit from consideration a large number of occupations which, on the average, were significantly

above the "business" level.[5] The method chosen was very simple and, if arbitrary, had the advantage of being purely objective. After exclusion of rates which did not meet the criterion of size of occupational groups, the remaining rates were ranked for each impairment according to magnitude. The "business" rate was then inserted in numerical order in this array. The occupations falling below the "business" rate were counted, and then the same number immediately above the "business" rate were eliminated, together with those below it. All higher than these were included in the table. This method, of course, was based on the assumption that in a chance distribution there will be as many items above the average as below it. Again it must be stressed that no definite implication is involved that all of the occupations remaining after this standard is applied are significantly high, or that none left out is significantly high; but that approximately the number of occupations included in the table are significantly above the "business" level.

In the case of several of the smaller occupational groups it is realized that the rates are somewhat uncertain. For the same reason there is a tendency for some of the occupations representing the smaller groups to appear at the top simply as a result of chance fluctuation. The rates at the top are to be taken as somewhat exaggerated. However, the general tendencies of the data appear to be unmistakable.

A careful consideration of Table 4 will indicate which occupations explain the excess among industrial workers as compared with the "business" average, but the impression to be derived will undoubtedly be that previously stated, viz, an excess for the industrial worker generally rather than outstandingly high rates for particular occupations. However, some differences for specific impairments are of interest.

For uncorrected defective vision, three occupations are outstanding—garment workers, cutters, and tailors. It may be remarked that the same is true when corrected and uncorrected vision are combined.

For defective hearing a very interesting result is found: The first six occupations in the list are those in which noise is a definite factor. This is particularly true for blacksmiths, who have a rate

[5] This point may be clearly explained by reference to a condition such as carious teeth. In that case 8 occupations showed rates in excess of that of "business" by more than four times the probable error; but, as a matter of fact, many of the others must have been significantly higher, because 27 occupations were above the "business" level and only 1 below. We can not say that all of those 27 were significantly higher, but we know that most of them were. In other words, if we think of the occupations as a series, rather than a single one, it becomes necessary to consider many which could not be shown by reference to the probable error to be significantly different. Moreover, the probable error ceases to have a precise meaning when the test is applied to 28 different items rather than one. For instance, in the case of the highest rate for a given impairment, we have selected a rate at one end of the distribution and are most likely dealing with a chance that would occur only once in twenty-eight times. A positive deviation of three times the probable error would be expected to occur from chance alone about once in twenty-eight times. Thus the precise meaning of the probable error is lost.

very much in excess of that in any other occupation, and nearly three times that of the "business" average.

For carious teeth and pyorrhea, painters have the highest rates, a fact which is possibly associated with lead poisoning.

For hernia, it is observable that none of the occupations requiring arduous labor is above the "business" level—an indication of the factor of selection which is present.

For constipation, it is observable that chiefly the sedentary occupations appear at the top of the table.

TABLE 4.—*Ranking of occupations which have rates significantly above those of the "business" group*

Occupation	Impairment rate	Ratio to average	Number of persons
RESPIRATORY			
Lung pathology not suggestive of tuberculosis:			
Cutters (cloth)	7.3	159	327
Tailors	7.1	154	1,053
Miners	6.6	143	288
Garment operatives	6.3	137	268
Waiters and hotel servants	6.0	130	282
Painters	5.8	126	623
Butchers	5.7	124	564
Printers	5.4	117	977
Telephone and telegraph operators	5.4	117	410
Woodworkers	5.1	111	396
Factory workers (unclassified, light)	4.6	100	611
Metal workers	4.6	100	347
Business	3.8	83	41,667
Bronchitis, emphysema:			
Tailors	3.2	200	1,053
Butchers	2.8	175	564
Plumbers, pipe and steam fitters	2.1	131	829
Factory workers (unclassified, light)	2.0	125	611
Firemen, police	1.8	113	440
Carpenters	1.8	113	1,673
Business	1.4	88	41,667
Deflected septum, moderate or marked:			
Street railway employees	5.9	140	287
Chauffeurs	5.7	136	595
Painters	5.5	131	623
Plumbers, pipe and steam fitters	5.2	124	829
Business	4.1	98	41,667
Frequent colds:			
Iron workers	21.4	123	332
Bricklayers	21.1	121	298
Chauffeurs	20.5	118	595
Factory workers (unclassified, light)	19.4	111	611
Metal workers	19.3	111	347
Woodworkers	18.9	109	396
Telephone and telegraph operators	18.8	108	410
Textile mill operators	18.8	108	207
Electricians	18.5	106	1,014
Cutters (cloth)	18.3	105	327
Blacksmiths	18.0	103	172
Shoe factory operatives	17.7	102	532
Butchers	17.5	101	564
Miners	17.4	100	288
Machinists (office, store)	17.4	100	3,070
Plumbers, pipe and steam fitters	17.1	98	829
Business	14.9	86	41,667
DIGESTIVE—TEETH			
Carious teeth, septic roots:			
Painters	23.4	131	623
Bricklayers	23.2	130	298
Domestic help	22.9	129	188
Blacksmiths	21.5	121	172
Firemen (stationary)	21.1	119	617
Carpenters	21.0	118	1,673
Ironworkers	20.5	115	332
Plumbers, pipe and steam fitters	20.4	115	829

TABLE 4.—*Ranking of occupations which have rates significantly above those of the "business" group*—Continued

Occupation	Impairment rate	Ratio to average	Number of persons
DIGESTIVE—TEETH—Continued			
Carious teeth, septic rooots—Continued.			
Factory workers (unclassified, light)	20.0	112	611
Waiters and hotel servants	19.1	107	282
Foundry workers	19.1	107	173
Garment operatives	18.3	103	268
Chauffeurs	18.3	103	595
Woodworkers	17.9	101	396
Miners	17.7	99	288
Butchers	17.4	98	564
Shoe-factory operatives	17.3	97	532
Textile-mill operators	16.9	95	207
Street-railway employees	16.7	94	287
Machinists (office, store)	16.1	90	3,070
Tailors	15.9	89	1,053
Electricians	15.0	84	1,014
Metal workers	15.0	84	347
Printers	14.9	84	977
Cutters (cloth)	14.7	83	327
Barbers	13.3	75	721
Business	12.1	68	41,667
Missing teeth:			
Cutters (cloth)	10.1	138	327
Carpenters	9.9	136	1,673
Domestic help	9.6	132	188
Street-railway employees	8.4	115	287
Painters	8.3	114	623
Factory workers (unclassified, light)	8.2	112	611
Firemen (stationary)	8.1	111	617
Bricklayers	8.1	111	298
Printers	7.9	108	977
Shoe factory operatives	7.5	103	532
Garment operatives	7.5	103	268
Plumbers, pipe and steam fitters	7.4	101	829
Chauffeurs	7.4	101	595
Electricians	7.3	100	1,014
Firemen, police	7.3	100	440
Miners	7.3	100	288
Ironworkers	7.2	99	332
Business	6.0	82	41,667
Pyorrhea (definite):			
Painters	11.1	161	623
Street-railway employees	10.1	146	287
Waiters and hotel servants	9.9	143	282
Firemen (stationary)	9.4	136	617
Carpenters	9.3	135	1,673
Garment operatives	9.0	130	268
Tailors	8.3	120	1,053
Plumbers, pipe and steam fitters	8.0	116	829
Ironworkers	7.8	113	332
Miners	7.3	106	288
Butchers	7.3	106	564
Barbers	7.2	104	721
Bricklayers	7.0	101	298
Shoe-factory operatives	6.8	99	532
Domestic help	6.4	93	188
Machinists (office, store)	6.3	91	3,070
Telephone and telegraph operators	6.1	88	410
Chauffeurs	6.1	88	595
Factory workers (unclassified, light)	6.1	88	611
Woodworkers	5.8	84	396
Metal workers	5.8	84	347
Textile-mill operators	5.3	77	207
Printers	5.2	75	977
Business	4.8	70	41,667
Slightly infected gums:			
Tailors	21.6	166	1,053
Garment operatives	17.5	135	268
Blacksmiths	16.3	125	172
Metal workers	16.1	124	347
Bricklayers	15.8	122	298
Waiters and hotel servants	14.5	112	282
Domestic help	14.4	111	188
Plumbers, pipe and steam fitters	14.2	109	829
Factory workers (unclassified, light)	14.1	108	611
Chauffeurs	13.8	106	595
Ironworkers	13.6	105	332
Painters	13.6	105	623
Printers	13.5	104	977
Cutters (cloth)	13.1	101	327

TABLE 4.—*Ranking of occupations which have rates significantly above those of the "business" group*—Continued

Occupation	Impairment rate	Ratio to average	Number of persons
DIGESTIVE—TEETH—Continued			
Slightly infected gums—Continued.			
Carpenters	12.9	99	1,673
Barbers	12.6	97	721
Street-railway employees	12.5	96	287
Butchers	12.4	95	564
Firemen, police	12.3	95	440
Firemen (stationary)	12.2	94	617
Foundry workers	12.1	93	173
Business	10.4	80	41,667
DIGESTIVE—OTHER			
Gastric disturbances:			
Street railway employees	12.2	144	287
Fireman (stationary)	11.2	132	617
Telephone and telegraph operators	10.0	118	410
Blacksmiths	9.9	116	172
Plumbers, pipe and steam fitters	9.8	115	829
Business	7.8	92	41,667
"Acid stomach":			
Metal workers	13.8	124	347
Garment operatives	13.8	124	268
Street railway employees	13.6	123	287
Chauffeurs	13.4	121	595
Firemen, police	13.2	119	440
Tailors	12.8	115	1,053
Business	10.5	95	41,667
Constipation:			
Garment operatives	48.1	134	268
Tailors	42.2	118	1,053
Cutters	40.1	112	327
Street railway employees	39.4	110	287
Telephone and telegraph operators	39.3	109	410
Firemen, police	38.9	108	440
Woodworkers	38.4	107	396
Barbers	38.1	106	721
Waiters and hotel servants	37.6	105	282
Painters	37.4	104	623
Factory workers (unclassified, light)	37.0	103	611
Electricians	36.4	101	1,014
Domestic help	36.2	101	188
Printers	36.1	101	977
Iron workers	35.8	100	332
Bricklayers	35.6	99	298
Business	32.8	91	41,667
Habitual use of laxatives:			
Street railway employees	34.8	124	287
Iron workers	34.0	121	332
Firemen, police	32.5	116	440
Telephone and telegraph operators	32.4	115	410
Barbers	31.8	113	721
Tailors	31.5	112	1,053
Woodworkers	31.3	111	396
Waiters and hotel servants	31.2	111	282
Painters	30.7	109	623
Bricklayers	30.5	109	298
Garment operatives	30.2	107	268
Metal workers	30.0	107	347
Electricians	29.2	104	1,014
Domestic help	28.2	100	188
Machinists (office, store)	28.1	100	3,070
Textile mill operators	28.0	100	207
Shoe factory operatives	27.8	99	532
Chauffeurs	27.6	98	595
Business	25.8	92	41,667
CIRCULATORY			
Enlarged heart:			
Woodworkers	3.5	140	396
Iron workers	3.0	120	332
Carpenters	3.0	120	1,673
Butchers	3.0	120	564
Shoe factory operatives	2.8	112	532
Firemen, police	2.7	108	440
Business	2.1	84	41,667

TABLE 4.—*Ranking of occupations which have rates significantly above those of the "business" group*—Continued

Occupation	Impairment rate	Ratio to average	Number of persons
CIRCULATORY—Continued			
Organic valvular heart disease:			
Street railway employees	4.9	169	287
Butchers	4.3	148	564
Woodworkers	4.3	148	396
Bricklayers	4.0	138	298
Iron workers	3.6	124	332
Business	2.8	97	41,667
Functional murmur:			
Chauffeurs	8.1	162	595
Garment operatives	7.1	142	268
Woodworkers	6.3	126	396
Firemen, police	6.1	122	440
Business	4.9	98	41,667
Arterial thickening, moderate or marked:			
Metal workers	3.5	152	347
Cutters (cloth)	3.4	148	327
Plumbers, pipe and steam fitters	3.1	135	829
Tailors	3.1	135	1,053
Carpenters	2.9	126	1,673
Business	1.9	83	41,667
Arterial thickening, slight:			
Garment operatives	13.4	149	268
Tailors	12.5	139	1,053
Waiters	12.1	134	282
Bricklayers	11.4	127	298
Painters	11.2	124	623
Plumbers, pipe and steam fitters	10.7	119	829
Carpenters	10.6	118	1,673
Butchers	10.1	112	564
Metal workers	9.8	109	347
Textile mill operators	9.7	108	207
Factory workers (unclassified, light)	9.7	108	611
Chauffeurs	9.7	108	595
Firemen (stationary)	9.6	107	617
Iron workers	9.0	100	332
Domestic help	9.0	100	188
Business	7.3	81	41,667
Rapid pulse, over 90:			
Waiters and hotel servants	12.1	228	282
Garment operatives	10.4	196	268
Tailors	8.7	164	1,053
Butchers	8.0	151	564
Cutters (cloth)	7.6	143	327
Shoe-factory operatives	7.0	132	532
Chauffeurs	6.4	121	595
Woodworkers	6.3	119	396
Business	6.0	113	41,667
GENITO-URINARY			
Granular casts in urine:			
Firemen (stationary)	6.9	115	582
Painters	6.9	115	582
Waiters and hotel servants	6.8	113	264
Telephone and telegraph operators	6.8	113	384
Miners	6.8	113	251
Woodworkers	6.8	113	370
Shoe-factory operatives	6.6	110	487
Firemen, police	6.2	103	402
Business	5.0	83	38,176
Hyaline casts in urine:			
Domestic help	13.9	145	165
Miners	12.7	132	251
Shoe-factory operatives	12.3	128	487
Bricklayers	12.3	128	284
Foundry workers	11.4	119	167
Blacksmiths	11.3	118	151
Waiters and hotel servants	10.6	110	264
Tailors	10.4	108	968
Butchers	10.0	104	512
Street-railway employees	9.9	103	262
Electricians	9.9	103	949
Ironworkers	9.7	101	309
Telephone and telegraph operators	9.6	100	384
Barbers	9.6	100	669
Painters	9.5	99	582
Business	8.8	92	38,176

TABLE 4.—*Ranking of occupations which have rates significantly above those of the "business" group*—Continued

Occupation	Impairment rate	Ratio to average	Number of persons
GENITO-URINARY—Continued			
Pus in urine:			
Domestic help	14.5	138	165
Waiters and hotel servants	14.0	133	264
Bricklayers	13.4	128	284
Shoe-factory operatives	12.7	121	487
Firemen, police	11.4	109	402
Ironworkers	11.3	108	309
Firemen (stationary)	11.3	108	582
Barbers	11.2	107	669
Cutters (cloth)	11.2	107	303
Street-railway employees	11.1	106	262
Woodworkers	10.8	103	370
Telephone and telegraph operators	10.7	102	384
Chauffeurs	10.7	102	552
Plumbers, pipe and steam fitters	10.6	101	752
Garment operatives	10.5	100	257
Painters	10.5	100	582
Business	9.4	90	38,176
Frequent or painful urination:			
Foundry workers	12.7	146	173
Street-railway employees	12.5	144	287
Metal workers	11.2	129	347
Miners	10.8	124	288
Chauffeurs	10.7	123	595
Telephone and telegraph operators	10.5	121	410
Painters	10.4	120	623
Textile-mill operators	10.1	116	207
Business	8.0	92	41,667
MISCELLANEOUS			
Defective vision, uncorrected:			
Garment operatives	36.2	155	268
Cutters (cloth)	35.8	154	327
Tailors	34.7	149	1,053
Butchers	29.8	128	564
Waiters and hotel servants	29.4	126	282
Painters	26.2	112	623
Plumbers, pipe and steam fitters	25.7	110	829
Factory workers (unclassified, light)	25.0	107	611
Metal workers	24.8	106	347
Printers	24.5	105	977
Firemen, police	23.9	103	440
Domestic help	23.9	103	188
Business	20.1	86	41,667
Defective hearing:			
Blacksmiths	29.7	272	172
Carpenters	17.2	158	1,673
Foundry workers	16.2	149	173
Ironworkers	15.4	141	332
Metal workers	14.4	132	347
Textile-mill operators	13.5	124	207
Plumbers, pipe and steam fitters	13.4	123	829
Bricklayers	13.1	120	298
Cutters (cloth)	13.1	120	327
Machinists (office, store)	12.0	110	3,070
Firemen (stationary)	11.7	107	617
Garment operatives	11.2	103	268
Telephone and telegraph operators	11.2	103	410
Factory workers (unclassified, light)	11.0	101	611
Business	9.2	84	41,667
Wax in ears:			
Ironworkers	12.7	127	332
Garment operatives	12.3	123	268
Printers	11.9	119	977
Factory workers (unclassified, light)	11.9	119	611
Chauffeurs	11.6	116	595
Bricklayers	11.4	114	298
Firemen (stationary)	11.2	112	617
Metal workers	11.2	112	347
Business	9.6	96	41,667
Adenitis:			
Painters	5.9	169	623
Printers	5.2	149	977
Garment operatives	4.9	140	268
Carpenters	4.6	131	1,673
Cutters (cloth)	4.3	123	327

TABLE 4.—*Ranking of occupations which have rates significantly above those of the "business" group*—Continued

Occupation	Impairment rate	Ratio to average	Number of persons
MISCELLANEOUS—Continued			
Adenitis—Continued.			
Street railway employees	4.2	120	287
Machinists (office, store)	4.1	117	3,070
Chauffeurs	4.0	114	595
Business	2.8	80	41,667
Hernia:			
Barbers	7.8	156	721
Butchers	7.6	152	564
Waiters and hotel servants	7.1	142	282
Cutters (cloth)	6.4	128	327
Business	4.8	96	41,667
Weak inguinal rings:			
Garment operatives	9.3	198	268
Cutters (cloth)	8.3	177	327
Tailors	7.1	151	1,053
Butchers	6.9	147	564
Painters	5.5	117	623
Iron workers	5.4	115	332
Barbers	5.4	115	721
Chauffeurs	5.4	115	595
Printers	5.1	109	977
Metal workers	4.9	104	347
Plumbers, pipe and steam fitters	4.8	102	829
Carpenters	4.7	100	1,673
Business	4.3	92	41,667
Varicose veins:			
Waiters and hotel servants	6.4	152	282
Street railway employees	6.3	150	287
Firemen, police	5.9	140	440
Painters	5.8	138	623
Butchers	5.3	126	564
Business	3.7	88	41,667
Backache:			
Miners	8.0	145	288
Carpenters	7.3	133	1,673
Bricklayers	7.0	127	298
Painters	6.9	125	623
Iron workers	6.9	125	332
Garment operatives	6.7	122	268
Metal workers	6.6	120	347
Tailors	6.2	113	1,053
Factory workers (unclassified, light)	6.1	111	611
Firemen (stationary)	5.8	105	617
Butchers	5.7	104	564
Woodworkers	5.6	102	396
Shoe factory operatives	5.5	100	532
Plumbers, pipe and steam fitters	5.3	96	829
Machinists (office, store)	5.2	95	3,070
Telephone and telegraph operators	5.1	93	410
Chauffeurs	4.7	85	595
Electricians	4.5	82	1,014
Business	3.7	67	41,667
Abnormal reflexes:			
Telephone and telegraph operators	9.0	155	410
Street railway employees	8.7	150	287
Iron workers	8.4	145	332
Garment operatives	7.9	136	268
Barbers	6.8	117	721
Painters	6.7	115	623
Carpenters	6.3	109	1,673
Textile mill operators	6.2	107	207
Waiters and hotel servants	6.1	105	282
Bricklayers	6.1	105	298
Woodworkers	6.0	104	396
Business	5.2	90	41,667
Dizziness:			
Miners	10.4	139	288
Shoe factory operatives	9.8	131	532
Woodworkers	9.6	128	396
Firemen (stationary)	9.4	125	617
Factory workers (unclassified, light)	9.3	124	611
Iron workers	9.3	124	332
Painters	8.8	117	623
Electricians	8.7	116	1,014
Plumbers, pipe and steam fitters	8.2	109	829
Domestic help	8.0	107	188
Chauffeurs	7.9	105	595
Business	6.7	89	41,667

For varicose veins, on the contrary, the occupations above the "business" level appear to be those of workers who are customarily on their feet.

Backache may not be a particularly important symptom, but it is of interest to note that the rate is highest among miners, who usually work in a stooping position, and also among other persons doing arduous work.

The rates for flat feet are not included, because data for the "business" group were not available for this condition. Reference to Table 2 will show, however, that the rates for certain occupations are excessive, particularly garment workers, waiters, cutters, domestic help, tailors, barbers, and butchers.

In addition to manifest variations in the prevalence of specific impairments in different occupations, there is the broader problem of possible differences in general physical condition as indicated by the impairment rates as a whole. Unfortunately such comparisons are difficult, because of the high frequency of relatively unimportant conditions. The total number of impairments per person is therefore of little meaning. It is equally impossible to select any group of serious impairments, since so much difference of opinion must exist in regard to any classification used, and since there is usually no information as to the seriousness of a condition as recorded for a particular individual. It seems preferable to make the comparison purely on the basis of an examination of the rates for individual conditions as given in Tables 2 and 3.

In this connection it is necessary to remember that there will be more variation in the rates for occupations with small populations, and therefore a larger percentage of such occupations will show high rates, quite apart from any true differences among the occupations. There will also be more relative variation in the rates for the less common conditions. Furthermore, any differences which may be found will be subject to much difficulty of interpretation, because of the pronounced effect of selection. Persons with certain impairments tend to drift into occupations where the impairment is not a definite handicap.

An examination of Tables 2 and 3 in the light of these comments gives the unmistakable impression that, aside from the few impairments considered above, the general level of prevalence is about the same for all of the occupations. This fact is again an indication that social, economic, or educational differences are mainly responsible for the variations in the prevalence of impairments noted in this and the preceding study. These distinctions are apparently common to all the occupational groups which have been analyzed. In the case of a few of the occupations, it is suggested that a tendency toward higher or lower rates than the average may reflect selection or the

presence of differing social or economic levels within the skilled trade group as a whole.

Generally speaking, the occupational groups included in this study were not large enough to permit an adequate analysis of the rates in specific age groups. A preliminary analysis brought out the fact that the age curve of the impairments for a particular occupation agrees quite closely with that for the occupations generally. It was also evident that the occupational differences brought out in the previous discussions are present at each age.

One element of the examination which has been given little consideration in this paper is the blood pressure. In preparing the punch cards the actual blood pressure of the individual was not recorded. Instead, his deviation in millimeters from a standard for persons of his age was punched in broad groups, viz, 25 and more millimeters under the average, 15 to 24 under, 14 under to 19 above, 20 to 39 above, 40 to 59 above, 60 and more above. It is desirable to determine from the resulting distribution of deviations what the average blood pressure is for each occupation. An estimated average [6] based on the frequency distribution of the deviations was secured for each occupation. Table 5 gives the averages obtained in this way for each of the 28 occupations, and for the "skilled trade" and "business" groups. It is found that the variation in these averages from occupation to occupation is remarkably slight. Domestic help has the highest average (129.2) and metal workers the lowest (125.2). The "business" average is lower than most of the individual occupations, but again the difference is slight.

TABLE 5.—*Average systolic blood pressure* [a] *(20–59) by occupation*

Occupation	Millimeters	Occupation	Millimeters
Domestic help	129.2	Plumbers, pipe and steam fitters	126.9
Blacksmiths	129.1	Garment operatives	126.9
Firemen, police	128.5	Barbers	126.9
Factory workers (unclassified, light)	128.5	Electricians	126.9
Waiters and hotel servants	128.5	Woodworkers	126.8
Firemen (stationary)	128.4	Bricklayers	126.7
Shoe factory operatives	128.1	Miners	126.7
Painters	127.9	Telephone and telegraph operators	126.6
Textile mill operators	127.9	Tailors	126.5
Chauffeurs	127.6	Cutters (cloth)	126.4
Machinists (office, store)	127.3	Carpenters	126.4
Butchers	127.2	Street-railway employees	126.0
Foundry workers	127.2	Metal workers	125.2
Iron workers	127.1	Skilled trade	127.3
Printers	127.0	Business	126.4

[a] Obtained as described in footnote 6.

[6] It is not possible to obtain a direct average of the deviations. However, if the distribution of deviations for a particular occupation is reduced to percentages, and these percentages are cumulated, it will be possible to determine the percentage of persons down to 15 millimeters below, and the percentage of persons up to 20 millimeters above. By plotting these two percentages on "probability" paper, connecting the two points with a straight line, and reading off the deviation at the point where this line crosses the 50 per cent line, it is possible to obtain an average deviation. If this deviation is then added algebraically to the standard which was originally subtracted in the case of each individual, an average blood pressure is obtained. It should be noted that this average more nearly approaches the median blood pressure than the arithmetic mean, but it seems quite adequate for our purposes.

For the larger occupations the same averages have been determined for three broad age groups. They are found to increase with age in the expected way, but the differences among the occupations are quite insignificant.

TABLE 6.—*Average systolic blood pressure* [1] *by age for 15 occupations*

Occupations	20–34	35–44	45–59
Firemen, police	123.7	127.7	136.2
Factory workers (unclassified, light)	126.0	125.1	135.3
Firemen (stationary)	125.3	127.0	133.9
Shoe-factory operatives	123.4	127.0	134.6
Painters	124.9	125.1	134.6
Chauffeurs	123.1	125.5	139.5
Machinists (office, store)	124.6	126.0	133.3
Butchers	124.1	126.1	131.0
Printers	124.5	124.0	133.5
Plumbers, pipe and steam fitters	123.1	125.4	133.4
Barbers	122.1	125.4	133.0
Electricians	123.6	125.1	134.0
Telephone and telegraph operators	123.6	123.4	132.1
Tailors	121.8	125.4	134.2
Carpenters	125.0	124.8	131.3
Skilled trade	123.9	125.7	132.7
Business	122.7	125.0	132.1

[1] Obtained as described in footnote 6, p. 18.

SUMMARY

In a previous study it was shown that the rates of physical impairment in a group of skilled workers tended to be definitely higher than in other groups (professional, business, agricultural). The present study was undertaken to determine, in so far as possible, whether the effects of specific occupational factors are sufficient to account for these higher rates. The data employed were the medical examinations furnished to white, native-born, male policyholders as a part of the health service of life-insurance companies. The examinations were conducted by the Life Extension Institute, and the analysis is limited to the first examinations made on each individual and to those made outside of the "head" offices of the Institute. In all, 17,294 persons in 28 specific occupations were included.

It was found that the higher rates characteristic of the industrial workers were not to be explained, except in a few instances, as being due to the hazard of any specific occupation. On the contrary, these higher rates seemed to be the result of various factors associated with social, educational, or economic causes, and to be present, in more or less degree, in every specific occupation studied. Differences among the industrial occupations did not appear to be of great moment, and when found seemed to reflect either selection (the tendency of workers with certain impairments to drift into occupations where such impairments would not serve as a handicap) or the presence within the industrial occupations themselves of social or economic differences.

APPENDIX TABLE 1.—*Number of impairments by cause in each specific occupation*

FIELD DATA

Nature of impairment, disease, or symptom	Miners	Ironworkers	Foundry workers	Blacksmiths	Metal workers	Woodworkers	Machinists (office, store)	Firemen (stationary)	Shoe factory operatives	Textile mill operators	Factory workers (unclassified, light)	Printers	Garment operatives	Tailors	Cutters (cloth)	Painters	Carpenters	Bricklayers	Plumbers, pipe and steam fitters	Electricians	Waiters and hotel servants	Domestic help	Chauffeurs	Barbers	Butchers	Street railway employees	Telephone and telegraph operators	Firemen, police
Respiratory:																												
Tuberculosis, actual or suspected	3	2	2	2	6	7	56	5	7	5	8	15	5	15	4	3	20	3	9	8	0	1	11	6	5	4	6	5
Lung pathology not suggestive of tuberculosis	19	14	8	6	16	20	99	21	22	5	28	53	17	75	24	36	70	10	31	43	17	7	25	25	32	13	22	8
Bronchitis, emphysema	4	5	3	6	8	5	38	10	9	2	12	16	6	34	7	8	30	7	17	18	2	3	6	9	16	5	6	8
Enlarged, diseased, or buried tonsils	74	84	46	38	97	106	784	152	128	50	177	313	130	375	117	183	411	75	240	307	91	50	184	196	160	77	113	114
Deflected septum—																												
Moderate or marked	8	15	8	8	17	20	106	23	17	8	28	39	13	43	12	34	77	9	43	40	12	8	34	13	24	17	14	18
Slight	69	82	33	38	81	89	697	151	106	44	146	278	98	324	102	162	400	66	195	280	79	36	186	177	138	70	97	117
Naso-pharyngitis	20	31	10	8	28	41	282	43	47	9	61	80	31	97	31	41	126	23	90	85	17	12	41	66	51	23	45	37
Hypertrophic rhinitis (enlarged turbinates)	41	66	33	34	74	90	558	117	82	35	126	203	101	299	105	134	341	51	175	199	60	33	172	135	113	62	83	86
Frequent colds	50	71	25	31	67	75	533	104	94	39	118	167	43	144	60	102	281	63	142	189	34	26	122	76	99	42	77	70
Digestive:																												
Teeth—																												
Carious teeth, septic roots	51	68	33	37	52	71	494	130	92	35	122	146	49	168	48	146	352	69	169	152	54	43	109	96	98	48	48	58
Heavy dentistry (X ray advised)	70	111	54	46	104	96	965	207	155	58	231	329	109	354	100	197	470	81	252	338	103	42	220	211	194	101	130	156
Missing teeth	21	24	12	13	21	24	218	50	40	12	50	77	20	75	33	52	166	24	61	74	17	18	44	29	33	24	23	32
Pyorrhea (definite)	21	26	19	14	20	23	193	58	36	11	37	51	24	87	16	69	156	21	66	46	28	12	36	52	41	29	25	21
Slightly infected gums	30	45	21	28	56	38	342	75	63	24	86	132	47	228	43	85	215	47	118	95	41	27	82	91	70	36	30	54

Other—																												
Gastric disturbances	14	26	9	17	30	35	217	69	45	20	54	79	16	91	23	45	119	23	81	68	25	16	45	65	35	35	41	30
"Acid stomach"	26	32	21	21	48	40	343	67	65	18	73	98	37	135	35	59	166	26	81	117	24	16	80	81	63	39	44	58
Constipation	83	119	59	50	122	152	1,043	210	171	69	226	353	129	445	131	233	509	103	271	369	105	68	189	275	190	113	161	171
Habitual use of laxatives	74	113	45	34	104	124	864	166	148	58	166	260	81	332	78	191	402	91	225	296	88	53	164	229	125	100	133	143
Hemorrhoids	24	42	17	21	51	38	301	71	60	22	53	102	36	127	45	83	220	33	103	108	34	15	50	84	65	30	45	54
Tenderness in region of appendix	6	13	7	6	10	18	115	20	25	4	14	34	11	17	10	16	53	10	22	28	12	4	23	17	15	8	13	15
Circulatory:																												
Enlarged heart	8	10	1	7	0	14	71	15	15	3	13	18	7	26	5	17	51	10	22	20	9	4	10	19	17	6	7	12
Organic valvular heart disease	4	12	4	4	10	17	104	19	12	8	21	29	8	28	10	11	45	12	23	29	13	9	16	15	24	14	12	11
Functional heart murmur	7	10	7	6	14	25	155	24	25	7	33	49	19	53	17	34	75	14	44	53	12	10	48	16	29	11	22	27
Arterial thickening—																												
Moderate or marked	3	4	6	6	12	9	88	10	12	3	12	26	4	33	11	10	48	15	26	15	12	8	12	12	14	4	2	8
Slight	12	30	9	12	34	29	252	59	29	20	59	88	36	132	27	70	177	34	89	81	34	17	58	46	57	25	23	38
Blood pressure—																												
20 and more millimeters above average	9	17	9	14	8	17	173	40	39	14	41	47	15	67	16	47	87	16	39	47	30	17	28	39	35	11	18	26
15 or more millimeters below average	29	44	22	21	48	54	385	72	72	28	66	124	39	173	51	92	252	44	108	130	43	23	66	105	74	42	59	45
Rapid pulse, over 90	5	17	4	6	14	25	156	24	37	15	33	56	28	92	25	35	66	12	40	42	34	16	38	30	45	8	23	18
Genito-urinary:																												
Albuminuria—																												
Moderate or marked	6	6	2	1	6	9	59	12	11	5	11	14	3	16	6	10	24	10	20	19	8	6	8	10	13	2	8	14
Slight	51	50	31	23	50	51	453	95	98	31	87	139	33	145	39	87	258	47	110	135	50	29	91	123	61	42	55	65
Granular casts in urine	17	19	17	9	15	25	174	40	32	9	26	50	5	48	14	40	76	17	30	59	18	11	29	36	24	16	26	25
Hyaline casts in urine	32	30	19	17	27	32	266	52	60	18	47	86	18	101	22	55	136	35	56	94	28	23	52	64	51	26	37	37
Sugar in urine	16	10	12	7	21	29	137	41	32	10	34	49	8	61	16	40	109	19	29	53	12	11	24	28	31	18	20	20
Pus in urine	25	35	16	14	32	40	273	66	62	18	54	85	27	78	34	61	127	33	80	98	37	24	59	75	46	29	41	46
Enlarged prostate	11	11	5	12	14	15	100	33	18	7	25	37	20	53	6	29	77	22	45	31	20	8	22	32	23	14	25	17
Frequent or painful urination	31	26	22	10	39	35	233	62	44	21	55	86	23	65	21	65	141	28	61	74	23	11	64	64	38	36	43	33
Miscellaneous:																												
Defective vision—																												
Uncorrected	53	66	29	35	86	83	707	130	118	34	153	239	97	365	117	163	362	53	213	202	83	45	112	170	168	68	74	105
Corrected	30	59	31	39	66	84	528	130	111	49	100	276	45	219	56	106	309	53	125	188	50	42	85	169	117	61	106	71
Defective hearing	28	51	28	51	50	34	367	72	47	28	67	105	30	99	43	64	288	39	111	106	19	17	56	62	50	31	46	37
Wax in ears	21	42	16	14	39	38	327	69	34	18	73	116	33	109	29	62	177	34	83	101	29	14	69	46	56	28	38	48

APPENDIX TABLE 1.—*Number of impairments by cause in each specific occupation*—Continued

Nature of impairment, disease, or symptom	Miners	Ironworkers	Foundry workers	Blacksmiths	Metal workers	Woodworkers	Machinists (office, store)	Firemen (stationary)	Shoe factory operatives	Textile mill operators	Factory workers (unclassified, light)	Printers	Garment operatives	Tailors	Cutters (cloth)	Painters	Carpenters	Bricklayers	Plumbers, pipe and steam fitters	Electricians	Waiters and hotel servants	Domestic help	Chauffeurs	Barbers	Butchers	Street railway employees	Telephone and telegraph operators	Firemen, police
Miscellaneous—Con.																												
Enlarged thyroid, simple goiter	7	17	3	6	11	11	77	15	9	4	18	32	11	25	4	20	32	4	20	23	10	3	7	14	15	11	6	4
Adenitis	10	9	7	3	9	10	126	14	9	7	22	51	13	40	14	37	77	6	28	36	10	6	24	18	21	12	8	14
Chronic skin affections	14	29	14	15	35	39	280	51	46	13	63	115	28	91	24	54	133	21	86	102	33	21	56	62	67	37	38	42
Hernia	4	10	8	14	13	22	158	31	21	10	25	55	10	51	21	38	100	14	50	49	20	12	37	56	43	15	12	8
Weak inguinal rings	11	18	8	3	17	15	137	28	23	7	28	50	25	75	27	34	78	8	40	45	12	7	32	39	39	11	9	20
Varicose veins	12	15	8	10	11	18	110	30	22	2	20	32	8	43	7	36	81	15	23	26	18	19	22	37	30	18	10	26
Varicocele	23	24	12	12	30	26	262	56	32	14	56	95	16	78	37	55	145	23	66	95	20	17	53	62	50	19	31	35
Flat feet	26	40	19	25	41	49	382	98	95	19	76	177	77	254	81	100	233	43	126	132	78	46	100	152	116	48	42	71
Spinal curvature	9	9	2	6	13	18	137	21	22	7	22	39	10	44	7	20	67	12	36	29	10	4	21	24	18	11	13	13
Backache	23	23	9	17	23	22	159	36	20	6	37	29	18	65	8	43	122	21	44	46	11	12	28	27	32	11	21	17
Nervousness	13	20	11	7	26	28	200	37	36	10	50	76	27	73	26	42	90	20	60	62	16	13	36	61	44	15	35	23
Abnormal reflexes	17	28	10	11	13	24	164	33	30	13	30	45	21	60	13	42	105	18	41	47	17	11	32	49	25	25	37	24
Dizziness	30	31	18	15	22	38	233	58	52	15	57	73	14	71	16	55	118	22	68	89	18	15	47	44	35	21	28	32
Insomnia	2	3	2	3	4	3	33	8	10	2	9	15	5	20	5	10	19	2	11	10	5	0	7	7	8	5	5	7
Headache	57	74	34	28	80	69	594	147	109	45	140	206	48	200	66	144	319	54	154	226	52	26	142	147	107	66	79	86
Use of patent medicine	30	32	14	11	43	34	356	61	47	22	46	115	18	103	27	56	142	26	80	113	34	21	54	80	55	20	31	47

APPENDIX TABLE 2.—*Number of impairments by cause in each specific occupation*

HEAD OFFICE DATA

Nature of impairment, disease, or symptom	Miners	Ironworkers	Foundry workers	Blacksmiths	Metal workers	Woodworkers	Machinists (office, store)	Firemen (stationary)	Shoe-factory operatives	Textile-mill operators	Factory workers (unclassified, light)	Printers	Garment operatives	Tailors	Cutters (cloth)	Painters	Carpenters	Bricklayers	Plumbers, pipe and steam fitters	Electricians	Waiters and hotel servants	Domestic help	Chauffeurs	Barbers	Butchers	Street railway employees	Telephone and telegraph operators	Firemen, police
Respiratory:																												
Tuberculosis, actual or suspected	0	2	0	0	1	2	3	1	0	0	0	7	6	7	1	5	4	0	2	3	0	4	2	1	2	0	1	1
Lung pathology not suggestive of tuberculosis	0	2	1	1	3	1	23	4	4	1	4	9	10	26	9	14	9	1	6	12	9	3	15	3	3	0	3	1
Bronchitis, emphysema	0	1	0	0	0	0	3	4	1	0	3	6	8	19	2	3	4	0	5	2	2	0	6	2	2	0	0	7
Enlarged, diseased, or buried tonsils	3	28	4	12	21	27	171	43	44	11	75	139	166	343	125	98	93	26	91	113	68	29	142	57	88	16	24	59
Deflected septum—																												
Moderate or marked	1	7	0	2	5	7	31	6	6	2	21	27	34	63	27	12	26	7	26	27	14	7	27	9	17	8	4	16
Slight	1	23	5	11	23	28	154	42	36	8	57	131	131	291	101	91	92	21	85	115	62	28	144	60	75	10	25	66
Naso-pharyngitis	0	4	1	0	3	3	20	4	2	0	11	21	27	45	21	9	10	3	12	8	9	2	21	8	6	2	5	8
Hypertrophic rhinitis (enlarged turbinates)	2	30	5	11	20	28	140	36	40	6	64	112	136	295	114	74	89	15	86	122	62	28	133	53	80	13	21	74
Frequent colds	2	8	2	6	8	6	58	14	10	3	26	49	31	72	26	25	19	13	28	44	19	9	50	11	26	3	12	18
Digestive:																												
Teeth—																												
Carious teeth, septic roots	1	11	0	6	8	6	49	15	9	3	23	35	39	104	22	32	36	7	35	35	26	9	37	11	28	5	5	15
Heavy density (X ray advised)	0	16	4	7	27	19	116	31	21	10	53	97	104	190	74	51	50	18	69	81	48	21	109	37	53	8	23	57
Missing teeth	1	3	2	2	1	6	23	4	5	1	17	15	14	30	15	11	19	4	7	8	12	1	19	5	5	2	1	13
Pyorrhea (definite)	1	6	1	1	3	5	18	5	5	1	18	22	24	45	14	18	14	3	8	8	8	2	13	8	11	2	1	9
Slightly infected gums	0	10	0	6	12	14	79	22	19	6	33	73	84	177	53	51	42	15	40	43	35	21	55	25	44	6	15	33

APPENDIX TABLE 2.—*Number of impairments by cause in each specific occupation*—Continued

Nature of impairment, disease, or symptom	Miners	Ironworkers	Foundry workers	Blacksmiths	Metal workers	Woodworkers	Machinists (office, store)	Firemen (stationary)	Shoe-factory operatives	Textile-mill operators	Factory workers (unclassified, light)	Printers	Garment operatives	Tailors	Cutters (cloth)	Painters	Carpenters	Bricklayers	Plumbers, pipe and steam fitters	Electricians	Waiters and hotel servants	Domestic help	Chauffeurs	Barbers	Butchers	Street railway employees	Telephone and telegraph operators	Firemen, police
Digestive—Continued.																												
Other—																												
Gastric disturbances	0	5	0	2	4	2	21	6	4	5	14	24	23	46	13	11	15	2	19	17	8	3	31	8	11	2	6	13
"Acid stomach"	1	7	0	3	3	2	26	7	5	5	10	21	33	46	20	17	17	3	16	19	22	4	27	13	12	4	6	13
Constipation	1	17	1	8	17	19	87	26	24	10	46	74	109	201	60	66	55	18	62	62	45	13	95	37	40	10	13	58
Habitual use of laxatives	0	10	1	6	12	15	56	22	12	9	23	60	58	132	44	45	41	12	44	44	37	13	64	30	33	8	7	55
Hemorrhoids	1	4	1	2	0	6	20	9	6	0	9	31	32	60	24	17	10	5	22	17	12	9	29	13	20	2	2	16
Tenderness in region of appendix	1	0	0	0	0	2	8	1	2	0	4	4	6	12	4	3	7	0	4	4	3	1	6	2	6	3	0	4
Circulatory:																												
Enlarged heart	0	0	0	2	2	2	9	1	0	0	7	6	3	13	6	2	4	1	3	1	1	1	3	2	6	0	0	4
Organic valvular heart disease	0	2	0	1	3	1	15	0	2	1	6	6	8	11	2	8	2	0	2	7	2	2	8	4	4	0	3	4
Functional heart murmur	0	7	0	2	5	2	17	2	4	0	5	17	17	33	12	8	12	1	11	18	12	4	13	7	10	2	6	6
Arterial thickening—																												
Moderate or marked	0	3	1	2	4	1	16	5	3	1	4	4	5	15	6	10	10	0	12	6	5	2	7	3	7	0	0	3
Slight	0	13	1	4	8	7	48	18	11	4	20	44	47	116	26	43	42	13	27	37	27	15	44	21	20	6	6	25
Blood Pressure—																												
20 or more millimeters above average	0	2	0	4	3	1	17	3	1	2	6	12	13	50	10	12	5	4	5	7	5	2	10	8	11	1	3	7
15 or more millimeters below average	2	11	0	2	5	6	47	14	10	4	20	39	41	77	26	20	20	4	17	36	25	11	36	24	26	3	7	14
Rapid pulse, over 90	0	5	0	0	3	8	32	6	14	3	17	38	37	66	20	15	10	3	18	27	11	7	8	14	22	3	8	16

Genito-urinary:																												
Albuminuria—																												
Moderate or marked	0	2	0	0	0	4	7	0	0	1	4	9	7	16	9	8	6	3	5	10	2	6	9	5	6	0	0	8
Slight	1	7	0	5	8	4	56	13	15	5	9	44	39	101	30	25	28	14	22	48	26	7	59	22	32	7	9	16
Granular casts in urine	1	6	0	2	3	4	28	5	7	1	6	29	22	50	21	18	15	8	8	22	8	2	25	9	17	4	3	10
Hyaline casts in urine	1	4	1	2	4	5	35	9	8	1	12	41	28	67	20	28	16	8	16	28	12	8	32	17	19	6	8	14
Sugar in urine	0	4	0	0	5	3	15	4	4	0	3	16	13	48	12	9	5	3	5	8	5	3	14	5	9	3	1	10
Pus in urine	1	9	0	4	9	4	27	8	9	3	7	32	30	71	23	17	22	7	17	33	20	7	53	16	20	1	4	12
Enlarged prostate	0	4	1	4	1	1	23	6	3	0	6	14	11	44	11	17	10	4	11	14	12	4	19	7	14	0	3	9
Frequent or painful urination	0	3	0	2	3	4	23	9	4	2	8	15	8	45	12	11	6	5	16	17	5	2	31	9	8	1	3	18
Miscellaneous:																												
Defective vision—																												
Uncorrected	0	18	0	9	20	12	96	18	23	8	33	81	109	213	67	69	61	15	52	69	38	15	80	39	60	6	14	22
Corrected	0	3	1	5	7	7	44	15	11	4	15	56	39	90	32	26	30	7	26	31	16	9	27	17	26	4	8	18
Defective hearing	0	15	2	8	6	8	52	13	11	4	13	35	39	86	31	27	39	7	29	21	14	5	35	13	13	3	8	16
Wax in ears	1	8	1	2	6	6	53	13	8	3	18	44	28	75	25	15	25	11	35	41	21	7	52	18	16	4	8	20
Enlarged thyroid, simple goiter	0	0	0	1	2	0	0	1	0	0	1	2	1	4	1	0	1	1	0	1	0	1	1	0	0	0	0	0
Adenitis	0	2	1	1	1	3	11	1	2	3	4	11	8	9	2	6	5	2	7	5	4	0	10	1	4	0	2	2
Chronic skin affections	1	3	0	1	1	4	30	8	5	2	10	27	25	38	21	16	14	6	12	23	17	5	21	8	9	3	1	5
Hernia	0	6	0	0	1	3	14	8	2	5	5	11	8	27	19	5	10	3	8	8	12	2	5	12	14	0	1	4
Weak inguinal rings	0	8	2	3	0	8	25	9	7	0	9	28	23	51	23	17	18	8	13	22	11	4	23	11	15	1	3	15
Varicose veins	0	3	0	0	5	3	17	5	2	2	8	15	15	27	20	14	13	1	10	6	12	5	13	8	21	0	2	9
Varicocele	0	6	1	4	6	4	29	10	3	1	13	25	17	27	19	14	9	3	18	26	13	2	28	9	9	1	4	9
Flat feet	1	19	2	9	12	16	94	23	21	9	52	110	140	242	85	69	53	16	57	70	63	25	91	43	69	10	15	50
Spinal curvature	0	4	0	0	1	6	17	2	3	0	4	10	12	20	9	4	4	1	2	6	1	3	8	3	3	0	1	4
Backache	0	0	1	3	3	3	19	3	2	0	4	11	10	32	14	15	8	4	13	8	5	1	15	4	9	0	3	7
Nervousness	0	2	1	1	8	3	22	6	5	5	7	15	24	36	13	15	10	2	9	20	7	2	10	12	8	1	4	9
Abnormal reflexes	1	4	0	3	4	6	19	4	5	0	8	19	23	46	12	9	7	6	12	21	10	12	15	8	11	3	2	12
Dizziness	2	5	0	1	0	4	20	6	7	2	9	19	17	31	12	11	13	5	17	14	9	5	8	13	12	1	4	9
Insomnia	0	1	0	1	0	0	2	1	1	0	3	4	6	30	4	4	2	1	1	2	3	2	2	1	2	0	3	1
Headache	1	11	1	3	14	6	47	16	12	5	44	54	53	115	30	37	27	7	29	42	25	7	55	20	32	5	7	22
Use of patent medicine	0	8	1	0	3	3	26	6	2	3	13	23	22	38	16	17	14	5	16	16	12	7	23	4	12	1	5	9

SEX DIFFERENCES IN THE PREVALENCE OF DENTAL CARIES [1]

Based on 12,435 Oral Examinations by Dental Personnel in Georgia, Illinois, Missouri, and Hagerstown, Md.

(STUDIES IN DENTAL CARIES No. 2)

By AMANDA L. STOUGHTON, *Acting Assistant Surgeon*, and VERNA THORNHILL MEAKER, *Dental Hygienist, United States Public Health Service*

In a previous study,[2] the prevalence of dental caries in a group of school children of different ages was discussed. Most of the oral examinations were made by one experienced dental hygienist; but since she and the dental hygienist who made the remainder of the examinations had previously worked out a standard technique, their findings have been considered comparable and have been combined.

The first paper, in which is given a more detailed discussion of the field work, considered the prevalence of several dental conditions among children of both sexes. In the present study, the data for boys and girls are treated separately.

The examination records were so arranged that both temporary and permanent teeth could be charted. All carious teeth were designated, a special subdivision being made, called "remaining roots," which included teeth having crowns which were entirely carious, those having the pulp involved, and those with fistulæ. Instead of the number of individual fillings, the number of filled teeth was charted. The term "total past decay" when applied to permanent teeth includes missing as well as decayed and filled teeth. All the teeth, whether temporary or permanent, which were present in the child's mouth at the time of examination are included in the term "all teeth."

TEMPORARY TEETH

Although the percentages of children of both sexes having one or more decayed or filled temporary teeth decline rapidly after the first few age groups, the percentages remain higher among the boys after the 7-year group. (Table 1, fig. 1.) Excepting among 6-year-old children, more boys than girls had five or more temporary teeth decayed or filled. Undoubtedly, the fact that the percentage of children with decayed temporary teeth decreases with age is due to their gradual replacement by permanent teeth. It may be that boys lose their temporary teeth somewhat later than girls.

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[1] From Field Investigations in Child Hygiene, in Cooperation with the Office of Statistical Investigations, United States Public Health Service. Dental Examinations by Meaker and Statistical Analysis by Stoughton.

[2] Dental decay and corrections among school children of different ages. Public Health Reports, Vol. 46, No. 44, October 30, 1931. Reprint No. 1524.

TABLE 1.—*Condition of temporary teeth of boys and girls of each age from 6 to 14 years*

Age	Boys								Girls							
	Total children	Decayed or filled		Decayed		Remaining roots		Fistulae, 1 or more	Total children	Decayed or filled		Decayed		Remaining roots		Fistulae, 1 or more
		1 or more	5 or more	1 or more	5 or more	1 or more	5 or more			1 or more	5 or more	1 or more	5 or more	1 or more	5 or more	
NUMBER																
6	451	394	268	388	263	148	20	47	462	404	277	399	272	160	9	47
7	541	490	320	485	309	200	16	32	581	529	323	521	316	211	14	42
8	556	512	307	500	294	224	17	42	560	504	297	496	283	205	10	40
9	673	607	289	595	270	249	20	24	662	553	195	536	177	171	10	23
10	804	632	175	622	168	236	5	19	848	555	119	540	113	176	6	18
11	849	475	84	469	83	181	7	13	853	346	43	337	42	126	1	7
12	659	235	24	235	22	88	3	2	702	165	10	162	10	69	2	3
13	595	106	6	103	6	45	0	0	588	66	2	64	2	27	0	1
14	400	31	0	30	0	20	0	0	367	14	0	14	0	4	0	0
PER CENT																
6	100.0	87.4	59.4	86.0	58.3	32.8	4.4	10.4	100.0	87.4	59.9	86.4	58.9	34.6	1.9	10.2
7	100.0	90.6	59.1	89.6	57.1	37.0	3.0	5.9	100.0	91.0	55.6	89.7	54.4	36.3	2.4	7.2
8	100.0	92.1	55.2	89.9	52.9	40.3	3.1	7.5	100.0	90.0	53.0	88.6	50.5	36.6	1.8	7.1
9	100.0	90.2	42.9	88.4	40.1	37.0	3.0	3.6	100.0	83.5	29.5	81.0	26.7	25.8	1.5	3.5
10	100.0	78.6	21.8	77.4	20.9	29.3	.6	2.4	100.0	65.4	14.0	63.7	13.3	20.7	.7	2.1
11	100.0	55.9	9.9	55.2	9.8	21.3	.8	1.5	100.0	40.6	5.0	39.5	4.9	14.8	.1	.8
12	100.0	35.7	3.6	35.7	3.3	13.3	.5	.3	100.0	23.5	1.4	23.1	1.4	9.8	.3	.4
13	100.0	17.8	1.0	17.3	1.0	7.6	-----	-----	100.0	11.2	.3	10.9	.3	4.6	.0	.2
14	100.0	7.7	-----	7.5	-----	5.0	-----	-----	100.0	3.8	-----	3.8	-----	1.1	-----	-----

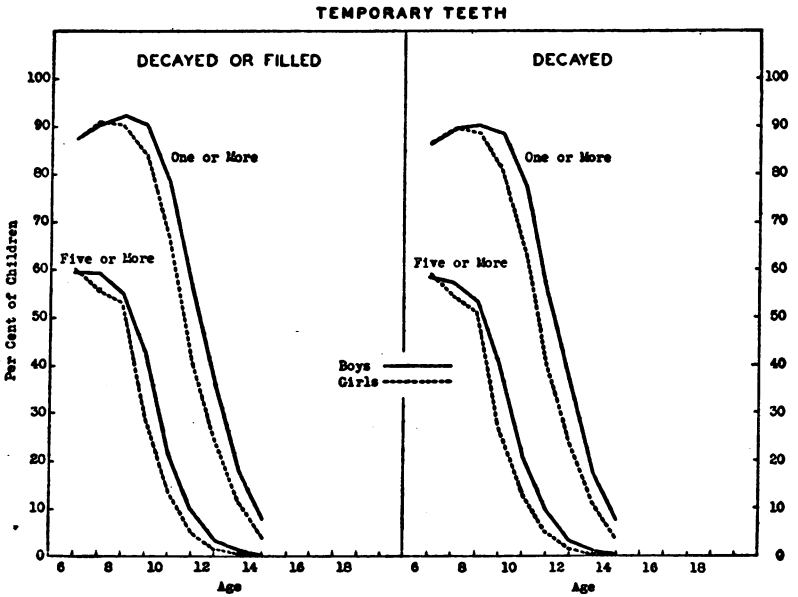

FIGURE 1.—Prevalence of total past decay and untreated caries in temporary teeth of boys and girls at successive years of age

Since the number of temporary teeth filled is so small, the graphs of the percentages of children having unfilled carious temporary teeth are practically the same as those of children having temporary teeth decayed or filled. The percentages of boys having temporary teeth badly decayed (remaining roots) are also higher than the corresponding percentages of girls in every age except the 6-year group. (Fig. 2.) A higher percentage of boys than of girls have five or more temporary teeth so badly decayed as to be classed as "remaining roots." The proportion of children having one or more temporary teeth with fistulæ is practically the same for both sexes in each age group.

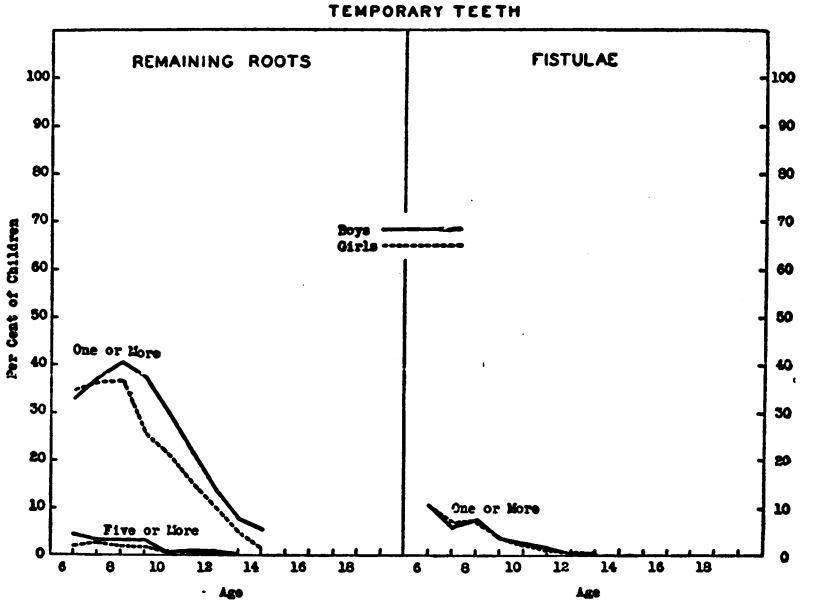

FIGURE 2.—Prevalence of marked caries and fistulæ in temporary teeth of boys and girls at successive years of age

TABLE 2.—*Condition of temporary teeth of boys and girls in three-year age groups from 6 to 14 years*

Age and sex	Total number of children	Per cent having decayed or filled					Per cent having remaining roots				
		1 or more	3 or more	5 or more	7 or more	9 or more	1 or more	3 or more	5 or more	7 or more	9 or more
BOYS											
6 to 8	1,548	90.2	77.0	57.8	37.8	19.1	37.0	10.4	3.4	1.2	0.4
9 to 11	2,326	73.7	45.9	23.6	9.0	2.9	28.6	6.5	1.4	.3	.1
12 to 14	1,654	22.5	5.7	1.8	.3	.1	9.2	1.3	.2	.1	------
GIRLS											
6 to 8	1,603	89.6	74.9	56.0	35.2	16.2	35.9	8.6	2.1	.4	.1
9 to 11	2,363	61.5	32.7	15.1	5.9	1.7	20.0	3.9	.7	.1	------
12 to 14	1,657	14.8	3.4	.7	.1	.1	6.0	.5	.1	.1	------

From the accompanying graphs, it is evident that the relative incidence of various dental defects among boys and among girls is not the same in each age group. Instead of showing rates for each age separately, the children were divided into 3-year age groups and the percentage of children in these groups who had one or more, three or more, etc., teeth showing the defect in question are given in Table 2 and are plotted in Figure 3.

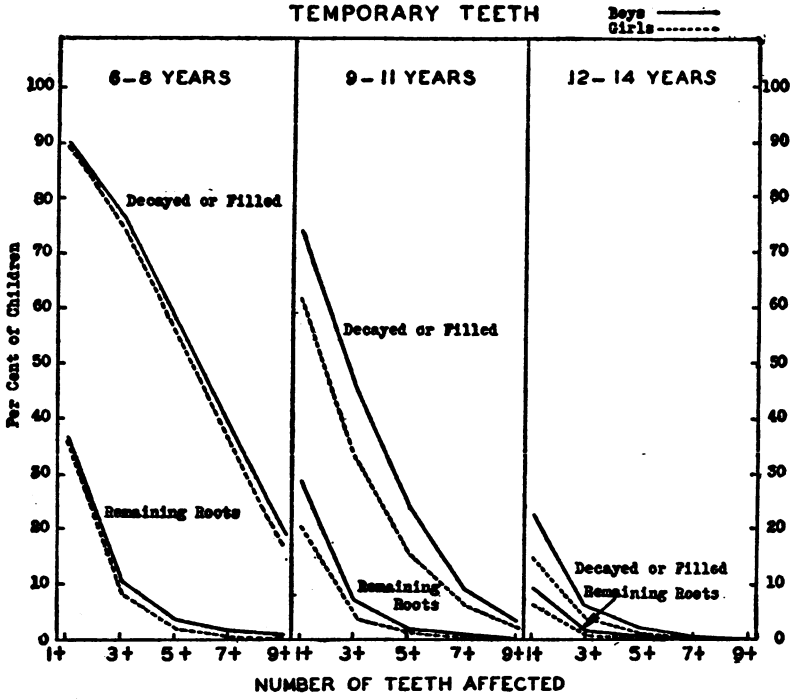

FIGURE 3.—Extent of total past decay and marked caries in temporary teeth of boys and girls in 3-year age groups

In all three groups a greater proportion of boys than of girls had temporary teeth decayed or filled, but the difference was much more marked in the last two groups than among the youngest children.

In the 6 to 8 year group, the percentage of boys having badly decayed temporary teeth (remaining roots) is somewhat higher than the corresponding percentage of girls. In the 9 to 11 and 12 to 14 year old groups a much larger proportion of boys than girls have teeth nearly destroyed by caries (remaining roots).

TABLE 3.—*Condition of permanent teeth of boys and girls of each age from 6 to 19 years*

NUMBER

Age	Boys									Girls								
	Total children	Decayed, missing, or filled		Decayed		Missing, 1 or more	Filled		Remaining roots, 1 or more	Total children	Decayed, missing, or filled		Decayed		Missing, 1 or more	Filled		Remaining roots, 1 or more
		1 or more	5 or more	1 or more	5 or more		1 or more	5 or more			1 or more	5 or more	1 or more	5 or more		1 or more	5 or more	
6	451	82	2	79	0	0	6	2	0	462	105	1	103	1	0	3	0	1
7	541	247	3	241	1	5	15	1	3	581	281	3	266	3	4	21	0	2
8	556	341	7	321	5	3	35	1	8	560	363	9	348	5	10	34	3	6
9	673	444	22	404	9	21	77	5	12	662	471	22	436	14	30	87	1	17
10	804	570	66	503	47	42	117	8	30	848	643	61	543	30	60	180	6	31
11	849	630	92	556	59	63	150	11	44	853	662	104	555	59	85	204	19	46
12	659	517	116	453	70	89	127	12	60	702	596	170	525	97	103	164	30	49
13	595	498	175	451	115	108	115	20	65	588	506	201	445	119	127	155	28	58
14	400	347	166	314	107	90	99	21	49	367	325	162	293	91	84	130	27	38
15	273	247	148	219	67	65	122	43	37	283	261	171	223	84	79	129	43	25
16	130	116	76	102	42	33	63	26	14	195	183	130	160	60	58	117	51	16
17	71	67	50	57	23	21	43	28	7	128	121	96	105	33	51	95	45	10
18	36	36	31	30	15	15	29	16	3	84	83	69	70	26	35	63	32	4
19	19	19	16	16	10	7	14	9	3	65	64	54	55	17	26	51	33	3

PER CENT

6	100.0	18.2	0.4	17.5	----	----	1.3	0.4	----	100.0	22.7	0.2	22.3	0.2	----	0.6	----	0.2
7	100.0	45.7	.5	44.5	0.2	0.9	2.8	.2	0.6	100.0	48.4	.5	45.8	.5	0.7	3.6	----	.3
8	100.0	61.3	1.3	57.7	.9	.5	6.3	.2	1.4	100.0	64.8	1.6	62.1	.9	1.8	6.1	0.5	1.1
9	100.0	66.0	3.3	60.0	1.3	3.1	11.4	.7	1.8	100.0	71.1	3.3	65.9	2.1	4.5	13.1	.1	2.6
10	100.0	70.9	8.2	62.6	5.8	5.2	14.5	1.0	3.7	100.0	75.8	7.2	64.0	3.5	7.1	21.2	.7	3.7
11	100.0	74.2	10.8	65.5	6.9	7.4	17.7	1.3	5.2	100.0	77.6	12.2	65.1	6.9	10.0	23.9	2.2	5.4
12	100.0	78.5	17.6	68.7	10.6	13.5	19.3	1.8	9.1	100.0	84.9	24.2	74.8	13.8	14.7	23.4	4.3	7.0
13	100.0	83.7	29.4	75.8	19.3	18.1	19.3	3.4	10.9	100.0	86.1	34.2	75.7	20.2	21.6	26.4	4.8	9.9
14	100.0	86.7	41.5	78.5	26.7	22.5	24.7	5.3	12.3	100.0	88.5	44.1	79.8	24.8	22.9	35.4	7.3	10.3
15	100.0	90.5	53.5	80.2	24.5	23.8	44.7	15.7	13.5	100.0	92.2	60.4	78.8	29.7	27.9	45.6	15.2	8.8
16	100.0	89.2	58.5	78.5	32.3	25.4	48.5	15.4	10.8	100.0	93.8	66.7	82.1	30.8	29.7	60.0	26.1	8.2
17	100.0	94.4	70.4	80.3	32.4	29.6	60.6	39.4	9.9	100.0	94.5	75.0	82.0	25.8	39.8	74.2	35.1	7.8
18	100.0	100.0	86.1	83.3	41.7	41.7	80.5	44.4	8.3	100.0	98.8	82.1	83.3	30.9	41.7	75.0	38.1	4.8
19	100.0	100.0	84.2	84.2	52.6	36.8	73.7	47.4	15.8	100.0	98.5	83.1	84.6	26.1	40.0	78.5	50.8	4.6

PERMANENT TEETH

In contrast to the graphs for temporary teeth, in which more boys than girls had caries, a higher percentage of girls than boys have one or more permanent teeth decayed, missing, or filled in each age group excepting the last three. (Table 3, fig. 4.) As suggested in the preceding section, it may be that girls lose their temporary teeth somewhat earlier than boys, and consequently their permanent teeth erupt sooner and are exposed to caries over a longer period. The difference is more marked after eight years. About the same percentage of boys and girls between 6 and 10 years of age had five or more permanent teeth decayed, missing, or filled. Among the older children, excepting those of the last two age groups, the percentage of girls was higher than the percentage of boys at each age. The percentage of girls having one or more permanent teeth decayed and unfilled tends to be higher than the percentage of boys. Practically the same percentages of boys and girls had five or more unfilled carious perma-

nent teeth at each age except after 16, when the percentage of boys is higher.

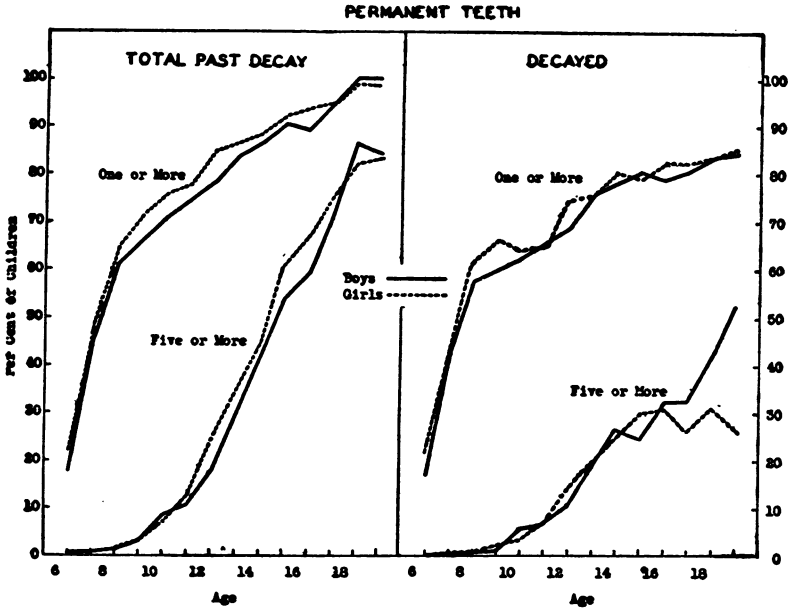

FIGURE 4.—Prevalence of total past decay and untreated caries in permanent teeth of boys and girls at successive years of age

TABLE 4.—*Condition of permanent teeth of boys and girls in 3-year-age groups from 6 to 17 years*

Age and sex	Total number of children	Per cent having decayed, missing, or filled					Per cent having filled					Per cent having missing		
		1 or more	3 or more	5 or more	7 or more	9 or more	1 or more	3 or more	5 or more	7 or more	9 or more	1 or more	3 or more	5 or more
BOYS														
6 to 8	1,548	43.3	17.4	0.8	0.1	0.1	3.6	0.7	0.3	0.1	------	0.5	0.1	------
9 to 11	2,326	70.7	43.0	7.7	1.9	.6	14.8	5.8	1.0	.3	0.1	5.4	.3	------
12 to 14	1,654	82.3	58.7	27.6	12.4	5.3	20.6	9.2	3.2	1.0	.7	17.4	1.6	0.2
15 to 17	474	90.7	76.8	57.4	38.4	23.2	48.1	30.6	19.2	11.6	5.7	25.1	3.6	.6
GIRLS														
6 to 8	1,603	46.7	21.4	.8	.2	.1	3.6	1.3	.2	.1	------	.9	------	------
9 to 11	2,363	75.2	46.8	7.9	2.5	.8	19.9	7.6	1.1	.3	.1	7.4	.4	------
12 to 14	1,657	86.1	62.0	32.2	15.8	6.6	27.1	13.7	5.1	2.2	.8	18.9	2.3	.2
15 to 17	606	93.2	83.0	65.5	45.4	26.1	56.3	38.1	22.9	11.9	5.9	31.0	6.6	.8

About the same proportion of boys and girls have one or more permanent teeth nearly destroyed by caries (remaining roots) up to the 12-year group. (Fig. 5.) Among all the older children the percentage of boys is considerably higher than the percentage of girls. At nearly every age a larger percentage of girls than boys have one or more permanent teeth filled. The proportions are practically the same for the two sexes among children from 6 to 8 years of age. The

percentages of girls having five or more permanent teeth filled are somewhat higher than the corresponding percentages of boys among children between 11 and 17 years of age. More girls than boys have

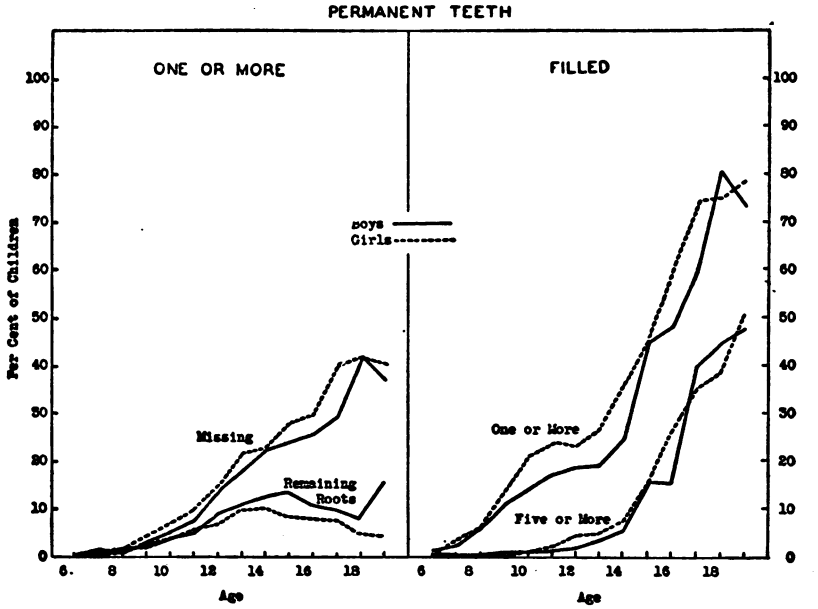

FIGURE 5.—Prevalence of markedly decayed, missing, and filled permanent teeth among boys and girls at successive years of age

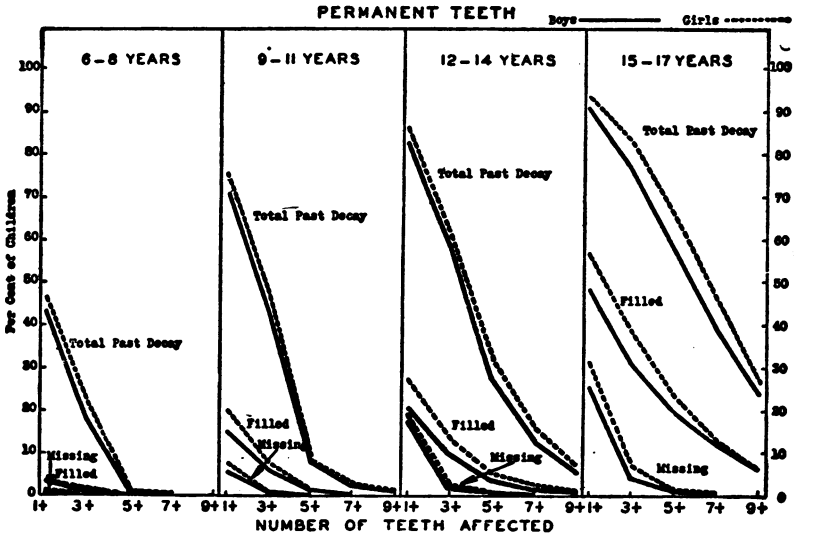

FIGURE 6.—Extent of total past decay, fillings, and extractions of permanent teeth of boys and girls in 3-year age groups

lost at least one permanent tooth except among the 6 and 7 year old children.

In Figure 6 and Table 4 the condition of the permanent teeth of the boys and girls in 3-year-age groups is shown.

Among the 6 to 8 year old children a slightly higher percentage of girls than boys had permanent teeth decayed, missing, or filled. Few children in this or in the 9 to 11 year group had five or more permanent teeth affected, but the percentages are practically the same among boys and girls in the two oldest groups, a larger proportion of girls than of boys was affected. Among the 6 to 8 year old children few had fillings in permanent teeth, and the percentages of boys and girls are practically the same. Among the older children the percentage of girls is, on the whole, appreciably higher than that of the boys.

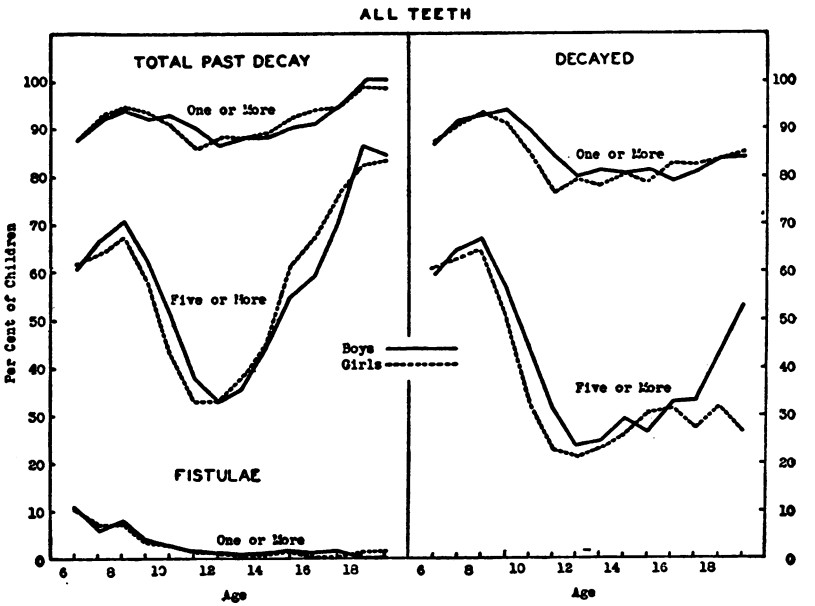

FIGURE 7.—Prevalence of total past decay, untreated caries, and fistulae in teeth of boys and girls at successive years of age

More girls than boys had had permanent teeth extracted. The difference is most pronounced among the 15 to 17 year old children.

ALL TEETH

The graphs based on all teeth are similar to the graphs for temporary teeth in the early age groups and to those for permanent teeth among the older children. (Fig. 8, Table 5.) There is no striking difference between the percentages of boys and girls having one or more teeth decayed, missing, or filled. When children with five or more teeth decayed, missing, or filled are considered, the percentages are higher among boys in the early-age groups and among girls in the later age groups.

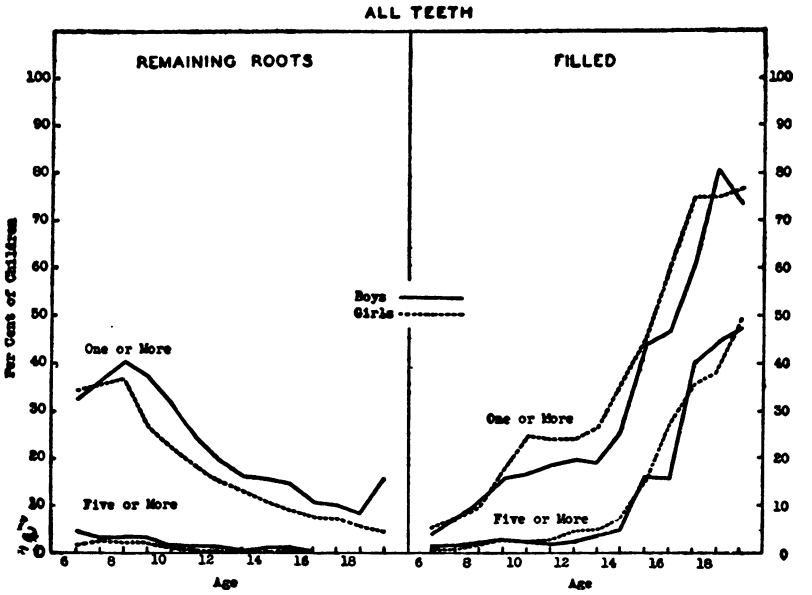

FIGURE 8.—Prevalence of marked caries and fillings in teeth of boys and girls at successive years of age

TABLE 5.—*Condition of teeth of boys and girls of each age from 6 to 19 years*

Age	Total children	Boys								
		Decayed, missing, or filled		Decayed		Remaining roots		Filled		Fistulæ,
		1 or more	5 or more	1 or more	5 or more	1 or more	5 or more	1 or more	5 or more	1 or more
NUMBER										
6	451	396	274	389	267	148	20	20	4	47
7	541	498	369	494	348	199	16	40	7	32
8	556	523	392	514	370	225	17	59	11	44
9	673	621	417	630	381	253	21	109	17	25
10	804	747	407	717	352	255	9	137	16	21
11	849	764	317	713	264	208	8	160	16	15
12	659	570	214	523	152	131	6	130	14	8
13	595	525	209	480	143	97	1	116	20	3
14	400	353	178	321	115	63	3	100	20	3
15	273	246	148	221	71	40	3	121	43	4
16	130	118	76	102	42	14	0	61	20	1
17	71	67	50	57	23	7	0	43	28	1
18	36	36	31	30	15	3	0	29	16	0
19	19	19	16	16	10	3	0	14	9	0
PER CENT										
6	100.0	87.8	60.7	86.3	59.2	32.8	4.4	4.4	0.9	10.4
7	100.0	92.1	68.5	91.3	64.3	36.8	2.9	7.4	1.3	5.9
8	100.0	94.1	70.5	92.4	66.5	40.5	3.1	10.6	2.0	7.9
9	100.0	92.3	62.0	93.6	56.6	37.6	3.1	16.2	2.5	3.7
10	100.0	92.9	50.6	89.2	43.8	31.7	1.1	17.0	2.0	2.6
11	100.0	90.0	37.3	84.0	31.1	24.5	.9	18.8	1.9	1.8
12	100.0	86.5	32.5	79.4	23.1	19.9	.9	19.7	2.1	1.2
13	100.0	88.2	35.1	80.7	24.0	16.3	.2	19.5	3.4	.5
14	100.0	88.3	44.5	80.3	28.7	15.7	.7	25.0	5.0	.7
15	100.0	90.1	54.2	80.9	26.0	14.7	1.1	44.3	15.7	1.5
16	100.0	90.8	58.5	78.5	32.3	10.8	-------	46.9	15.4	.8
17	100.0	94.4	70.4	80.3	32.4	9.9	-------	60.6	39.4	1.4
18	100.0	100.0	86.1	83.3	41.7	8.3	-------	80.5	44.4	-------
19	100.0	100.0	84.2	84.2	52.6	15.8	-------	73.7	47.4	-------

TABLE 5.—*Condition of teeth of boys and girls of each age from 6 to 19 years*—Con.

Age	Total children	Girls								
		Decayed, missing, or filled		Decayed		Remaining roots		Filled		Fistulæ,
		1 or more	5 or more	1 or more	5 or more	1 or more	5 or more	1 or more	5 or more	1 or more
		NUMBER								
6	462	405	283	400	279	160	9	24	2	47
7	581	537	370	528	363	211	14	43	4	40
8	560	529	377	520	361	207	11	56	9	41
9	662	617	382	602	333	178	12	115	17	23
10	848	768	359	718	277	193	6	209	19	20
11	853	733	276	652	190	157	3	209	22	12
12	702	620	228	556	147	108	2	169	30	5
13	588	519	218	458	132	78	0	156	28	2
14	367	327	163	294	92	40	0	130	27	3
15	283	261	172	223	84	26	1	128	43	3
16	195	183	130	160	60	15	0	118	52	0
17	128	121	97	105	34	9	0	96	45	0
18	84	83	69	70	26	5	0	63	32	1
19	65	64	54	55	17	3	0	50	32	1
		PER CENT								
6	100.0	87.7	61.3	86.6	60.4	34.6	1.9	5.2	0.4	10.2
7	100.0	92.4	63.7	90.9	62.5	36.3	2.4	7.4	.7	6.9
8	100.0	94.5	67.3	92.9	64.5	37.0	2.0	10.0	1.6	7.3
9	100.0	93.2	57.7	90.9	50.3	26.9	1.8	17.4	2.6	3.5
10	100.0	90.6	42.3	84.7	32.7	22.7	.7	24.6	2.2	2.3
11	100.0	85.9	32.4	76.4	22.3	18.4	.3	24.5	2.6	1.4
12	100.0	88.3	32.5	79.2	20.9	15.4	.3	24.1	4.3	.7
13	100.0	88.3	37.1	77.9	22.4	13.3	----------	26.5	4.8	.3
14	100.0	89.1	44.4	80.1	25.1	10.9	----------	35.4	7.3	.8
15	100.0	92.2	60.8	78.8	29.7	9.2	.3	45.2	15.2	1.1
16	100.0	93.8	66.7	82.1	30.8	7.7	----------	60.5	26.7	----------
17	100.0	94.5	75.8	82.0	26.6	7.0	----------	75.0	35.1	----------
18	100.0	98.8	82.1	83.3	30.9	5.9	----------	75.0	38.1	1.2
19	100.0	98.5	83.1	84.6	26.1	4.6	----------	76.9	49.2	1.5

In most groups under 12 years of age higher percentages of boys than of girls had unfilled carious teeth. Among children 12 years of age and over, practically the same proportion of boys and girls were so affected. In nearly every age group a higher percentage of boys than girls had five or more unfilled carious teeth.

Practically the same proportions of boys and girls in each age group had teeth with fistulæ.

The proportions of boys and girls in 3-year-age groups having teeth decayed, missing, or filled are shown in Figure 9 and Table 6.

TABLE 6.—*Condition of teeth of boys and of girls in 3-year-age groups from 6 to 17 years*

Age and sex	Total number of children	Per cent having decayed, missing, or filled					Per cent having filled				
		1 or more	3 or more	5 or more	7 or more	9 or more	1 or more	3 or more	5 or more	7 or more	9 or more
BOYS											
6 to 8	1,548	91.5	80.8	66.3	48.8	30.8	7.7	3.5	1.4	0.6	0.1
9 to 11	2,326	91.7	73.5	49.1	28.8	14.2	17.5	7.4	2.1	.7	.3
12 to 14	1,654	87.5	64.6	36.3	15.7	7.1	20.9	9.3	3.3	1.1	.7
15 to 17	474	90.9	77.0	57.8	38.4	23.4	47.5	30.4	19.2	11.6	5.7
GIRLS											
6 to 8	1,603	91.8	79.3	64.3	48.8	30.1	7.7	3.3	.9	.4	.2
9 to 11	2,363	89.6	70.1	43.0	21.9	9.9	22.6	9.2	2.5	.6	.2
12 to 14	1,657	88.5	66.4	36.8	18.1	7.5	27.5	13.8	5.1	2.2	.8
15 to 17	606	93.2	83.0	65.8	45.9	26.2	56.4	38.3	23.1	11.9	5.9

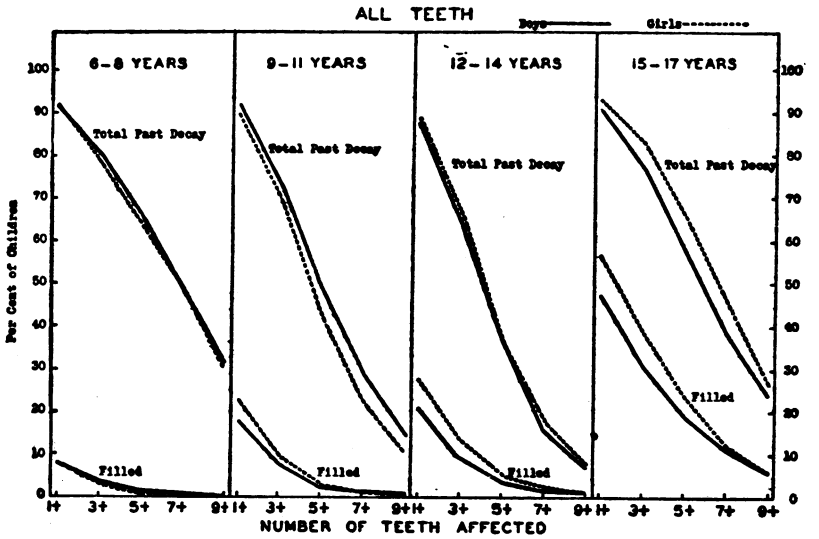

FIGURE 9.—Extent of total past decay and fillings in teeth of boys and girls in 3-year age groups

From 6 to 8 years the incidence of past and present decay is practically the same for both sexes. However, among 9 to 11 year old children a larger percentage of boys than of girls have teeth that are or have been carious. The ratio of boys to girls becomes somewhat greater when children having larger numbers of affected teeth are considered. In the group from 12 to 14 years the percentages are again very nearly alike for both sexes. From 15 to 17 years the proportion of girls affected is higher.

A marked contrast is evident in the graphs showing the percentages of boys and girls having fillings. Between 6 and 8 years of age the percentages are much the same for both sexes. Among the older children, however, a considerably greater proportion of girls than of

boys have one or more filled teeth. The ratio gradually lessens as children having larger numbers of filled teeth are considered. In the last group practically the same percentages of boys and girls had seven or more and nine or more teeth which had been filled.

SUMMARY

TEMPORARY TEETH

At each age except among the very youngest children more boys than girls have carious or filled temporary teeth. (Fig. 1.)

A considerably higher percentage of boys than of girls in most age groups had markedly decayed temporary teeth. (Fig. 2.)

There was no sex difference in the prevalence of temporary teeth with fistulæ. (Fig. 2.)

PERMANENT TEETH

On the whole, more girls than boys had permanent teeth decayed, missing, or filled. (Fig. 4.)

The prevalence of unfilled carious permanent teeth was practically the same among boys and girls. (Fig. 4.)

A higher proportion of girls than of boys had had permanent teeth extracted. (Fig. 5.)

Among children 12 years of age and older, more boys than girls had markedly decayed permanent teeth. (Fig. 5.)

In most age groups, a considerably higher percentage of girls than of boys had had one or more permanent teeth filled. (Fig. 5.)

About the same percentage of boys and girls had five or more filled permanent teeth. (Fig. 5.)

ALL TEETH

A greater proportion of boys among the younger children and of girls among the older children had decayed, missing, or filled teeth. (Fig. 7.)

Among the younger children, more boys than girls had unfilled carious teeth. Among older children, there was little difference between the sexes, except that a considerably higher number of boys than girls in the last three age groups had five or more unfilled carious teeth. (Fig. 7.)

The prevalence of teeth with fistulæ was practically the same among boys and girls. (Fig. 7.)

A very much higher percentage of boys than of girls had markedly decayed teeth. (Fig. 8.)

On the whole, more girls than boys had teeth with fillings. (Fig. 8.)

A TRACHOMA SURVEY IN THE RIO GRANDE VALLEY OF TEXAS

By C. E. Rice, *Passed Assistant Surgeon, United States Public Health Service*

Because of the repeated reports of trachoma in considerable amount in the citrus region of the Rio Grande Valley in Texas, the assistance of the United States Public Health Service was requested by the Texas State Department of Health in making a survey to determine the actual prevalence of trachoma in this region. The survey was begun on March 5, 1931, by representatives of the Public Health Service and State department of health jointly.

SCOPE OF SURVEY

During a period of six weeks there were examined 11,054 school children in attendance at 76 schools in Cameron, Willacy, Hidalgo, and Starr Counties in southeastern Texas. In addition, visits were made to 25 homes of Mexicans living in and around Brownsville. The homes selected for visits were those from which children in school showed marked granular involvement of the conjunctiva of the eyelids. This part of the survey was difficult, owing to fears aroused because of inability to understand what was desired and also because some of the homes visited were entirely deserted at the time on account of the absence of the families en masse at work in the fields.

PLAN OF STUDY

The preliminary work of finding the suspicious cases was done by a nurse specially trained in trachoma work, assisted by public health nurses, during the period March 5 to April 14, 1931. Diagnostic clinics, during the period April 16–22, 1931, were held at certain points by medical experts for the examination of each suspected case thus uncovered.

RESULTS

In all, 44 cases of trachoma were uncovered, and in 40 of these the disease had apparently been contracted in or in the vicinity of the Rio Grande Valley. Eight of the 40 were arrested cases without sufficient corneal involvement to cause any loss of vision and had never been treated. A Mexican janitor in one large city school had the most active case seen in adults. This particular case showed the characteristic purplish coloration in the upper cul-de-sac, with some papillary overgrowth and marked invasion of the corneas by pannus.

Suspected cases found by the nurses were examined at 11 diagnostic clinics held in Cameron and Hidalgo Counties. In those clinics 119 adults and 1,747 children between the ages of 1 and 20 were examined with the results shown in Table 1.

TABLE 1.—*Results of examination of suspected cases at 11 diagnostic clinics*

Condition	Adults	Children	Condition	Adults	Children
Trachoma	7	37	Conjunctivitis		141
Suspected trachoma	3	72	Negative	100	872
Folliculosis	6	625			
Cataract	3		Total	119	1,747

Because of the predominance of folliculosis, these cases were studied from the standpoint of age distribution and location.

Age distribution

	Up to 5	5 to 9	9 to 14	14 to 20	Adults
Age distribution of total number examined [1]	43	619	919	113	119
Age distribution of cases of folliculosis	12	439	168	6	6

[1] Ages not given in 53 cases.

It is very evident that folliculosis was largely confined to children in the primary grades and was almost negative in the higher grades.

The following figures show the high percentage of folliculosis found in the individual schools:

1. La Feria School (largely attended by Mexican children):
   - Total examined 201
   - Folliculosis 122
   - Percentage of folliculosis 67
2. Santa Maria School (largely attended by Mexican children):
   - Total examined 164
   - Folliculosis 90
   - Percentage of folliculosis 54.9
3. Rio Hondo School (largely attended by American children):
   - Total examined 418
   - Folliculosis 109
   - Percentage of folliculosis 26.1

There was observed a high percentage of folliculosis among the children examined in the other schools.

THERAPEUTIC DIAGNOSIS

The children attending the Santa Maria school in Cameron County, presenting evidence of follicular involvement of the eyelids, were placed under treatment in which a 2 per cent solution of mercurochrome or a one-fourth per cent solution of zinc sulphate was used. This treatment was administered by the teachers and older students. A reexamination of 48 pupils of this school treated in the above manner for folliculosis over a period of five weeks showed that 33, or 69 per cent, had become clinically negative. Considering the very irregular attendance of many Mexican children, because they are required by their parents to work in the fields, these results may be considered most excellent.

As these children had the same type of conjunctival involvement that is found to be so prevalent in the Rio Grande Valley, the prompt clearing up of the condition under mild astringents and antiseptics is evidence in favor of the nontrachomatous nature of their lid pathology.

METHOD OF EXAMINATION

All those presenting themselves at the diagnostic clinics had the eyelids of both eyes well everted so as to expose a generous portion of the upper and lower cul-de-sac. The observation of the conjunctiva thus exposed was made in natural light. In 90 per cent of all individuals the hand slit-lamp was used for examining the cornea for opacities and for pannus. The early commencement of pannus can not be seen without some magnification and focal light.

PATHOLOGY

Pannus was noted in all of the few cases of trachoma examined. In the arrested cases, scar tissue was quite evident in the cul-de-sac, more in the upper than the lower, and the pannus was ghostlike or markedly attenuated. The papillary type was more predominant.

In the many cases of folliculosis the granules were usually large and numerous, and on everting the upper lid these granules would often roll out to the extent of obscuring the cornea. On close observation, blood vessels could be made out at the base of the granules. The lids were quite pliable. In the lower lids the granules were also numerous; but on stretching the conjunctiva to separate the granules, blood vessels could usually be made out. On observing the corneas in these cases with the slit lamp there was not the least suspicion of blood vessel penetration of corneal tissue, and the corneas were always smooth and clear.

In the total examined there were only two cases of corneal opacity, both caused by trachoma and both in adults—one from Minnesota and the other from central east Texas. Only one case of lid distortion, due to trachoma, was observed—in an adult from the vicinity of the Oklahoma border.

CONCLUSIONS

1. Trachoma at the present time is but a limited public health problem in the citrus belt of the Rio Grande Valley, both among Americans and Mexicans. It is believed that the high living standards among the American population of this region precludes the possibility of trachoma ever becoming much of a problem in this region.

2. The instillation of zinc sulphate or mercurochrome solution in the conjunctival sac of children showing follicular involvement apparently clears up most of such conditions in this region. However, to be most effective this treatment should be supplemented by

instruction in personal hygiene, including cleanliness and the use of individual towels. It is not believed necessary to keep from school the children receiving the above treatment.

3. It is recommended that cases that show but little improvement after two months of treatment should be grattaged, including both upper and lower lids, preferably under local anesthesia. This should be followed for some time with 2 per cent silver nitrate solution applied to the everted lids and then irrigated off.

4. The general population and the physicians of this region are greatly interested in school health supervision, and their full cooperation in any campaign for the improvement of health and sanitation in schools may be taken for granted.

COURT DECISION RELATING TO PUBLIC HEALTH

City held not liable to cemetery owners for damages resulting from ordinance forbidding burials within city.—(California District Court of Appeal, Second District; Hand et al. *v.* City of Whittier, 4 P. (2d) 273; decided Oct. 22, 1931.) The people of the city of Whittier, by direct vote, adopted an ordinance declaring that the burial of the dead within the city was dangerous to life and detrimental to the public health and forbidding the interment of dead bodies in any cemetery within the corporate limits. The plaintiffs, who were the owners of a small cemetery located in a thinly populated portion of the city, brought an action against the city for damages caused by "said ordinance and the unreasonable, arbitrary caprice and unrestrained will of the municipality and the refusal of the officers thereof to issue permits for burials." The judgment of the trial court was in favor of the city, and, in affirming this judgment, the appellate court said:

> It is undisputed by appellants that the passage of the ordinance in question was an act by the city of Whittier in the exercise of a governmental function. In such circumstances, in the absence of any statute to the contrary, the principle of law is well established that an action for damages against the city will not lie. (18 Cal. Jur. 1091, 19 R. C. L. 1083.)

DEATHS DURING WEEK ENDED DECEMBER 12, 1931

Summary of information received by telegraph from industrial insurance companies for the week ended December 12, 1931, and corresponding week of 1930. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

	Week ended Dec. 12, 1931	Corresponding week, 1930
Policies in force	74, 343, 907	75, 006, 785
Number of death claims	13, 176	14, 526
Death claims per 1,000 policies in force, annual rate	9. 2	10. 1
Death claims per 1,000 policies, first 50 weeks of year, annual rate	9. 6	9. 6

Deaths [1] from all causes in certain large cities of the United States during the week ended December 12, 1931; infant mortality, annual death rate, and comparison with corresponding week of 1930. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

[The rates published in this summary are based upon mid-year population estimates derived from the 1930 census]

City	Week ended Dec. 12, 1931				Corresponding week, 1930		Death rate [2] for the first 50 weeks	
	Total deaths	Death rate [2]	Deaths under 1 year	Infant mortality rate [3]	Death rate [2]	Deaths under 1 year	1931	1930
Total (82 cities)	7,709	11.3	621	[4] 49	11.7	697	11.8	11.9
Akron	35	6.9	2	20	9.4	6	7.5	7.8
Albany [5]	31	12.5	3	60	15.5	3	14.0	14.5
Atlanta [6]	56	10.5	6	59	16.5	11	14.9	15.8
White	26	7.4	5	75	11.8	3	11.5	11.3
Colored	30	16.8	1	29	25.9	8	21.6	23.4
Baltimore [5] [6]	195	12.5	17	59	12.2	12	14.1	14.1
White	139	10.9	8	36	11.6	10	12.9	12.0
Colored	56	19.9	9	144	15.3	2	19.9	19.7
Birmingham [6]	55	10.6	4	40	9.2	4	13.1	13.8
White	22	6.9	4	68	7.1	1	10.0	10.0
Colored	33	16.8	0	0	12.5	3	18.0	19.2
Boston	210	13.9	20	58	14.1	18	14.1	14.1
Bridgeport	25	8.9	3	50	10.7	4	11.0	10.9
Buffalo	153	13.7	16	72	11.1	14	12.8	12.9
Cambridge	21	9.6	2	41	11.9	3	12.0	11.8
Camden	40	17.5	5	87	12.3	5	14.2	13.4
Canton	18	8.8	2	49	8.4	2	9.9	9.8
Chicago [5]	688	10.4	64	57	10.8	61	10.5	10.4
Cincinnati	130	14.8	14	84	14.3	7	15.7	15.5
Cleveland	140	8.0	12	35	10.1	15	11.0	11.0
Columbus	63	11.1	2	19	15.4	9	13.5	15.3
Dallas [6]	54	10.3	5	-------	10.5	7	11.1	11.4
White	42	9.7	2	-------	10.1	6	9.8	10.5
Colored	12	13.2	3	-------	12.7	1	17.3	16.1
Dayton	37	8.3	3	43	10.1	1	10.5	9.6
Denver	70	12.5	1	10	16.8	3	13.8	14.9
Des Moines	37	13.4	3	57	10.6	3	11.0	11.6
Detroit	238	7.5	27	43	8.5	46	8.1	9.2
Duluth	19	9.7	3	81	14.4	2	11.2	11.5
El Paso	27	13.4	6	-------	18.2	9	15.1	17.0
Erie	32	14.2	0	0	8.1	2	10.3	11.0
Fall River [5] [7]	22	10.0	3	71	8.6	0	11.1	11.5
Flint	12	3.8	0	0	5.6	5	6.8	9.0
Forth Worth [6]	32	10.0	2	-------	10.5	3	10.5	10.8
White	25	9.3	1	-------	6.8	2	10.1	10.3
Colored	7	13.4	1	-------	29.6	1	12.3	13.9
Grand Rapids	27	8.2	3	46	11.7	3	9.0	10.1
Houston [6]	48	8.1	4	-------	13.6	10	11.0	12.2
White	32	7.4	3	-------	11.8	5	10.1	10.8
Colored	16	10.1	1	-------	18.6	5	13.4	16.0
Indianapolis [6]	81	11.4	8	61	10.6	5	13.6	14.4
White	71	11.4	8	70	9.9	4	13.1	13.4
Colored	10	11.5	0	0	15.3	1	17.0	21.2
Jersey City	65	10.6	3	27	9.0	6	11.2	11.3
Kansas City, Kans. [6]	30	12.7	4	88	12.0	1	12.6	11.7
White	23	12.1	3	80	13.1	1	11.9	11.0
Colored	7	15.5	1	127	6.8	0	15.5	14.8
Kansas City, Mo.	105	13.4	6	48	12.6	3	12.9	13.2
Knoxville [6]	37	17.7	2	43	14.7	1	12.6	13.5
White	28	16.0	2	49	12.9	1	11.8	12.5
Colored	9	26.4	0	0	24.1	0	16.5	18.4
Long Beach	26	8.9	1	25	14.5	3	9.8	10.1
Los Angeles	363	14.4	23	67	10.7	28	10.7	11.0
Louisville [6]	78	13.2	6	55	8.3	3	13.7	13.4
White	67	13.4	4	42	6.6	3	12.3	12.0
Colored	11	12.0	2	143	17.6	0	21.2	21.5
Lowell [7]	30	15.6	1	26	12.0	1	12.8	13.3
Lynn	25	12.7	3	86	15.3	2	9.4	10.4
Memphis [6]	77	15.5	13	138	14.8	9	16.4	16.8
White	34	11.1	7	118	14.3	4	13.4	13.2
Colored	43	22.7	6	174	15.6	5	21.4	22.7
Miami [6]	24	11.1	3	77	13.2	1	11.6	11.0
White	20	12.0	0	0	11.5	1	10.8	9.7
Colored	4	8.2	3	272	18.6	0	14.5	15.4

See footnotes at end of table.

Deaths[1] from all causes in certain large cities of the United States during the week ended December 12, 1931; infant mortality, annual death rate, and comparison with corresponding week of 1930. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Dec. 12, 1931				Corresponding week, 1930		Death rate[2] for the first 50 weeks	
	Total deaths	Death rate[2]	Deaths under 1 year	Infant mortality rate[3]	Death rate[2]	Deaths under 1 year	1931	1930
Milwaukee	88	7.7	8	36	9.6	11	9.1	9.6
Minneapolis	96	10.6	6	39	13.4	14	10.9	10.7
Nashville[6]	56	18.8	11	166	14.2	3	16.7	16.5
White[6]	35	16.2	5	99	12.2	3	14.4	13.9
Colored	21	25.6	6	377	19.4	0	23.0	23.1
New Bedford[7]	24	11.1	1	26	8.8	2	12.0	11.0
New Haven	39	12.5	1	15	9.3	3	12.5	12.5
New Orleans[6]	136	15.2	13	73	17.2	18	16.5	17.3
White	78	12.2	5	42	13.8	11	13.5	14.3
Colored	58	22.5	8	132	25.7	7	24.1	24.9
New York	1,392	10.2	88	38	10.6	119	11.0	10.7
Bronx Borough	215	8.4	14	40	7.3	12	8.1	7.8
Brooklyn Borough	490	9.7	31	33	9.5	33	10.1	9.8
Manhattan Borough	514	14.8	34	45	16.3	54	16.5	15.9
Queens Borough	140	6.3	7	28	7.4	16	7.1	7.0
Richmond Borough	33	10.5	2	38	12.1	4	13.4	13.8
Newark, N. J	95	11.1	5	27	11.7	4	11.4	12.0
Oakland	69	12.3	9	113	11.5	2	10.7	11.0
Oklahoma City	38	10.1	7	98	10.0	1	10.6	10.9
Omaha	50	12.0	5	58	16.5	7	13.8	13.5
Paterson	36	13.5	4	68	8.3	2	13.2	12.0
Peoria	23	11.1	1	26	13.8	5	12.4	12.3
Philadelphia	434	11.5	39	57	12.3	48	12.8	12.6
Pittsburgh	170	13.1	16	56	15.0	19	14.3	13.8
Portland, Oreg	83	14.1	3	37	11.4	3	11.6	12.1
Providence	81	16.6	7	64	10.7	5	12.6	12.8
Richmond[6]	53	15.0	5	73	15.7	5	15.3	14.9
White	33	13.1	2	44	10.8	3	12.9	12.2
Colored	20	19.7	3	130	27.5	2	21.4	21.4
Rochester	69	10.8	4	37	8.7	4	11.7	11.5
St. Louis	187	11.8	11	40	13.4	7	14.8	14.0
St. Paul	46	8.7	2	21	10.7	2	10.4	10.1
Salt Lake City[4]	31	11.3	1	15	14.8	4	12.0	12.6
San Antonio	55	11.9	8	-------	15.2	5	14.1	15.8
San Diego	43	14.3	3	62	15.7	1	13.6	14.5
San Francisco	173	13.9	8	53	13.9	9	12.9	13.0
Schenectady	23	12.5	0	0	10.3	2	10.9	11.1
Seattle	83	11.6	3	30	12.4	8	11.3	10.9
Somerville	24	11.9	2	62	10.5	3	8.8	9.6
South Bend	13	6.3	1	26	9.9	3	8.0	9.0
Spokane	34	15.2	1	26	9.9	0	12.4	12.4
Springfield, Mass	32	10.9	1	17	11.1	2	11.4	12.0
Syracuse	42	10.3	4	49	10.4	4	11.5	11.6
Tacoma	25	12.1	2	56	18.5	2	12.3	12.5
Toledo	72	12.6	4	38	13.6	8	11.8	12.6
Trenton	37	15.6	2	37	17.3	5	16.2	16.6
Utica	29	14.8	3	84	8.7	0	14.2	14.5
Washington, D. C.[6]	140	14.9	14	78	14.2	9	15.9	15.2
White	82	12.0	3	25	11.2	6	13.5	13.0
Colored	58	22.4	11	188	22.3	3	22.1	20.9
Waterbury	13	6.7	0	0	9.9	2	9.5	9.5
Wilmington, Del.[7]	39	19.1	5	113	14.7	4	13.8	14.4
Worcester	40	10.6	2	29	13.6	3	12.0	12.7
Yonkers	24	9.0	2	48	8.9	5	8.3	8.1
Youngstown	16	4.8	4	55	11.0	3	9.8	10.4

[1] Deaths of nonresidents are included. Stillbirths are excluded.
[2] These rates represent annual rates per 1,000 population, as estimated for 1931 and 1930 by the arithmetical method.
[3] Deaths under 1 year of age per 1,000 live births. Cities left blank are not in the registration area for births.
[4] Data for 77 cities.
[5] Deaths for week ended Friday.
[6] For the cities for which deaths are shown by color the percentages of colored population in 1930 were as follows: Atlanta, 33; Baltimore, 18; Birmingham, 38; Dallas, 17; Forth Worth, 16; Houston, 27; Indianapolis, 12; Kansas City, Kans., 19; Knoxville, 16; Louisville, 15; Memphis, 38; Miami, 23; Nashville, 26; New Orleans, 29; Richmond, 29; and Washington, D. C., 27.
[7] Population Apr. 1, 1930; decreased 1920 to 1930, no estimate made.

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Reports for Weeks Ended December 19, 1931, and December 20, 1930

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 19, 1931, and December 20, 1930

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930
New England States:								
Maine	18	5	9	2	131	37	1	0
New Hampshire	1	1				26	0	0
Vermont		3			101		0	0
Massachusetts	67	79	7	6	294	308	3	1
Rhode Island	4	7			390		0	0
Connecticut	9	14	8	2	67	77	3	0
Middle Atlantic States:								
New York	156	118	[1] 13	[1] 23	447	136	7	10
New Jersey	35	79	8	18	46	140	1	1
Pennsylvania	146	147			681	457	6	7
East North Central States:								
Ohio	92	42	7	9	59	87	1	0
Indiana	77	38	15	12	38	125	9	3
Illinois	135	173	3	8	36	290	4	11
Michigan	58	64	3	8	43	49	3	5
Wisconsin	23	21		24	39	197	1	1
West North Central States:								
Minnesota	27	20			24	5	0	1
Iowa	45	17			3	4	1	2
Missouri	102	40	4	4	6	732	8	6
North Dakota	5	2			7		0	0
South Dakota	2	13			80	2	0	0
Nebraska	15	18	4	8	6		0	0
Kansas	54	15	1	1	11	7	0	1
South Atlantic States:								
Delaware	9	3			1	2	0	0
Maryland [2]	58	32	21	14	6	38	2	1
District of Columbia	16	14	1	1		16	0	0
West Virginia	65	34	18	26	281	23	3	0
North Carolina	71	76	8	16	55	52	1	0
South Carolina [3]	13	19	406	516	36		0	0
Georgia [3]	26	16	49	81	1	25	0	2
Florida	9	24	1	1		38	1	1
East South Central States:								
Kentucky	62						1	0
Tennessee	73	19	25	76	19	29	2	1
Alabama [3]	71	43	19	91	7	61	2	0
Mississippi	21	20					0	2
West South Central States:								
Arkansas	30	5	15	28			0	0
Louisiana	44	26	9	10	8		2	1
Oklahoma [4]	72	55	43	62		45	0	2
Texas	106	55	14	60	4	51	0	1

[1] New York City only.
[2] Week ended Friday.
[3] Typhus fever, 1931, 5 cases: 2 cases in South Carolina, 1 case in Georgia, 1 case in Alabama, and 1 case in California.
[4] Figures for 1931 are exclusive of Oklahoma City and Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 19, 1931, and December 20, 1930—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930
Mountain States:								
Montana	1	5			104	1	1	1
Idaho	2				1	10	1	1
Wyoming		2		2	1	1	0	0
Colorado	3	10			4	17	0	0
New Mexico	13	10	1	16	6	76	0	0
Arizona	11	5	5	2	1	15	0	4
Utah [2]	1	2	7	18		2	0	2
Pacific States:								
Washington	4	24			100	20	1	0
Oregon	1	7	57	10	3	46	0	0
California [3]	105	61	101	73	99	223	4	5

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930
New England States:								
Maine	0	0	28	33	0	0	2	7
New Hampshire	0	0	12	1	0	0	0	1
Vermont	0	0	7	5	10	0	0	0
Massachusetts	8	8	369	206	0	0	5	4
Rhode Island	0	0	26	22	0	0	0	0
Connecticut	0	0	58	87	32	0	4	3
Middle Atlantic States:								
New York	15	3	476	464	5	4	23	16
New Jersey	5	1	142	172	0	0	3	4
Pennsylvania	9	5	468	450	0	0	28	20
East North Central States:								
Ohio	3	3	326	367	20	49	6	19
Indiana	0	0	95	199	10	71	5	5
Illinois	6	6	307	344	18	61	5	16
Michigan	3	3	240	191	14	45	8	5
Wisconsin	0	12	63	146	3	7	3	5
West North Central States:								
Minnesota	9	7	63	55	3	13	0	1
Iowa	3	3	43	90	83	33	1	3
Missouri	1	1	74	131	6	7	5	8
North Dakota	0	0	28	21	22	9	0	3
South Dakota	0	2	19	17	11	16	1	1
Nebraska	1	3	23	61	5	81	4	1
Kansas	1	1	82	50	3	33	3	5
South Atlantic States:								
Delaware	1	0	1	11	0	0	1	0
Maryland [2]	0	0	87	92	0	0	11	10
District of Columbia	0	1	25	22	0	0	0	2
West Virginia	1	2	65	53	4	9	31	18
North Carolina	3	1	99	65	1	3	8	8
South Carolina [2]	1	1	13	21	0	0	11	11
Georgia [2]	1	0	28	51	6	0	14	5
Florida	1	1	4	12	1	0	0	1
East South Central States:								
Kentucky	0	1	93	34	0	0	6	13
Tennessee	0	0	54	29	4	2	21	2
Alabama [3]	2	0	59	54	0	1	9	2
Mississippi	0	0	13	21	18	4	2	7
West South Central States:								
Arkansas	0	0	11	8	0	3	10	18
Louisiana	0	0	26	15	1	6	19	35
Oklahoma [4]	0	2	40	44	0	51	11	25
Texas	0	4	73	43	7	22	12	13

[2] Week ended Friday.
[3] Typhus fever, 1931, 5 cases: 2 cases in South Carolina, 1 case in Georgia, 1 case in Alabama, and 1 case in California.
[4] Figures for 1931 are exclusive of Oklahoma City and Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 19, 1931, and December 20, 1930—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930	Week ended Dec. 19, 1931	Week ended Dec. 20, 1930
Mountain States:								
Montana	1	0	36	25	2	26	3	0
Idaho	0	1	6	4	0	1	0	0
Wyoming	0	0	10	21	0	1	0	0
Colorado	0	0	21	10	0	0	3	0
New Mexico	0	1	8	5	0	1	2	1
Arizona	0	0	9	9	0	2	0	2
Utah [2]	0	0	18	8	0	0	1	1
Pacific States:								
Washington	1	0	50	51	10	18	0	3
Oregon	0	0	19	4	11	1	0	0
California [2]	2	19	127	84	2	54	6	10

[2] Week ended Friday.
[3] Typhus fever, 1931, 5 cases; 2 cases in South Carolina, 1 case in Georgia, 1 case in Alabama, and 1 case in California.

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
October, 1931										
Arkansas	1	233	3	182	16	26	1	116	10	76
November, 1931										
Alabama	11	397	101	175	26	20	4	247	2	89
Idaho	1	20					0	46	3	3
Indiana	3	361	21	3	138		3	415	31	27
Maryland	3	289	48	2	21		7	432	0	94
New Jersey	9	134	40	3	122		46	499	1	21
New Mexico	3	89	1	9	9	1	0	51	1	37
North Dakota	3	16	5		7		5	79	73	20
Ohio	8	568	72	3	234		20	2,005	55	135
Pennsylvania	18	508		5	1,352	2	56	1,603	0	242
Porto Rico		66	103	8,158	79	3	1		0	17
South Carolina		340	1,509	1,116	38	160	7	62	1	38
West Virginia	3	228	55		730			249	2	152

October, 1931	Cases
Arkansas:	
Chicken pox	15
Mumps	7
Trachoma	41
Whooping cough	9
November, 1931	
Anthrax:	
Ohio	1
Chicken pox:	
Alabama	67
Idaho	87
Indiana	408
Maryland	250
New Jersey	524
New Mexico	118
Chicken pox—Continued.	Cases
North Dakota	126
Ohio	1,836
Pennsylvania	2,504
Porto Rico	6
South Carolina	84
West Virginia	283
Colibacillosis:	
Porto Rico	2
Conjunctivitis:	
New Mexico	1
Dengue:	
South Carolina	7
Diarrhea:	
Maryland	25
South Carolina	332

Diarrhea and enteritis (under 2 years):	Cases
Ohio	29
Dysentery:	
Maryland	22
Ohio	1
Pennsylvania	3
Porto Rico	105
Filariasis:	
Porto Rico	31
Food poisoning:	
Ohio	5
German measles:	
Maryland	14
New Jersey	23
New Mexico	1
Ohio	12
Pennsylvania	52
Hookworm disease:	
Pennsylvania	1
South Carolina	74
Impetigo contagiosa:	
Maryland	61
North Dakota	3
Lead poisoning:	
New Jersey	1
Ohio	14
Lethargic encephalitis:	
Alabama	1
Maryland	1
New Jersey	1
Ohio	7
Pennsylvania	3
South Carolina	2
Mumps:	
Alabama	22
Idaho	72
Indiana	63
Maryland	123
New Jersey	87
New Mexico	17
North Dakota	33
Ohio	547
Pennsylvania	1,108
Porto Rico	8
South Carolina	58
Ophthalmia neonatorum:	
Maryland	3
New Jersey	4
Ohio	50
Pennsylvania	14
Porto Rico	8
South Carolina	11
Paratyphoid fever:	
Ohio	1
Porto Rico	4
South Carolina	5
Puerperal septicemia:	
Ohio	3
Pennsylvania	21
Porto Rico	8

Rabies in animals:	Cases
Maryland	2
South Carolina	9
Scabies:	
Maryland	20
Septic sore throat:	
Idaho	6
Maryland	11
New Mexico	1
Ohio	81
Tetanus:	
Maryland	3
New Jersey	1
New Mexico	1
Ohio	1
Pennsylvania	2
Porto Rico	6
Tetanus, infantile:	
Porto Rico	18
Trachoma:	
Indiana	1
Maryland	1
New Jersey	2
New Mexico	1
North Dakota	1
Ohio	6
Pennsylvania	6
Porto Rico	15
Trichinosis:	
New Jersey	2
Tularaemia:	
Indiana	1
Maryland	2
Ohio	4
West Virginia	3
Typhus fever:	
Alabama	13
South Carolina	1
Undulant fever:	
Indiana	4
Maryland	4
New Jersey	10
New Mexico	1
Ohio	3
Pennsylvania	2
Vincent's angina:	
Maryland	12
North Dakota	40
Whooping cough:	
Alabama	61
Indiana	137
Maryland	599
New Jersey	641
New Mexico	2
North Dakota	22
Ohio	1,321
Pennsylvania	1,743
Porto Rico	192
South Carolina	72
West Virginia	213
Yaws:	
Porto Rico	70

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of November, 1931 by departments of health of States named to other State health departments

Disease	California	Connecticut	Illinois	Massachusetts	Minnesota	New York
Diphtheria						1
Leprosy	1					
Lethargic encephalitis				1		
Malaria		1				
Meningococcus meningitis						1
Poliomyelitis					3	
Scarlet fever		1				
Syphilis					1	
Tuberculosis	5		4		30	
Typhoid fever	1			1	2	1
Undulent fever		1				

ADMISSIONS TO HOSPITALS FOR THE INSANE, SEPTEMBER, 1929

Reports for the month of September, 1929, showing new admissions to hospitals for the care and treatment of the insane, were received by the Public Health Service from 118 hospitals, located in 41 States, the District of Columbia, and the Territory of Hawaii. The 118 hospitals had 184,242 patients on September 30, 1929, 97,889 males and 86,353 females, the ratio being 113 males per 100 females.

The following table shows the number of new admissions for the month of September, 1929, by psychoses:

Psychoses	Number of first admissions		
	Male	Female	Total
1. Traumatic psychoses	6	1	7
2. Senile psychoses	179	132	311
3. Psychoses with cerebral arteriosclerosis	182	94	276
4. General paralysis	210	70	280
5. Psychoses with cerebral syphilis	26	13	39
6. Psychoses with Huntington's chorea	3	4	7
7. Psychoses with brain tumor	2	0	2
8. Psychoses with other brain or nervous disease	23	17	40
9. Alcoholic psychoses	131	16	147
10. Psychoses due to drugs and other exogenous toxins	9	9	18
11. Psychoses with pellagra	17	29	46
12. Psychoses with other somatic diseases	28	38	66
13. Manic-depressive psychoses	174	248	422
14. Involution melancholia	20	42	62
15. Dementia præcox (schizophrenia)	350	265	615
16. Paranoia and paranoid conditions	37	52	89
17. Epileptic psychoses	40	36	76
18. Psychoneuroses and neuroses	20	43	63
19. Psychoses with psychopathic personality	14	8	22
20. Psychoses with mental deficiency	64	58	122
21. Undiagnosed psychoses	139	79	218
22. Without psychosis	154	60	214
Total	1,828	1,314	3,142

During the month of September, 1929, there were 3,142 new admissions to the hospitals, 58.2 per cent of these being males and 41.8 per cent females, the ratio being 139 males per 100 females. Four hundred and thirty-two of the new admissions were reported as undiagnosed or "without psychosis." There were 2,710 new admissions for which provisional diagnoses were made. Of these 2,710

patients, cases of dementia præcox constituted 22.7 per cent; manic-depressive psychoses, 15.6 per cent; senile psychoses, 11.5 per cent; general paralysis, 10.3 per cent; and psychoses with cerebral arteriosclerosis, 10.2 per cent. These five classes accounted for 70.3 per cent of the new admissions for which diagnoses were given.

The following table shows the number of patients in the hospitals and on parole on September 30, 1929:

	Total patients on books		
	Male	Female	Total
Total patients on books last day of month:			
In hospitals	87,340	78,117	165,457
On parole or otherwise absent, but still on books	10,549	8,236	18,785
Total	97,689	86,353	184,242

Of the 184,242 patients, 10,549 males and 8,236 females were on parole or otherwise absent but still on the books at the end of the month—10.8 per cent of the males, 9.5 per cent of the females, and 10.2 per cent of the total number of patients.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 97 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 33,400,000. The estimated population of the 90 cities reporting deaths is more than 31,855,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended December 12, 1931, and December 13, 1930

	1931	1930	Estimated expectancy
Cases reported			
Diphtheria:			
46 States	2,225	1,718	----
97 cities	593	550	964
Measles:			
45 States	3,306	3,213	----
97 cities	755	1,021	----
Meningococcus meningitis:			
46 States	81	121	----
97 cities	35	47	----
Poliomyelitis:			
46 States	97	80	----
Scarlet fever:			
46 States	4,059	4,271	----
97 cities	1,426	1,409	1,123
Smallpox:			
46 States	264	493	----
97 cities	24	90	27
Typhoid fever:			
46 States	368	344	----
97 cities	57	50	47
Deaths reported			
Influenza and pneumonia:			
90 cities	647	693	----
Smallpox:			
90 cities	0	0	----

City reports for week ended December 12, 1931

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding weeks of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1922 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND								
Maine:								
Portland	5	0	2		0	26	1	3
New Hampshire:								
Concord	0	0	0		0	0	0	0
Nashua	0	1	0		0	0	0	0
Vermont:								
Barre	0	0	0		0	0	0	0
Massachusetts:								
Boston	42	39	20	4	0	1	16	11
Fall River	3	4	2	1	1	0	0	0
Springfield	11	5	0		0	0	10	0
Worcester	16	6	0		0	0	69	1
Rhode Island:								
Pawtucket	0	2	0		0	0	0	0
Providence	2	9	4	3	0	245	15	7
Connecticut:								
Bridgeport	10	5	1	1	1	0	1	3
Hartford	4	6	0		0	0	4	1
New Haven	40	1	0		0	1	12	2
MIDDLE ATLANTIC								
New York:								
Buffalo	33	15	4		1	4	1	15
New York	114	174	101	11	6	17	34	137
Rochester	8	4	2		0	32	8	5
Syracuse	10	2	0		0	0	1	2
New Jersey:								
Camden	7	6	7		0	0	0	0
Newark	27	17	2	6	0	2	8	7
Trenton	1	2	2	1	1	1	23	2
Pensylvania:								
Philadelphia	100	57	5	8	6	3	13	45
Pittsburgh	48	20	9	2	4	139	41	27
Reading	13	2	0		0	0	1	1
Scranton	3	5	0		0	0	0	0
EAST NORTH CENTRAL								
Ohio:								
Cincinnati	19	12	8		0	1	0	8
Cleveland	165	29	11	11	1	13	73	7
Columbus	8	6	12		0	1	2	0
Toledo	81	8	3	1	1	1	0	2
Indiana:								
Fort Wayne	0	4	7		0	0	0	2
Indianapolis	79	19	3		0	1	47	10
South Bend	5	1	0		0	0	0	0
Terre Haute	3	1	3		0	0	0	1
Illinois:								
Chicago	96	121	64	11	4	12	3	51
Peoria	9		4		0	1	0	1
Springfield	2	2	1		0	1	0	1
Michigan:								
Detroit	51	55	30	3	0	6	5	20
Flint	23	2	0		0	1	41	1
Grand Rapids	4	1	0		0	0	0	1

City reports for week ended December 12, 1931—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued								
Wisconsin:								
Kenosha	4	1	1		0	1	1	0
Madison	11	2	5			0	1	
Milwaukee	59	15	2		0	9	50	5
Racine	22	2	0		0	0	26	0
Superior	14	1	0		0	0	8	1
WEST NORTH CENTRAL								
Minnesota:								
Duluth	7	0	0		0	0	0	1
Minneapolis	74	18	8		1	4	28	5
St. Paul	26	6	5		0	0	0	6
Iowa:								
Davenport	4	0	0			0	0	
Des Moines	2	2	10			1	0	
Sioux City	13	1	6			0	0	
Waterloo	18	0	2			1	1	
Missouri:								
Kansas City	25	8	12		0	2	0	10
St. Joseph	6	1	4		0	0	1	3
St. Louis	19	42	30	1		0	1	5
North Dakota:								
Fargo	11	0	0		1	13	0	0
Grand Forks	7	0	0			0	0	
South Dakota:								
Aberdeen	33	0	0			22	0	
Nebraska:								
Omaha	22	8	9		0	2	2	5
Kansas:								
Topeka	4	1	2		0	1	1	0
Wichita	15	2	10		0	1	0	3
SOUTH ATLANTIC								
Delaware:								
Wilmington	4	2	1		0	2	0	3
Maryland:								
Baltimore	23	24	15	11	1	5	31	21
Cumberland	0	1	0		0	0	0	1
Frederick	0	1	6		0	0	0	0
District of Columbia:								
Washington	4	18	11	2	2	2	0	11
Virginia:								
Lynchburg	1	3	3		0	0	2	1
Norfolk	0	2	5		0	0	1	1
Richmond	0	12	8		1	0	0	5
Roanoke	7	3	2		0	0	0	4
West Virginia:								
Charleston	18	1	2		0	0	0	5
Huntington	1		5		0	0	0	0
Wheeling	6	1	0		0	1	0	2
North Carolina:								
Raleigh	1	2	2		0	1	0	1
Wilmington	3	2	0		0	0	0	1
Winston-Salem	1	3	1		1	0	1	1
South Carolina:								
Charleston	0	0	0	33	0	0	0	4
Columbia	0	1	0		0	0	0	2
Greenville	0		0		0	0	0	0
Georgia:								
Atlanta	5	7	3	12	0	0	0	5
Brunswick	0	0	0		0	0	1	1
Savannah	0	3	6		1	0	0	2
Florida:								
Miami	1	2	1		0	1	0	1
Tampa	0	2	0	1	0	0	0	1
EAST SOUTH CENTRAL								
Kentucky:								
Covington	2	1	1		0	0	0	2
Lexington	0		3		0	1	1	1

City reports for week ended December 12, 1931—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL—continued								
Tennessee:								
Memphis	4	7	18		0	0	1	4
Nashville	1	2	1		2	0	0	5
Alabama:								
Birmingham	2	7	6	7	1	1	0	6
Mobile	0	3	1		1	0	0	1
Montgomery	0	2	1	2		2	2	
WEST SOUTH CENTRAL								
Arkansas:								
Fort Smith	0	1	3			0	0	
Little Rock	0	1	5		0	0	0	5
Louisiana:								
New Orleans	0	15	17	3	1	0	0	14
Shreveport	6	1	5		0	5	1	0
Oklahoma:								
Muskogee	0		12		0	0	6	0
Texas:								
Dallas	4	18	25	1	1	0	0	4
Fort Worth	0	7	11		0	0	0	2
Galveston	0	1	3		0	0	0	0
Houston	0	10	21		0	0	1	3
San Antonio	0	5	6		0	0	0	4
MOUNTAIN								
Montana:								
Billings	0	0	0		0	61	1	0
Great Falls	3	0	0		0	0	0	1
Helena	0	0	0		0	28	0	0
Missoula	0	0	0	1	1	0	0	0
Idaho:								
Boise	3	0	0		0	0	1	0
Colorado:								
Denver	36	9	2		3	1	5	8
Pueblo	9	0	0		0	1	0	0
New Mexico:								
Albuquerque	9	0	0		0	0	0	1
Arizona:								
Phoenix	0	0	0		0	0	0	4
Utah:								
Salt Lake City	61	4	1		0	2	1	1
Nevada:								
Reno	0	0	0		0	0	0	0
PACIFIC								
Washington:								
Seattle	44	5	0			53	7	
Spokane	14	1	0			2	0	
Tacoma	23	3	0		0	3	6	5
Oregon:								
Portland	25	11	0		0	4	5	10
Salem	5	0	0	3	0	0	0	1
California:								
Los Angeles	56	34	29	53	3	2	33	27
Sacramento	6	3	2		0	40	1	8
San Francisco	69	13	0	22	3	7	2	14

City reports for week ended December 12, 1931—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	2	4	0	0	0	0	0	0	0	3	23
New Hampshire:											
Concord	1	6	0	0	0	1	0	0	0	0	11
Nashua	0	0	0	0	0	0	0	0	0	0	---
Vermont:											
Barre	0	0	0	0	0	1	0	0	0	1	1
Massachusetts:											
Boston	63	83	0	0	0	15	1	3	0	37	210
Fall River	3	12	0	0	0	1	0	0	0	4	22
Springfield	6	8	0	0	0	0	1	1	0	1	24
Worcester	12	25	0	0	0	1	0	0	0	16	40
Rhode Island:											
Pawtucket	2	0	0	0	0	0	0	0	0	0	20
Providence	11	14	0	0	0	3	0	0	0	1	81
Connecticut:											
Bridgeport	7	4	0	3	0	2	0	0	0	1	25
Hartford	6	5	0	0	0	2	1	0	0	3	42
New Haven	3	4	0	0	0	0	0	0	0	8	59
MIDDLE ATLANTIC											
New York:											
Buffalo	23	41	1	0	0	2	1	0	0	27	148
New York	138	163	0	0	0	68	12	10	3	73	1,392
Rochester	9	48	0	0	0	1	1	0	0	7	65
Syracuse	9	11	0	0	0	0	0	0	0	68	42
New Jersey:											
Camden	4	8	0	0	0	0	0	0	0	3	40
Newark	14	10	0	0	0	0	1	0	1	36	99
Trenton	3	5	0	0	0	3	0	0	0	0	37
Pennsylvania:											
Philadelphia	70	91	0	0	0	24	3	1	1	109	434
Pittsburgh	39	63	0	0	0	2	0	2	1	25	170
Reading	3	4	0	0	0	0	0	0	0	4	17
Scranton	---	10	---	0	0	0	---	0	0	1	---
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	17	45	0	0	0	9	1	1	0	4	130
Cleveland	35	51	1	0	0	13	1	1	0	123	140
Columbus	11	14	0	0	0	1	0	0	0	15	63
Toledo	12	6	0	6	0	4	0	0	0	33	72
Indiana:											
Fort Wayne	3	1	0	0	0	1	0	1	0	1	28
Indianapolis	13	4	3	0	0	3	0	0	0	12	---
South Bend	3	1	0	0	0	0	0	0	0	0	13
Terre Haute	3	2	0	0	0	0	0	0	0	0	10
Illinois:											
Chicago	112	189	1	4	0	47	2	2	0	179	688
Peoria	---	4	---	0	0	1	---	0	0	22	23
Springfield	2	6	0	0	0	1	0	0	0	1	25
Michigan:											
Detroit	88	95	0	0	0	19	1	0	1	94	238
Flint	11	14	0	0	0	0	0	0	0	13	12
Grand Rapids	9	7	0	0	0	0	0	0	0	6	27
Wisconsin:											
Kenosha	2	3	0	0	0	0	0	0	0	1	7
Madison	3	1	0	0	---	---	0	0	---	2	---
Milwaukee	21	27	0	0	0	5	0	0	0	100	88
Racine	4	1	0	0	0	0	0	0	0	7	10
Superior	3	2	0	0	0	1	0	0	0	0	9
WEST NORTH CENTRAL											
Minnesota:											
Duluth	9	2	0	0	0	0	0	0	0	2	19
Minneapolis	43	18	0	0	0	2	1	1	0	15	96
St. Paul	20	5	1	0	0	0	1	0	0	2	60

City reports for week ended December 12, 1931—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL—continued											
Iowa:											
Davenport	1	2	1	0	----	----	0	0	----	0	----
Des Moines	10	5	1	0	----	----	0	0	----	0	87
Sioux City	1	3	1	7	----	----	0	1	----	6	----
Waterloo	2	1	0	0	----	----	0	0	----	2	----
Missouri:											
Kansas City	14	12	0	0	0	5	0	0	0	14	106
St. Joseph	3	2	1	0	0	0	0	0	0	1	21
St. Louis	36	19	1	0	0	14	2	0	0	52	187
North Dakota:											
Fargo	3	2	0	0	0	0	0	0	0	1	4
Grand Forks	0	0	0	0	----	----	0	0	----	0	----
South Dakota:											
Aberdeen	0	2	0	0	----	----	0	0	----	0	----
Nebraska:											
Omaha	7	9	2	0	0	2	0	1	1	0	50
Kansas:											
Topeka	2	0	0	0	0	1	0	0	0	5	22
Wichita	4	2	0	0	0	1	0	0	0	1	26
SOUTH ATLANTIC											
Delaware:											
Wilmington	5	1	0	0	0	3	0	0	0	3	39
Maryland:											
Baltimore	25	17	0	0	0	18	2	4	0	132	196
Cumberland	1	4	0	0	0	2	0	0	0	0	15
Frederick	1	4	0	0	0	0	1	3	0	0	4
District of Col.:											
Washington	19	21	0	0	0	12	0	1	1	16	140
Virginia:											
Lynchburg	3	2	0	0	0	0	0	1	0	7	11
Norfolk	3	3	0	0	0	1	0	0	0	0	----
Richmond	8	15	0	0	0	2	1	0	0	0	51
Roanoke	3	1	0	0	0	0	1	0	0	0	18
West Virginia:											
Charleston	2	1	0	0	0	0	0	[1]3	1	8	22
Huntington	----	3	----	0	0	0	----	0	0	0	----
Wheeling	2	4	0	0	0	0	0	0	0	3	17
North Carolina:											
Raleigh	1	2	0	0	0	1	0	0	0	0	19
Wilmington	0	1	0	0	0	0	0	0	0	7	7
Winston-Salem	3	2	0	0	0	2	0	0	0	2	20
South Carolina:											
Charleston	1	0	0	0	0	3	1	0	0	0	25
Columbia	0	0	0	0	0	2	0	0	0	0	13
Greenville	----	2	----	0	0	0	----	0	0	0	----
Georgia:											
Atlanta	6	8	1	0	0	4	0	1	0	0	56
Brunswick	0	0	0	0	0	0	0	0	0	0	4
Savannah	1	3	1	0	0	1	0	2	0	0	29
Florida:											
Miami	2	0	0	0	0	2	0	0	0	0	24
Tampa	0	3	0	0	0	0	0	1	0	0	21
EAST SOUTH CENTRAL											
Kentucky:											
Covington	4	9	0	0	0	0	0	0	0	0	12
Lexington	----	1	----	0	0	1	----	0	0	3	21
Tennessee:											
Memphis	7	11	0	0	0	4	1	0	0	26	77
Nashville	2	5	0	0	0	1	1	2	0	5	56
Alabama:											
Birmingham	4	6	1	0	0	6	1	1	0	0	55
Mobile	0	5	0	0	0	1	0	0	0	0	18
Montgomery	0	7	0	0	----	----	0	0	----	0	----
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0	----	----	0	1	----	0	----
Little Rock	2	2	0	0	0	3	0	0	0	4	8
Louisiana:											
New Orleans	8	16	0	3	0	11	2	5	1	1	136
Shreveport	2	2	0	0	0	1	1	0	0	2	28

[1] 2 nonresidents.

City reports for week ended December 12, 1931—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL—continued											
Oklahoma:											
Muskogee	-------	1	-------	1	0	0	-------	0	0	6	-------
Texas:											
Dallas	8	14	1	0	0	1	0	2	0	0	54
Forth Worth	2	11	0	0	0	2	0	1	0	1	32
Galveston	0	0	0	0	0	0	1	0	0	0	-------
Houston	3	3	1	2	0	5	0	2	0	0	48
San Antonio	2	5	0	0	0	6	0	0	0	0	55
MOUNTAIN											
Montana:											
Billings	1	1	1	0	0	0	0	0	0	0	7
Great Falls	2	1	0	0	0	0	0	0	0	0	7
Helena	1	0	0	0	0	0	0	0	0	0	4
Missoula	1	1	1	0	0	0	0	0	0	0	5
Idaho:											
Boise	1	0	0	0	0	0	0	0	0	0	3
Colorado:											
Denver	14	17	0	0	0	7	0	0	0	9	66
Pueblo	1	1	0	0	0	0	1	0	0	2	3
New Mexico:											
Albuquerque	1	1	0	0	0	5	0	1	0	1	13
Arizona:											
Phoenix	-------	0	-------	0	0	2	-------	0	0	0	12
Utah:											
Salt Lake City	2	9	1	0	0	3	0	0	0	0	31
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	1
PACIFIC											
Washington:											
Seattle	9	10	0	2	-------	-------	1	2	-------	2	-------
Spokane	8	3	4	0	-------	-------	0	0	-------	0	-------
Tacoma	4	4	2	0	0	0	0	0	0	8	25
Oregon:											
Portland	8	3	5	0	0	2	1	3	0	0	83
Salem	1	0	0	0	0	0	0	0	0	2	15
California:											
Los Angeles	29	51	1	0	0	21	2	1	1	23	363
Sacramento	3	3	0	0	0	6	0	0	0	2	47
San Francisco	16	7	0	3	0	12	1	0	0	3	161

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Fellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cascs	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	1	0	0	0	1	0	1	1	0
Fall River	1	1	0	0	0	0	0	0	0
Rhode Island:									
Providence	0	0	1	0	0	0	0	2	0
Connecticut:									
Hartford	0	0	0	0	0	0	0	1	0
New Haven	0	0	0	0	0	0	0	1	1
MIDDLE ATLANTIC									
New York:									
New York	7	6	1	0	0	0	2	3	3
Rochester	1	0	0	0	0	0	0	0	0
New Jersey:									
Camden	0	0	0	0	0	0	0	1	0
Newark	1	0	0	0	0	0	1	0	0
Pennsylvania:									
Philadelphia	2	0	0	0	0	0	0	5	0
Pittsburgh	0	0	0	0	0	0	0	1	1

City reports for week ended December 12, 1931—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL									
Ohio:									
Columbus	0	1	0	0	0	0	0	0	0
Indiana:									
Indianapolis	4	0	0	0	0	0	0	0	0
Illinois:									
Chicago	4	3	1	0	0	0	0	3	0
Peoria	0	0	0	0	0	0	0	1	0
Michigan:									
Detroit	0	0	1	0	0	0	0	1	1
Flint	1	1	0	0	0	0	0	0	0
Grand Rapids	1	1	0	0	0	0	0	0	0
Wisconsin:									
Madison	1	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	0	0	0	0	0	0	0	1	0
St. Paul	0	0	0	0	0	0	0	2	0
Missouri:									
Kansas City	0	0	0	0	1	0	0	0	0
St. Louis	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	0	0	0	0	0	1	1	0	0
District of Columbia:									
Washington	1	0	0	0	0	0	0	0	0
Virginia:									
Norfolk	1	0	0	0	0	0	0	0	0
North Carolina:									
Raleigh	0	0	0	0	1	3	0	0	0
Winston-Salem	0	0	0	0	1	1	0	0	0
South Carolina:									
Charleston [1]	0	0	0	0	2	0	0	0	0
Georgia:									
Atlanta	1	1	0	0	0	0	0	1	1
Savannah [1]	0	0	0	0	1	1	0	0	0
Florida:									
Miami	0	0	0	0	0	1	0	0	0
Tampa [1]	1	0	1	0	0	0	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Lexington	0	0	0	0	0	1	0	0	0
Tennessee:									
Memphis	1	0	0	0	0	0	0	0	0
Alabama:									
Birmingham	0	0	0	0	1	1	0	1	0
WEST SOUTH CENTRAL									
Texas:									
Galveston	1	0	0	0	0	0	0	0	0
Houston	0	1	0	0	0	0	0	0	0
MOUNTAIN									
Utah:									
Salt Lake City	1	1	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	1	0	0	0	0	0	0	0	0
Oregon:									
Portland	0	0	1	0	0	0	1	0	0
California:									
Los Angeles	1	1	0	0	1	1	1	0	0
San Francisco	3	0	0	0	0	0	0	0	2

[1] Typhus fever, 5 cases and 1 death: 1 case and 1 death at Charleston, S. C.; 1 case at Savannah, Ga.; and 3 cases at Tampa, Fla.

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended December 12, 1931, compared with those for a like period ended December 13, 1930. The population figures used in computing the rates are estimated midyear populations for 1930 and 1931, respectively, derived from the 1930 census. The 98 cities reporting cases have an estimated aggregate population of more than 33,000,000. The 91 cities reporting deaths have more than 31,500,000 estimated population.

Summary of weekly reports from cities, November 8 to December 12, 1931—Annual rates per 100,000 population compared with rates for the corresponding period of 1930 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Nov. 14, 1931	Nov. 15, 1930	Nov. 21, 1931	Nov. 22, 1930	Nov. 28, 1931	Nov. 29, 1930	Dec. 5, 1931	Dec. 6, 1930	Dec. 12, 1931	Dec. 13, 1930
98 cities	96	89	96	100	84	87	101	[2] 90	93	[2] 87
New England	50	82	70	123	67	87	58	121	70	128
Middle Atlantic	52	44	53	52	58	48	54	58	59	47
East North Central	80	128	91	124	71	122	94	112	86	120
West North Central	184	107	174	110	138	110	222	101	168	97
South Atlantic	146	120	172	154	144	66	164	112	118	122
East South Central	227	185	169	275	145	138	163	143	163	138
West South Central	233	160	206	171	206	153	244	[2] 147	287	[2] 132
Mountain	61	26	17	26	26	79	52	18	26	26
Pacific	127	63	98	63	67	95	88	65	61	55

MEASLES CASE RATES

98 cities	55	91	85	126	90	107	113	[2] 142	118	[2] 162
New England	238	172	233	179	315	162	481	220	656	273
Middle Atlantic	38	68	92	76	82	69	111	85	89	85
East North Central	18	17	29	31	15	28	31	28	28	26
West North Central	17	502	19	767	13	649	27	953	46	1,077
South Atlantic	10	26	34	64	28	44	43	62	22	80
East South Central	12	18	29	149	35	66	35	155	17	299
West South Central	24	0	10	3	24	10	27	[2] 11	17	[2] 11
Mountain	400	308	757	326	1,236	282	757	53	800	150
Pacific	135	32	149	28	123	10	180	26	210	26

SCARLET FEVER CASE RATES

98 cities	170	187	187	195	155	174	179	[2] 202	222	[2] 224
New England	221	276	260	237	262	264	293	268	397	259
Middle Atlantic	131	126	163	159	147	148	155	178	199	186
East North Central	215	287	241	263	169	221	229	257	281	315
West North Central	149	143	132	219	117	139	161	198	143	209
South Atlantic	239	154	259	216	176	188	172	230	176	260
East South Central	198	275	145	209	122	215	128	299	250	377
West South Central	122	118	78	94	95	132	108	[2] 92	142	[2] 84
Mountain	313	388	218	282	191	229	218	141	261	211
Pacific	96	99	129	87	108	83	100	97	153	71

SMALLPOX CASE RATES

98 cities	1	4	1	3	2	8	5	[2] 7	4	[2] 14
New England	0	0	0	0	0	0	55	0	7	0
Middle Atlantic	0	0	0	0	0	0	1	0	0	0
East North Central	0	2	0	0	0	4	0	1	2	3
West North Central	4	21	10	23	11	68	4	48	13	122
South Atlantic	0	0	0	0	0	0	0	0	0	0
East South Central	6	0	0	0	6	0	0	0	0	0
West South Central	3	3	0	3	20	3	3	[2] 4	17	[2] 7
Mountain	9	0	0	44	0	35	0	106	0	150
Pacific	4	18	6	6	6	8	10	10	10	6

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1931, and 1930, respectively.
[2] Shreveport, La., not included.

Summary of weekly reports from cities, November 8 to December 12, 1931—Annual rates per 100,000 population compared with rates for the corresponding period of 1930—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Nov. 14, 1931	Nov. 15, 1930	Nov. 21, 1931	Nov. 22, 1930	Nov. 28, 1931	Nov. 29, 1930	Dec. 5, 1931	Dec. 6, 1930	Dec. 12, 1931	Dec. 13, 1930
98 cities	12	15	12	15	7	10	7	[1]10	9	[1]8
New England	7	24	10	17	2	12	5	7	10	19
Middle Atlantic	6	4	8	5	4	3	5	8	6	6
East North Central	11	5	5	9	5	4	4	10	3	7
West North Central	13	19	8	23	8	8	4	6	6	6
South Atlantic	36	34	24	28	34	32	16	18	32	4
East South Central	23	48	41	13	6	12	12	12	17	18
West South Central	24	87	41	84	7	70	27	[1]26	34	[1]22
Mountain	0	26	9	53	0	9	26	9	0	0
Pacific	10	10	18	10	2	6	10	10	6	6

INFLUENZA DEATH RATES

91 cities	8	9	7	10	7	9	7	[1]9	8	[1]9
New England	14	5	7	7	0	2	2	5	5	5
Middle Atlantic	10	8	6	7	9	11	4	6	8	7
East North Central	2	9	4	5	5	7	6	8	3	5
West North Central	6	6	6	6	3	0	6	12	6	21
South Atlantic	6	6	12	24	6	10	6	20	12	24
East South Central	0	39	25	13	13	26	38	13	25	26
West South Central	7	28	10	36	17	14	7	[1]34	7	[1]11
Mountain	27	9	17	62	26	26	9	18	35	9
Pacific	12	5	5	7	7	7	19	2	14	7

PNEUMONIA DEATH RATES

91 cities	86	115	101	116	86	109	89	[1]99	98	[1]106
New England	101	114	84	126	99	77	91	73	67	119
Middle Atlantic	106	129	116	133	98	118	95	101	108	104
East North Central	52	85	70	82	52	78	56	77	66	86
West North Central	88	78	115	138	106	93	88	132	112	150
South Atlantic	97	172	152	156	122	180	146	154	140	134
East South Central	151	188	183	175	107	136	95	155	113	123
West South Central	55	103	79	114	66	153	135	[1]128	104	[1]162
Mountain	148	220	174	167	122	229	122	132	87	159
Pacific	70	67	50	50	74	70	77	60	130	60

[1] Shreveport, La., not included.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended December 5, 1931.—The Bureau of Pensions and National Health of Canada reports cases of certain communicable diseases for the week ended December 5, 1931, as follows:

Province	Cerebro-spinal fever	Influenza	Polio-myelitis	Smallpox	Typhoid fever
Prince Edward Island[1]					
Nova Scotia		8	1		1
New Brunswick					1
Quebec			9		11
Ontario	1		1	5	23
Manitoba					4
Saskatchewan				9	
Alberta				1	
British Columbia[1]					
Total	1	8	11	15	40

[1] No case of any disease included in the table was reported during the week.

Quebec Province—Communicable diseases—Week ended December 5, 1931.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended December 5, 1931, as follows:

Disease	Cases	Disease	Cases
Chicken pox	106	Poliomyelitis	9
Diphtheria	56	Scarlet fever	79
Erysipelas	2	Tuberculosis	27
German measles	3	Typhoid fever	11
Measles	159	Whooping cough	23
Mumps	27		

CUBA

Provinces—Communicable diseases—Four weeks ended October 24, 1931.—During the four weeks ended October 24, 1931, cases of certain communicable diseases were reported in Cuba as follows:

Disease	Pinar del Rio	Habana	Matan-zas	Santa Clara	Cama-guey	Oriente	Total
Diphtheria		14		5	1		20
Malaria		16		1	24	22	63
Measles		70	6	19	1		96
Paratyphoid fever			3	5			8
Poliomyelitis		2					2
Scarlet fever		4	1	2			7
Typhoid fever		15	6	18	4	10	53

JAMAICA

Communicable diseases—Four weeks ended December 5, 1931.—During the four weeks ended December 5, 1931, cases of certain communicable diseases were reported in Kingston, Jamaica, and in the island of Jamaica outside of Kingston, as follows:

Disease	Kingston	Other localities	Disease	Kingston	Other localities
Cerebrospinal meningitis	1	2	Lethargic encephalitis		1
Chicken pox	2	28	Puerperal fever		2
Dysentery	2	6	Smallpox (alastrim)		1
Erysipelas		1	Tuberculosis	35	60
Leprosy		3	Typhoid fever	5	71

MEXICO

Tampico—Communicable diseases—November, 1931.—During the month of November, 1931, certain communicable diseases were reported in Tampico, Mexico, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria	6	2	Paratyphoid fever		2
Dysentery		50	Smallpox	1	
Influenza	19		Tuberculosis	66	20
Leprosy	2		Typhoid fever	3	4
Malaria	953	25	Whooping cough	18	

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

From medical officers of the Public Health Service, American consuls, International Office of Public Hygiene, Pan American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases; D, deaths; P, present]

Place		Week ended— May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Aug. 23–Sept. 19, 1931	Sept. 26, 1931	October, 1931					November, 1931				December, 1931		
							3	10	17	24	31	7	14	21	28	5	12	19
Ceylon: Colombo	C	1		3											1	1		
	D	1		3											1	1		
China:																		
Canton	C	1			2											3		
Hankow	C							8		5	18			6				
	D							6			1			4				
Shanghai	C		1	7	125	35	29	17	17	8								
	D				9	5	8			4								
Swatow	C	10	7															
Tientsin	C	10																
	D	1																
India	C	18,001	22,074	36,514	39,223	7,552	10,172	4,556										
	D	10,337	12,093	20,276	21,683	3,716	4,808	2,450										
Bombay	C		23	44	42	1	1	2		4	1			1	3			
	D		16	25	17		1	2			1			1	4			
Calcutta	C	292	237	110	46	18	23	3	7	14	13	19	28	22	19			
	D	168	155	30	15	6	12		5	9	4	10	14	10	11			
Chittagong	C								1									
Karikal	C			1	2	1												
	D			1	2													
Madras	C	9	4	6	5													
	D	4																
Moulmein	C		1															
	D		1															
Negapatam	C				1													
Rangoon	C	4	4	1		1				1								
	D	2	1	1		1				1								
Vizagapatam	C	1																
India (French):																		
Chandernagor	C	3	5	7	2	1				1								
	D	3	1	7	2	1				1								
Pondicherry	C	3	3	3	4		1											
	D	3	3	2	2													

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

CHOLERA—Continued

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Aug. 23–Sept. 19, 1931	Week ended— Sept. 26, 1931	October, 1931					November, 1931				December, 1931		
							3	10	17	24	31	7	14	21	28	5	12	19
India (Portuguese)	C	1	2	2	34	-------	17	19	39	18	20	-------	-------	-------	-------	-------	-------	-------
	D	-------	1	2	18	-------	10	4	12	3	6	-------	-------	-------	-------	-------	-------	-------
Indo-China (see also table below):																		
Cochin-China—Rachgia	C	-------	-------	P	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Pnompenh	C	1	5	2	2	-------	1	-------	-------	-------	2	2	-------	-------	-------	-------	-------	-------
	D	1	2	1	2	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Saigon and Cholon	C	61	14	-------	-------	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	P
	D	41	7	-------	-------	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Iraq:																		
Abulkhasib	C	-------	-------	-------	6	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	-------	-------	-------	5	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Amara	C	-------	-------	2	66	-------	-------	2	2	2	-------	-------	3	3	-------	-------	-------	-------
	D	-------	-------	1	59	-------	-------	-------	1	1	-------	-------	2	4	-------	-------	-------	-------
Amara Province	C	-------	-------	-------	96	32	21	15	27	13	7	15	-------	-------	3	-------	-------	-------
	D	-------	-------	-------	120	29	24	14	17	10	6	8	-------	-------	2	-------	-------	-------
Basra	C	-------	-------	547	293	77	19	29	32	38	30	9	1	-------	-------	-------	-------	-------
	D	-------	-------	287	154	34	11	13	26	7	18	10	1	-------	-------	-------	-------	-------
Basra Province	C	-------	-------	5	53	26	14	1	1	3	7	-------	-------	-------	-------	-------	-------	-------
	D	-------	-------	2	30	9	8	1	1	1	4	-------	-------	-------	-------	-------	-------	-------
Dinwaniyah	C	-------	-------	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Dinwaniyah Province	C	-------	-------	-------	-------	15	8	14	24	22	1	-------	-------	-------	-------	-------	-------	-------
	D	-------	-------	-------	-------	11	6	5	22	10	5	-------	-------	-------	-------	-------	-------	-------
Iwaniyah	C	-------	-------	-------	-------	22	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	-------	-------	-------	-------	15	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Kut Province	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	17	3	-------	-------	-------	-------	-------	-------
	D	-------	-------	-------	-------	-------	-------	-------	-------	-------	12	2	-------	-------	-------	-------	-------	-------
Muntafiq Province	C	-------	-------	-------	225	55	54	45	55	17	19	9	23	1	1	-------	-------	-------
	D	-------	-------	-------	145	38	57	28	37	10	18	6	17	3	-------	-------	-------	-------
Nasiriyah	C	-------	-------	-------	88	4	4	18	7	4	7	6	7	2	6	-------	-------	-------
	D	-------	-------	-------	75	3	4	18	3	3	6	3	6	-------	7	-------	-------	-------
Suqelshuyukh	C	-------	-------	-------	2	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	-------	-------	-------	2	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Japan: Taiwan—Kelung	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	2	-------	-------	-------	-------	-------	-------
Persia:[1]																		
Abadan	C	-------	-------	-------	-------	-------	-------	-------	1	-------	3	-------	-------	1	-------	-------	-------	-------

Ahwaz	C								12		84	16	3		9	37	1		
	D								7		69	21	8		7	31	1		
Khorramabad	C													18	16	80	45		
	D													10	10	65	30		
Mohammerah	C								1										
Philippine Islands: [2]																			
Provinces—																			
Capiz	C	4			35	49	21	5	4		7	5			4	16	7	13	
	D	4			16	35	16	5	3		5	4			4	10	5	10	
Cebu	C			3															
	D			3															
Iloilo	C	26	27																
	D	21	25																
Negros, Occidental	C	2																	
	D	1																	
Siam	C	4	3	1	1														
	D	2	1		1														
Bangkok	C	1	4	1	1														
	D	1	2																
On vessel:																			
S. S. City of Eastborne, at Calcutta, from Cocanada	C	1																	
S. S. Tairea, at Penang, from Calcutta	C	1																	
S. S. Bandar Shalpour, at Bushire, Persia, from Basra	C		1																
	D		1																
S. S. Kohistan, at Basra, from Bushire, Persia	C		2																
S. S. Cathay, at Kobe, Japan, from Shanghai	C			4															
	D			1															
S. S. Kasagi Maru, at Moji, from Shanghai	C				1														
S. S. Ankoo, at Nagasaki, from Shanghai	C				2														
	D				1														

[1] On Oct. 23, 1931, cholera was reported at Mohammerah, Abadan, and Ahwaz, Persia. During the period from Oct. 22 to Nov. 7, 1931, 141 cases and 97 deaths were reported. The diagnosis of cholera was not confirmed upon bacteriological examination.

[2] Figures for cholera in the Philippine Islands are subject to correction.

Place		May, 1931	June, 1931	July, 1931	August, 1931			September, 1931			October, 1931			Nov. 1-10, 1931
					1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31	
Indo-China (French) (see also table above):														
Cambodia [1]	C	117	308	241	12				8	6	1	16	2	8
	D	63	109	60	2				4	3	1	16	1	
Cochin-China [1]	C	174	140	143	39				9	9	11	2	1	5
	D	133	106	42	32				6	7	10	2	1	4

[1] Reports incomplete.

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

PLAGUE

[C indicates cases; D deaths; P present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Aug. 23–Sept. 19, 1931	Week ended— Sept. 26, 1931	October, 1931					November, 1931				December, 1931		
							3	10	17	24	31	7	14	21	28	5	12	19
Algeria:																		
Algiers	C			2														
Bone	C	1																
•Philippeville	C		1	2														
	D		1	1														
Argentina: San Juan Province	C		P															
Belgian Congo	C	1																
	D	1																
British East Africa (see also table below):																		
Tanganyika	C	17	6	8	4	8	2		3									
	D	10	6	2	4	4			1									
Uganda	C	298	418	285	289	83	62	67	64	71								
	D	286	400	281	207	82	63	67	58	69								
Ceylon: Colombo	C	2	1	6	3	1	1	2							1			
	D	2	1	6	3	1	1	1							1	1		
Plague-infected rats				8														
Chile: Santiago	C								1									
	D								1									
China:[1]																		
Shansi Province[2]	C																	
Shensi Province[2]	C																	
Dutch East Indies:																		
Batavia and West Java	C	116	75	58	65	21	31		29	28	34	38						
	D	66	75	58	65	21	31		29	28	34	38						
Java and Madura	D	192	212	205	233	77	69	85	94	97	133	132						
Ecuador (see table below).																		
Egypt:																		
Alexandria	C	4	13	9	5	1				1	1	3	1		1	1	1	
	D	4	5	3	2							1	1	1	1			
Assiout	C	11															1	1
	D	1																1
Beheira	C				2													
Dakahlia	C		1	2														
Deirout	C	3																
	D	1																
Gharbieh	C	1																
	D	1																

Girga	C		1													1		1	
Kena	C													2			2		
	D													1			2		
Minieh	C	3	12									1	3			1	1		
	D	1	4									1	1						
Port Said	C	3	5	2						1			1	2		2			
	D	2	1											2					
Tanta	C			2	2									2					
	D													2					
France: Rouen—Devilleles	C										P								
Hawaii Territory:																			
Hawaii—Hamakua—Plague-infected rats				1															
Maui Island—																			
Hallimaile—Plague-infected rats					1														
Kula District	C			1															
	D			1															
Makawao—Plague-infected rats					1														
Paia—Plague-infected rats						1													
Paaulo—Plague-infected rats																			
India	C	88	221	684	1,832	723	527	600			1								
	D	51	128	440	772	355	222	263											
Bassein	C		4	2	4	1				1									
	D		3	2	4	1				1									
Bombay	C		12					1		1						1			
	D		6					1								1			
Plague-infected rats		37	48	47	57	9	9	12	12	4		11	7	11	13				
Burma	C		16																
	D		10																
Madras Presidency	C	6	21		376		62	30	90			49							
	D	1	9		162		16	30	59			17							
Moulmein	C		9		5														
	D		1		9	2													
Rangoon	C	1	2	1	3					5				1					
	D	1	1	1	2					1				1					
Plague-infected rats		3	6	3	4	1	1	1	1	1									
Indo-China (see also table below): Pnompenh	C	3																	
	D	2																	
Iraq:																			
Baghdad	C	23	3	1	3						1			1	1	1	3	1	
	D	9	2		1									1		1			
Maudhan	C											2	1	1					
	D											1		1					
Madagascar (see also table below): Tamatave	C			1	2	1													
Morocco	C					10			8		2								
	D								8	2	4								
Peru (see table below).																			
Senegal (see table below).																			
Siam	C	1		1	4	1	1	1	1	1				1					1
	D	1			3	1	1		1	1									

[1] On July 27, 1931, 1,250 cases of plague were reported in Chiobe and Changchow, China, since April. On Sept. 19, 1931, 18 deaths were reported in Changchuanpu and new cases in Kaitung and Fengtien.

[2] On Oct. 17, 1931, plague epidemic was reported in western Shansi Province, China, with 2,000 deaths at Hsinghsien.

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

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Aug. 23–Sept. 19, 1931	Week ended— Sept. 26, 1931	October, 1931: 3	10	17	24	31	November, 1931: 7	14	21	28	December, 1931: 5	12	19
Spain: Hospitalet—Barcelona Province	C			5	2	1	1			5		1	1					
	D			2	1		1			1								
Syria: Beirut	C		2	1	2	1	2					1						
Tunisia: Tunis	C	11			1			1										
	D	1																
Union of South Africa:																		
Cape Province—Plague-infected rats				1														
Orange Free State	C				P				P									

Place		June, 1931	July, 1931	August, 1931	September, 1931	October, 1931	November, 1931
British East Africa (see also table above):							
Kenya	C	154	484	235	14	28	
Ecuador:							
Alamor Parish—Los Hoyos	C				1	3	
Amaluza Parish—Cangochapa	C					2	
Calvas Canton—							
Cariamanga	C				4	1	
Ovejeria	C		1				
Celicia Canton—Choras	C					1	
Loja Canton—							
Lapaz	C				20		
Naimuro	C					2	
Paterillo	C		1				
Tuburo	C					7	
Palas Canton—San Antonio	C				1	1	
Indo-China (see also table above)	C	2	1		1	3	
	D	2	1		1	1	
Madagascar (see also table above):							
Ambositra Province	C	15	1	2	1	1	
	D	15	1	1	1		
Antisirabe Province	C	12	13	22	19	10	
	D	12	12	22	19	10	
Miarinarivo Province	C		8	20	14	4	
	D		7	19	12	4	

Place		June, 1931	July, 1931	August, 1931	September, 1931	October, 1931	November, 1931
Madagascar—Continued.							
Moramanga Province	C	1		3	12	6	
	D		1	3	11	4	
Tananarive Province	C	10		3	65	63	
	D	9	5	45	63	62	
Peru	C	5	5	44	2		
	D	1	3	19	2		
Senegal:			2	14			
Baol [1]	C				13	6	2
	D		27	101	8	2	
Dakar [1]	C	64	13	58	45	4	
	D	56	95	194	31	4	
Diourbel [1]	C		73	106	13		10
	D				5		5
Louga [1]	C	4			10	1	19
	D	2	3	2	4	2	10
Rufisque [1]	C	2	1	1	1	7	12
	D		34	2		1	2
Thies [1]	C	12			12	7	16
	D	3	16	26	8	5	7
Tivaouane [1]	C	3	7	16			
	D	2	3				
			2				

[1] Reports incomplete.

SMALLPOX

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Week ended— Aug. 29, 1931	September, 1931				October, 1931					November, 1931				December, 1931	
						5	12	19	26	3	10	17	24	31	7	14	21	28	5	12
Algeria:																				
Algiers	C	8	1												1					
Constantine	C		1			1														
Belgian Congo	C	42																		
Brazil: Porto Alegre (alastrim)	C	5	41	34	7	13	12	16	12	18		16	7	24						
	D		1	1	2		2			2				3						
British East Africa: Tanganyika	C	7	149	19	31	4	6	9	8	2	1,121	53		18						
	D		17				1	4	4		91	2		2						
British South Africa:																				
Northern Rhodesia	C		21	26							1									
Southern Rhodesia	C	1	2			1	2													
Canada:																				
Alberta	C		1	1					12				1	2	2	1		2	1	
British Columbia	C		2	5		1	1								1	1				
Manitoba	C	4						1									1	1		
Winnipeg	C						1													
Nova Scotia	C																	1		
Ontario	C	32	35	5	4		2		5	2	1	9		7	3	5	3	2	5	
Kingston	C					1														
Ottawa	C	1					1		5	2		1		4	3	5				
Toronto	C	1																1		
Quebec	C		1																	
Saskatchewan	C	54	42	26	8	8	12	5	1	6	3	1	11	3	1	18	12	5	9	
Regina	C								1			1								
Chile:																				
Antofagasta	C		1																	
Santiago	C												2							
	D												1							
China:																				
Amoy	C	4	2	1			1		1			1	1		1	6	2	5	11	
	D	3	2	1			1		1				1		1	4		4	7	
Canton	C	1	2		1										1	1	6	3	2	
Foochow	C	P	P	P		P		P		P		P		P		P				
Hankow	C	4	3	3					1					5	4	9	5			
Manchuria—Kwantung—Dairen	C	1																		
Nanking	C			1																
Shanghai—																				
Foreigners only	C	11	3					35	29	17	17	1	6	2	12	16	13			
Including natives	D	13	6	1	1		1	5	8					1	1		6			
Tientsin	C		3																	

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

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Week ended— Aug. 29, 1931	September, 1931				October, 1931					November, 1931				December, 1931	
						5	12	19	26	3	10	17	24	31	7	14	21	28	5	12
Chosen (see table below).																				
Colombia: Santa Marta	D						1													
Eritrea	C		2		10															
	D				2															
France (see table below).																				
Great Britain:																				
England and Wales	C	287	187	91	33		19	45	45	41	34	41	39	42	71	68	55	56		
Bradford	C	5																		
London	C	122	54	26	3	9	5	15	5	17	15	21	20	27	55	27	38	27		
London and Great Towns	C	228	152	69	13	30	11	34	35	31	25	37	31	37	66	45	48	48		
	D	1	1																	
Sheffield	C						1	1												
Greece (see table below).																				
Honduras:																				
Puerto Castilla	C									1						1				
Tegucigalpa	C																	8		
India	C	7,413	5,359	2,927	483	484	409	329	382	528	258									
	D	1,704	1,352	746	144	108	109	72	100	122	47									
Bombay	C	6	6	2		1	2	2									1			
	D	5	6	1		1											1			
Calcutta	C	47	21	13	2	1	2		1				1							
	D	41	18	9	2	1	2		1				1							
Cochin	C			3					1	1	2	4	3		2					
Karachi	C	2		1									1							
	D	1																		
Madras	C	2	2	1		1			1	5	6	1	2	2		1		2		
	D	1									2							1		
Negapatam	C	3	1	2	3		1			1		1				1				
Rangoon	C	6	3	4	1		1			2		1	1		1		2	2		
	D	2	1	2			1			1	1				1		2	2		
Tuticorin	C				2					4			1		4					
	D									1			1							
Vizagapatam	C	6	5	5	3	1	1	1	2	4			1							
	D	2	1	4	3	1	1	1		1			1							
India (French):																				
Chandernagor	C	1	3																	
	D		2																	
Karikal	C	6	4	7		2	5			5		3			3	1				
	D	6	4	6		2	1			1		3			3					

Pondicherry Province	C	7	28	20	1	6	1	18	1	4	14	4	9	18	5	6			
	D	7	28	20	1	6	1	16	1	4	12	4	9	16	5	6			
Indo-China (see also table below):																			
Pnompenh	C	2																	
	D																		
Saigon and Cholon	C		3	2	1		3	2	1	4	1			4	2	1	4	6	7
	D		1	1	1		2		1	2				4	1		2	1	3
Iraq:																			
Baghdad	C	1					1											1	4
	D																	1	2
Basra	C	1																	
Mosul Liwa	C		1	1					5										
Ivory Coast (see table below).																			
Jamaica	C																	1	
Japan: Nagoya	C																		
Mexico (see also table below):																			
Jalisco (State)—Guadalajara	D	1	3	2					1	1	2				2		1		
Mexico City and surrounding territory	C	25	22	10	2	2	1		2	1	2	2	1	1	1	2	3		
	D	13	8	2			1	1	1	2		1	1						
Monterrey	C	1												2					
Torreon	C	3				1	1			1								1	5
	D	2					1												
Morocco (see table below).																			
Netherlands: Friesland—Opsterland	C												[1]1						
Nigeria	C								136	318									
	D								39	102									
Panama: Chiriqui	C																		
Poland	C	3	18					1										3	
Portugal: Lisbon	C	48	45	37	10	21	18	17	16	11	6	15	19	16	17	26	22	23	21
Rumania (see table below):																			
Siam	C	5	1				3												
	D	1	1																
Spain	C		7																
Straits Settlements	C			1															
Sudan (Anglo-Egyptian)	C	1					32										2		
	D						6												
Syria (see table below).																			
Turkey (see table below).																			
Union of Socialist Soviet Republics (see table below).																			
Union of South Africa:																			
Cape Province	C			P			P								P				
Natal	C			P															
Orange Free State	C	P	P	P	P	P	P		P	P	P								
Transvaal	C	P	P										P	P	P				
Upper Volta	C	12	2																
	D																		
On vessel:																			
S. S. Taif (pilgrim ship) at Suakin from Jeddah	C			1															

[1] Imported case.

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

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		April, 1931	May, 1931	June, 1931	July, 1931	August, 1931			September, 1931			October, 1931			Nov. 1-10, 1931
						1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31	
Indo-China (see also table above)	C	142	58	47	8	29				7	27	10	11	26	20
	D				4	11				4	8	3	3	10	4
Ivory Coast	C							7							1
	D							4							1
Syria: Beirut	C			1											

Place		April, 1931	May, 1931	June, 1931	July, 1931	August, 1931	September, 1931	October, 1931
China: Harbin	C		13	10				
Chosen	C		1	4	2			
	D				1			
France	C	6	54	9	20			
Greece	C		3	1				
Mexico (see also table above)	D	1	1	2				

Place		April, 1931	May, 1931	June, 1931	July, 1931	August, 1931	September, 1931	October, 1931
Morocco	C	7	49	48	23	23	59	91
Rumania	C		1			1		
Turkey	C		9	1				
Union of Socialist Soviet Republics	C	1,516	1,345					

TYPHUS FEVER

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Week ended— Aug. 29, 1931	September, 1931 5	12	19	26	October, 1931 3	10	17	24	31	November, 1931 7	14	21	28
Algeria:																		
Algiers	C	9	2									1		1	1			
Bone	C			2														
Constantine Department	C	26	3	1				2		1				11	16	11	1	
Oran	C	2		1		1										1	1	
Bulgaria	C	30			1								1					
	D	6																
Chile:																		
Antofagasta	C													1				
Santiago	C												3					
China:																		
Manchuria—Harbin	C	16			1													
Shanghai	C		3	1					1									
Chosen (see table below).																		
Colombia: Cali	D					1												
Czechoslovakia (see table below).																		
Egypt:																		
Alexandria	C	3					1	1							1			
Beheira	C															1		
Cairo	C				1													
Gharbieh	C															1		
	D															1		
Greece (see table below).																		
Guatemala (see table below).																		
Irish Free State:																		
Cork County—																		
Schull	C		1															
Skibbereen	C	2	1															
Kerry County—Listowel	C	1																
Limerick County—																		
Croom	C								1									
Glin	C						2		1									
Limerick	C		2	1														
Michelstown	C		1															
Rathkeale	C								1									
Mayo County—																		
Castlebar	C			1														
Westport	C			1														

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

TYPHUS FEVER—Continued

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Week ended— Aug. 29, 1931	September, 1931 5	12	19	26	October, 1931 3	10	17	24	31	November, 1931 7	14	21	28
Japan	C	1																
Lithuania (see table below).																		
Mexico:																		
Durango	D		1															
Guadalajara	D			1														
Mexico City, including municipalities in Federal District	C	46	53	18	5	1	2	2	4	2	5	3	7	3	1	5	7	
	D	19	12	10	1	1		2	2	2	2	2	2	2			1	
San Luis Potosi	D		4	1														
Torreon	C		1								1	1		3				
	D		1								1	1		5	1			
Morocco	C	101	102	8						1		3		1				
	D	6	8															
Palestine	C	5	2	11				4	4	1	1		2		1			1
Paraguay: Asuncion	D						1											
Poland	C	97	53	31	6	2	1	2	2	8	3	1	2	6	6	6		36
	D	4	5	2						1				1	2			2
Rumania	C	80	11	23		4	6	3	1	6	7	4	12	12	6	8		
	D	13	5	2				1			2	1	3	3	2	1		
Tunisia: Tunis	C	73	2		1		1	1								3		26
	D	4																2
Turkey (see table below).																		
Union of Socialist Soviet Republics (see table below).																		
Union of South Africa:																		
Cape Province	C	P	P	P	P	P	P	P	P	P	P	P	P	P	P			
Municipality of East London	C	1		1														
Natal	C	P	P	P			1					P			P			
Orange Free State	C	P	12									P	P	P	P			
Transvaal	C	P	P	P	P	P	P	P	P	P	1	P	P	P	P			
Yugoslavia (see table below)																		

Place		April, 1931	May, 1931	June, 1931	July, 1931	August, 1931	September, 1931	October, 1931
Chosen: Seoul	C	4		6	1			
	D	1		1	1			
Czechoslovakia	C	5	11	2				
Greece	C	22	6	9	2	13	9	12
	D	3				2	1	
Guatemala	C			33	34	3		
	D			15	5			
Lithuania	C	34	10	13	8	2		
	D	5		2				
Turkey	C	32	13	11	9		16	1
Union of Socialist Soviet Republics	C	1,513	1,324					
Yugoslavia	C	43	14	2	3	1		
	D	5						

YELLOW FEVER

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Aug. 23–Sept. 19, 1931	Week ended— Sept. 26, 1931	October, 1931: 3	10	17	24	31	November, 1931: 7	14	21	28	December, 1931: 5	12
Brazil:																	
Alagoas State	C			3													
	D			2													
Maceio	C											1					
Ceara State	C	1		1													
	D			1													
Pernambuco Province	C				2												
	D				2												
Recife	C					1											
	D					1											
Sergipe State	C	1															
British Cameroons: Mamfe	C	2															
Colombia: Magdalena Province—Near Cienaga	C		4														
Gold Coast:																	
Akuse	C		2														
	D		1														
Dagomba District	C			4													
Kete Krachi	C							1									
Kintampo	C		1														
	D		1														
Oda	C				1												
	D				1												

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

YELLOW FEVER—Continued

[C indicates cases; D, deaths; P, present]

Place		May 31–June 27, 1931	June 28–July 25, 1931	July 26–Aug. 22, 1931	Aug. 23–Sept. 19, 1931	Week ended— Sept. 26, 1931	October, 1931					November, 1931				December, 1931	
							3	10	17	24	31	7	14	21	28	5	12
Gold Coast—Continued.																	
Salaga	C															1	
	D															1	
Tamale	C		2			2				1					2		
	D		2			2											
Wale Wale	C			1													
	D			1													
Ivory Coast:																	
Bobo Dioulasso	C		1														
	D		1														
Grand Bassam	C			4	1												
	D			2	1												
Kong Circle	C		4														
Seguela	C			P													
Tehini	C											1					
Nigeria	C			1						1			1		1		
	D			1									1		1		
Senegal:																	
Podor (Hinterland)	C			1													
	D			1													
St. Louis	C					1											
Thies	C					1											
	D					1											
Sudan (French)	C		4														
Macina—Kayo Circle	C												2				
	D												2				
Togo (French): Atakpame—Anie Circle	C											1					
	D											1					
Upper Volta:																	
Banfora	C		2			2											
	D		1			1					2						
Dedougou	C																
Diarabakoko	C					2											
	D					1											
Ouagadougou	C				1	1			1								

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