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THE ILLNESS RATE AMONG MALES AND FEMALES[1]

Hagerstown Morbidity Studies No. VI

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In the preceding papers giving the results of a morbidity study which was conducted in Hagerstown, Md., during the period of 28 months from December 1, 1921, through March 31, 1924,[2] occasional mention was made of certain differences in the morbidity rates according to sex. In the present article it is planned to present data bearing on certain phases of the sex differences in incidence of illness. A later report will take into account the distinction as to sex when specific diseases and groups of diseases are considered at different ages.

The annual morbidity rate from all causes, as observed during the 28 months' period, was 970 per thousand for males and 1,262 for females. The ratio of the illness rate for females to that for males was thus 1.3 to 1. Since it has been shown that the age distribution of the populations of the two sexes was similar, this marked contrast can not be due to differences in age. These rates, it may be noted, are for males and females of all ages, in all conditions of health, and living in an environment that, so far as we were able to determine, was in no sense abnormal or unusual.

It may be informative and it will be advisable—in order to subject our results to closer scrutiny—to consider the sex differences in the incidence of sickness in this general population group (1) from different causes and (2) at different ages, and to discuss the possible effect of the method of collecting the data upon the difference in rates of illness among males and females. Some comparisons of our results with other records will also be of interest.

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[1] From the Office of Statistical Investigations, United States Public Health Service. Other Hagerstown morbidity studies published are—

I. A Study of Illness in a General Population Group: Method of Study and General Results. Pub. Health Rep., Sept. 24, 1926, Reprint No. 1112.

II. The Reporting of Notifiable Diseases in a Typical Small City. Pub. Health Rep., Oct. 8, 1926, Reprint No. 1116.

III. The Extent of Medical and Hospital Service in a Typical Small City. Pub. Health Rep., Jan. 14, 1927, Reprint No. 1134.

IV. The Age Curve of Illness. Pub. Health Rep., vol. 42, No. 23, June 10, 1927. (Reprint No. 1163.)

V. A Comparison of the Incidence of Illness and Death. Pub. Health Rep., vol. 42, No. 25, June 24, 1927. (Reprint No. 1167.)

[2] For a detailed description of the method of the study and definitions and discussion of "illnesses" and of other terms employed, as well as the procedure in computing rates, the reader is referred to the first paper of this series.

ILLNESS AMONG MALES AND FEMALES FROM DIFFERENT CAUSES

In Table 1 the annual incidence rate of illnesses classified according to broad disease groups is shown, as well as the ratio of the rate for females to the rate for males for each disease group. This classification, perhaps, may be more properly defined as according to the *kinds* of illness—not necessarily according to the diseases which may have caused illness, although in the majority of instances the grouping by cause is probably accurate. With this qualification in mind, it will be observed that only for three groups of diseases was the male rate higher than that for the female. For the general groups of "epidemic, endemic, and infectious diseases," the female rate was 92 per cent of the male rate. This is in accordance with the general experience with communicable diseases which occur almost entirely in childhood. The female rate for external causes (including accidents) was only 61 per cent of that for the male, which is also in accord with other experiences and with mortality records. For diseases of the skin the female rate was 75 per cent of the male rate; and for diseases of the eyes and ears the female rate was only 10 per cent in excess of the male rate. For the large group of illnesses classified as respiratory diseases and disorders, which constitute considerably over half of the illnesses recorded, the female rate was 20 per cent higher than that for the male. The next largest class of illnesses consisted of those classified under the head of diseases and disorders of the digestive system; and the female rate for this group was 44 per cent higher than the male rate. For the important group of illnesses resulting from diseases and disorders of the circulatory system and of the kidneys and annexa the female rate was nearly double that for the males. The female rate was twice that of the male rate for illnesses due to the general diseases. The next highest ratio of the female to the male rate was for diseases and disorders of the nervous system. The female rate was nearly sixteen times the male rate for nonvenereal diseases of the reproductive organs.

TABLE 1.—*Incidence of illness among males and females in a white population group observed from December 1, 1921, through March 31, 1924, in Hagerstown, Md., by broad groups of diseases*

Cause (Numbers in parentheses refer to those given in the International List of Causes of Death, 1920)	Annual rate per 1,000		Ratio of rate for females to rate for males
	Males	Females	
All causes	969.5	[1] 1,215.1	1.30
Respiratory diseases and disorders (11, 31, 97-107, 109)	608.7	732.0	1.20
Epidemic, endemic, and infectious (1-42, except 11, 31)	92.5	85.1	.92
General diseases (43-69)	14.9	30.8	2.07
Diseases and disorders of nervous system (70-84, part 205)	23.3	72.3	3.10
Diseases of eyes and ears (85-86)	22.4	24.5	1.10
Diseases and disorders of circulatory system and kidneys and annexa (87-96, 128-134)	28.0	48.2	1.72
Diseases and disorders of the digestive system (110-127, parts of 108 and 205)	89.9	129.4	1.44
Nonvenereal diseases of reproductive organs (135-142)	1.5	23.8	15.88
Puerperal conditions (143-150, part 205)		47.2	
Diseases of the skin (151-154)	22.4	16.7	.75
External causes, including accidents (165-203)	49.7	30.3	.61
All other and ill-defined (155-164, part 205)	16.4	22.1	1.35

[1] Excluding puerperal conditions. The rate including such conditions is 1,262.3.

ILLNESSES AMONG MALES AND FEMALES AT DIFFERENT AGES

The age curves of illness for males and females, based on the rates given in Table 2, are shown in Figure 1.

TABLE 2.—*Incidence of illness from all causes as observed in Hagerstown, Md., among white persons of different sexes and ages, December 1, 1921–March 31, 1924*

Age in years	Annual rate per 1,000		Ratio of rate for females to rate for males
	Males	Females	
All ages	943	1,210	1.28
0–4	1,668	1,498	.90
5–9	1,580	1,525	.97
10–14	1,104	1,269	1.15
15–19	680	844	1.24
20–24	506	888	1.75
25–29	541	1,050	1.94
30–34	589	1,214	2.06
35–44	632	1,191	1.89
45–54	728	1,279	1.76
55–64	697	1,197	1.72
65+	899	1,215	1.35

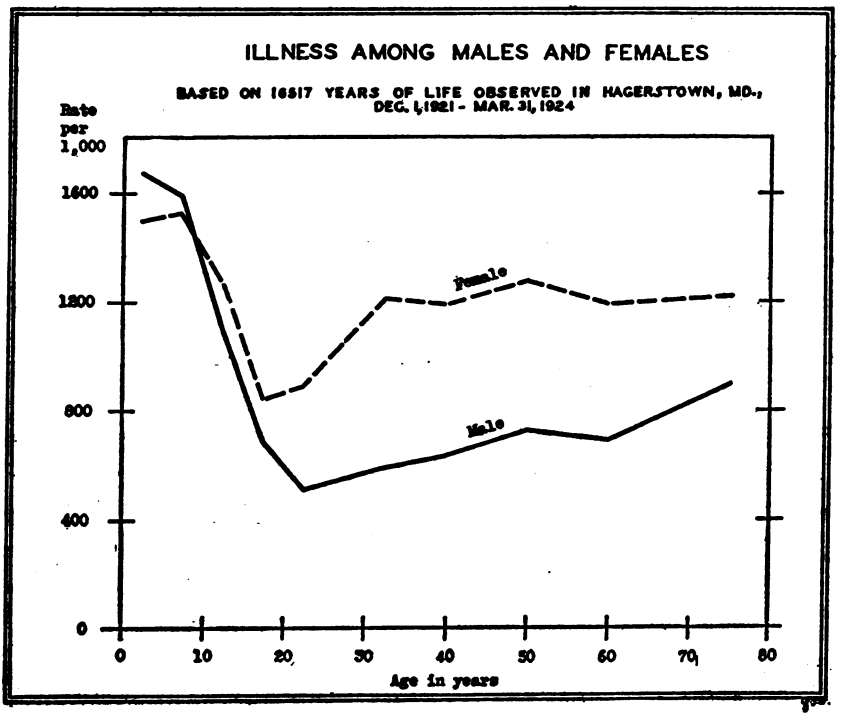

FIG. 1

In the younger ages the rates exhibit some extremely interesting differences. In general, the rate for both males and females is at its highest point under 10 years of age, and thereafter rapidly drops until 20 years of age, but with two important sex differences: (*a*)

Under 5 years of age the female rate is only 90 per cent of the male rate, and in the age period 5–9 it is still slightly under that of males; (*b*) in the age period 10–14 the ratio changes entirely and the female rate is 15 per cent higher than that for the males. In the adult ages the female rate as recorded in our study is nearly twice the male rate, except in old age (65 years and over).

While it is not the purpose of this communication to deal with sex-age rates according to specific diseases, yet, in view of the fact

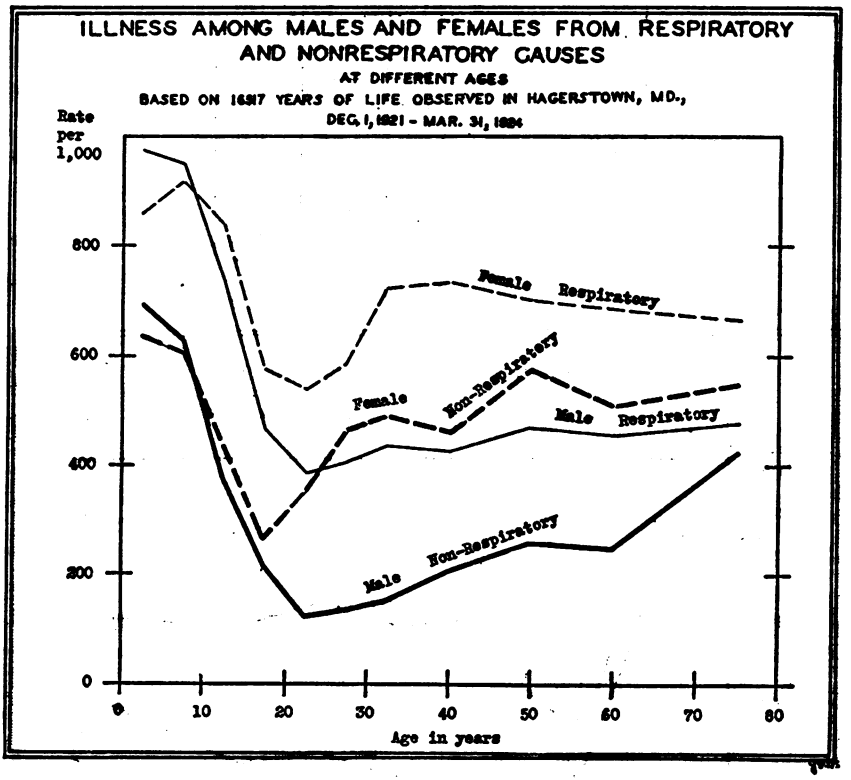

FIG. 2

that 60 per cent of all illnesses recorded in this study are due to respiratory conditions, it is pertinent to see whether the differences between the male and female rate in different ages are due to respiratory conditions only or prevail also for nonrespiratory conditions. In Table 3 the sex-age specific rates are given for these two groups of diseases, with the result that very much the same differences in the age curves are shown for each group of diseases as for all illnesses (see Fig. 2).

TABLE 3.—*Incidence of illness from respiratory and nonrespiratory diseases as observed in Hagerstown, Md., among white persons of different sexes and ages, December 1, 1921–March 31, 1924*

Age in years	Annual rate per 1,000			
	Respiratory diseases		Nonrespiratory diseases	
	Males	Females	Males	Females
All ages	602	723	341	487
0–4	974	861	605	637
5–9	949	919	631	606
10–14	733	838	371	431
15–19	469	588	211	266
20–24	384	539	122	349
25–29	407	586	134	463
30–34	437	724	151	489
35–44	427	734	205	457
45–54	470	701	258	578
55–64	452	688	245	508
65+	477	666	422	549

From the point of view of resistance to disease a comparison may be made of the proportions of males and females who did not suffer any illness (of the kind recorded) during the period of the study. Similarly, from the point of view of susceptibility to disease and its morbid effects, a comparison may be made of the proportions of males and females who were ill frequently. For this purpose, those individuals who were not under observation for at least 26 of the total 28 months have been excluded. The two comparisons are given in Table 4 and are graphically shown in Figure 3. Marked sex differences in both comparisons are manifested; these will be discussed in connection with the other sex differences that have been noted.

TABLE 4.—*Proportions of white persons observed for 26–28 months in Hagerstown, Md., who were not ill and who were ill four or more times: By sex and age*

Age	Per cent				Number of persons under observation for incidence of illness for 26–28 months	
	Not ill		Ill 4 or more times			
	Males	Females	Males	Females	Males	Females
2 years and over	22.83	14.26	21.43	29.96	2,501	2,650
2–4	5.17	4.19	45.39	43.26	271	215
5–9	7.22	7.67	48.66	42.05	374	352
10–14	17.48	12.06	25.52	28.72	286	282
15–19	28.04	23.30	10.75	17.96	214	206
20–24	34.09	26.16	4.55	15.12	132	172
25–29	36.25	15.11	6.25	23.56	160	225
30–34	32.18	14.98	6.32	28.50	174	207
35–44	33.63	17.33	9.91	31.20	333	375
45–54	29.78	14.05	13.60	30.77	272	299
55–64	28.47	14.56	12.50	30.38	144	158
65+	19.15	12.58	14.18	25.16	141	159

DISCUSSION

The foregoing indications can not be accepted without examining more closely the manner in which the information was obtained and its possible effect upon the particular results with which we are concerned. The results of other studies and records may also be referred to.

It is fully realized, of course, that a "sickness," "illness," or "morbidity" rate does not reveal adequately the presence of certain diseases or conditions. Obviously it can not reveal the prevalence

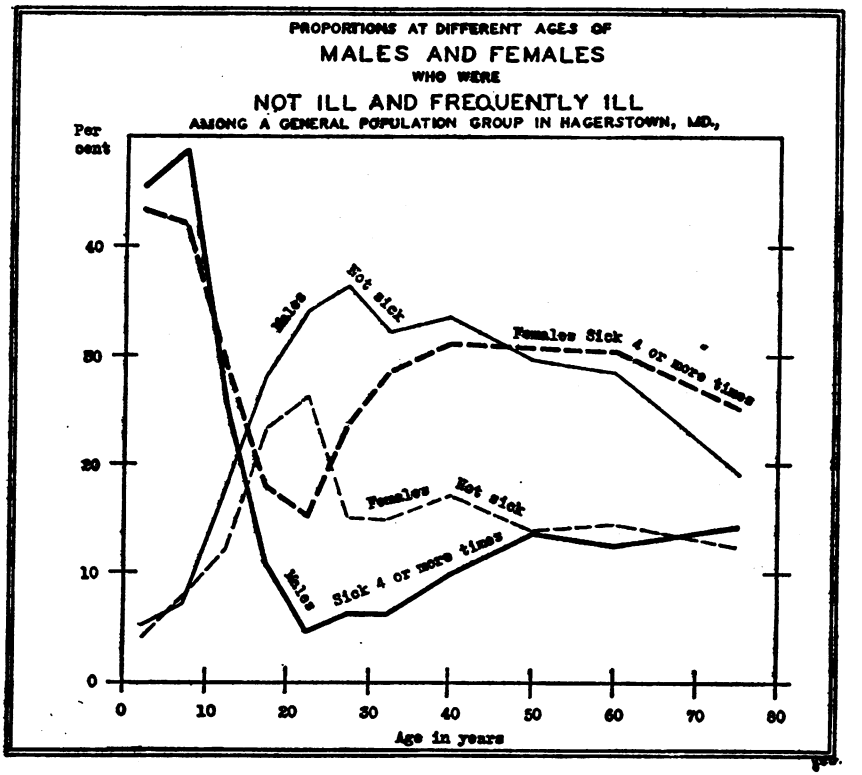

FIG. 3

of those diseases or conditions which do *not* manifest themselves in sickness at all or very rarely. With equal obviousness it ought to be clear that since the *frequency* rate, which is the rate used in this study, measures the *incidence* of illness, it is not a suitable term for measuring the *prevalence of disease* and can be used as indicating the *incidence* of disease only when those diseases occur but once, and cause definitely morbid effects, within the period of observation.[3]

[3] The reader is referred to the first and fifth papers of this series for more extended discussions of the limitations and significance of the data.

As was stated in the first paper of this series, the record of illness in our study was furnished by an adult member, usually the mother of the family, of each household visited. Might not this fact mean that a more complete record of illnesses, particularly the minor ailments or those conditions which were manifested by subjective symptoms, was obtained for these informants than for other members of the household?

It is at once apparent that this condition could have no appreciable effect upon the illness rate among younger persons (up to 20 years of age), but the possibility of its effect upon comparative rates for adult males and females is undoubtedly great. For the sake of clarity in presentation we may discuss separately (*a*) the sex differences in the illness rate among persons under 20 years of age, and (*b*) those among older persons.

THE AGE PERIOD 0–19

The higher incidence of sickness among males in childhood is in accordance with general experience with communicable diseases and is corroborated by such records of illness as are available. Similarly, the excess of the female illness rate in the adolescent period, as shown by the Hagerstown study, seems to be suggested by other experience also.

The first study based on continuous morbidity observations that we are aware of was one of a small group of persons (550 in number) who constituted the families of workers in a cotton-mill village in South Carolina in 1918 (1). The ratios of the "disabling sickness" rate among males to that among females at different ages during the six-months period March–August were as follows:

A cotton-mill village in South Carolina, March–August, 1918

Age group	Ratio of female sickness rate to male rate
0–4	1.26
5–9	.72
10–14	1.07
15–19	2.15

A higher morbidity rate among adolescent girls is manifested, but the number of persons observed for a six-months period is almost too small to yield significant rates for 5-year age groups.

Morbidity records for the school population of Hagerstown were kept for several years in connection with the general morbidity study, and the results for the period December, 1921, to May, 1923, inclu-

sive, have been presented by Collins (2). The ratios of the female rate to the male rate for sickness entailing absence from school, by age, was as follows:

Hagerstown (Md.) school children, 1921–1923

Age group	Ratio of female sickness rate to male rate
6 years and under	1.25
7	.92
8	1.05
9	1.07
10	1.26
11	1.08
12	1.08
13	1.20
14	1.18
15	1.12
16 and over	1.48

This result corresponds fairly well to that indicated for similar ages in the general population group. (See Table 2.)

These two sets of data, in addition to the present study, are all the material in this country that we are aware of which affords the necessary detail as to sex and age concerning the *incidence* of sickness among persons under 20 years of age. There are, however, some other observations which are expressed in different terms. Collins, in an earlier report (3), gave the percentage of school days lost by several thousand Missouri children on account of sickness in 1919–1921. Without reproducing his results in detail, the ratios of the female percentage to the male percentage for each age group during the two school years are given below:

Missouri school children, 1919–1921

Age group	Ratio of female absenteeism (sickness) to that of males for the school year of—	
	1919-20	1920-21
6- 7	1.02	0.96
8- 9	1.13	1.22
10-11	1.02	1.14
12-13	1.18	1.11
14-16	1.02	1.04

The number of children in the last age group was small and the percentages may not be significant. Otherwise, the comparison in the main tends to confirm the observation yielded by incidence rates, that in childhood the female rate is lower than the male rate, but that in later childhood and adolescence the female rate is higher. A study of the *prevalence* of disabling sickness, as ascertained by a single house-to-house canvass of 4,161 persons in seven South Caro-

lina cotton-mill villages in 1916 (4), yields the following ratios of the female rate to the male rate at different ages, which are quite in accordance with the Hagerstown results:

Seven South Carolina cotton mill villages, 1916

Age group	Ratio of female sickness rate to male rate
0- 4	0.87
5- 9	1.06
10-14	2.52
15-24	[1] 1.88

[1] Exclusive of confinements; with confinements the ratio is 2.40.

Finally, we may refer to a recent study of respiratory attacks in families of medical officers of the United States Army, Navy, and Public Health Service, and of members of several university faculties (5). While the conditions recorded were respiratory only, the fact that these conditions caused the majority of sicknesses and that in Hagerstown the same sex differences appear as for all causes of sickness in the ages under consideration, warrant a mention of the results of this inquiry here. The ratios of the female rate to the male rate at different ages are as follows:

Families of medical officers of United States Army, Navy, and Public Health Service, 1924

Age group	Ratio of female respiratory rate to male rate
0- 4	0.94
5- 9	.92
10-14	1.09
15-24	1.23

The broad indications furnished by the results of the Hagerstown study, together with such other experience as is available, so far as the ages under 20 are concerned, are—(1) that males in early childhood are less resistant to diseases ("resistance" being measured by infrequency of illness) than females; (2) that not much difference in resistance on the part of the two sexes is manifested in late childhood or just before pubescence; (3) that during pubescence and in the whole period of adolescence the female is more susceptible to disease and morbid conditions than the male.

These interpretations require further inquiry, of course, before they can be said to be established, particularly from the viewpoint of the etiology and biologic significance of the specific diseases and

conditions involved. We shall present more detailed evidence from the Hagerstown experience in a later study; but it may be stated that the relatively greater frequency of illness among (*a*) male children and (*b*) female adolescents appears for nearly all of the groups of causes and conditions into which we are accustomed to classify diseases and kinds of sickness.

Our broad interpretations may be carried a step further, however, without considering the specific diseases or conditions involved. We may seek an answer to these two questions: (1) Is the higher illness rate in either sex due to a larger proportion of "sickly" persons (i. e., those frequently ill) or is it characteristic of the entire group? (2) Does the sex difference in the mortality rate correspond to the sex difference in the illness rate or does one sex withstand an attack of disease better than the other?

On the first of these two points, reference may be made to Table 4 and Figure 3. The following ratios based on Table 4 express more precisely the comparison of the sexes:

Ratios of female illness rates to male rates as shown by the Hagerstown morbidity study of 5,151 persons observed during 26 to 28 months

Age group	No illness	4 or more illnesses
2- 4	0.81	0.95
5- 9	1.06	.86
10-14	.69	1.12
15-19	.83	1.67

Generally speaking, for the age period 2–19 years the proportion of males who were free from illness during 26 months was somewhat larger than that of the females. This result, if it is corroborated by further studies, modifies the foregoing interpretation of the ability of males in childhood to escape attacks of disease. But since we find the proportion of boys under 10 years of age who suffered frequent illness (four times or more in 26 months) also to be greater than that of girls our general interpretation requires the more exact statement, as follows: That the higher illness rate among males in childhood is due not only to a greater incidence of certain diseases—whether because of a lower resistance or a greater opportunity for contracting them—but to the existence of a larger moiety of individuals who are ill frequently, or of "sickly" persons.

On the other hand, this moiety of frequently sick, or "sickly" persons, is greater among adolescent girls than among boys, a difference which is not explained by menstruation or menstrual disorders, but persists when illnesses described by these conditions are subtracted. The higher female morbidity rate in adolescence is due not only to a smaller number of girls free from illness but also to a larger number who were ill frequently, as compared with boys of the same ages.

The relatively high illness rate among males in the age periods 0–4 and 5–9 years is similar to the relatively high mortality rate among males of these ages, but the similarity of the differential ratios ceases in adolescence, as the following table shows:

Ratios of female morbidity and mortality rates to those for males at different ages

Age group	Illness in Hagerstown, 1921–1924	Mortality in white population, United States registration area, 1923
0–4	0.99	0.81
5–9	.97	.83
10–14	1.15	.90
15–19	1.24	.92
20–24	1.75	.94

The suggestion is afforded that although the proportion of male children able to escape attacks of disease (as measured by illness) is less than that of female children, the inferiority of these males in resisting death, as compared with the females, is even greater. We need case fatality records for the satisfactory pursuit of this particular inquiry, for the reason that the mortality rate does not tell us which is the more important factor—the incidence of disease or the fatality of attack—but an approximation can be made, upon the assumption that our Hagerstown morbidity experience for these ages is typical, by comparing the illness rate with the mortality rate for each sex-age group. The comparison may be expressed as follows:

TABLE 5.—*Comparison of the estimated number of illnesses per death for persons of the same sex and age*

Age group	Estimated number of illnesses per death [1]		Ratio of females to males $\frac{B}{A}$
	Males (A)	Females (B)	
0–4	71	78	1.10
5–9	619	716	1.16
10–14	553	794	1.44
15–19	210	285	1.36
20–24	125	232	1.86

[1] Computed by dividing the Hagerstown annual illness rate for each sex-age group by the corresponding 1923 mortality rate for whites in the registration area of 1920.

This is a very crude comparison, of course, and the results can not be regarded as more than suggestive until more adequate data are available. But it is not without interest, since it does suggest that males in childhood (0–9 years of age) succumb somewhat more easily than females to attacks of disease, and that in adolescence, in spite of the fact that females are more frequently ill, resistance to death after attacks have taken place is below that of females to an even greater extent than in childhood.

ADULT AGES

Before any interpretation can be placed upon differences in the illness rates for adult males and females, the possible effect of the fact already referred to, that many women reported their own illnesses and ailments whereas relatively few men did, must be taken into account.

In order to obtain direct evidence on this point, we used the records of those families in which more than one adult female and at least one adult male were continuously resident. Since the original record contained a notation as to the identity of the informant on each case of illness, it was possible to compare the incidence of illness among those for whom other informants gave the information. In order to render as comparable as possible the two sets of records, only persons of adult age were included. The number of males reporting upon themselves in these households was not large enough to yield any information of value, but a comparison of three groups is possible: (1) Women reporting upon themselves; (2) women reported upon by other women in the same households; and (3) men in the same households who were reported upon, usually by their wives. Unfortunately for any correction of the total adult female rate, the incidence of illness among adults in these households was considerably lower than that in the total population observed. The annual rate per 1,000 for males in these households was 412 and for females 689 (whether reporting upon themselves or not), as against 642 for all adult males and 1,164 for all adult females. However, the ratio of the total adult female rate to the total adult male rate was 1.81 to 1, as against 1.67 to 1 in the households selected, a difference which is not too great to invalidate the comparisons we have in mind.

Illnesses from genito-urinary and puerperal diseases and conditions have been excluded in the comparisons which are given in Table 6.

TABLE 6.—*A comparison of the illnesses*[1] *incident among persons reporting upon themselves with those among persons reported upon in the same households canvassed in Hagerstown, Md., December 1, 1921–March 31, 1924: By sex*

	Persons reported upon by informants other than themselves		Persons reporting upon themselves
	Males	Females	Females
Annual illness rate per 1,000 adjusted for age[1]	412	552	833
Number of years of life observed	331	349	216
Number of cases[2]	142	190	199

[1] To the age distribution of the total population observed who were 20 years of age and over.
[2] Exclusive of genito-urinary and puerperal causes and conditions.

It appears from this sample that the illness rate among adult females, exclusive of genito-urinary and puerperal causes and con-

ditions, bore a ratio to the illness rate among males of 1.3 to 1 when the illnesses among both males and females were reported by persons other than those affected. The excess in the female rate thus persists after the influence of subjective diagnosis on the part of the informant is eliminated.

The number of cases occurring in these small groups is not sufficient to permit of a very detailed analysis according to the cause or condition involved, but it is possible to compare the rates for a few groups of conditions, as in Table 7.

TABLE 7.—*A comparison of the illnesses incident among persons reporting upon themselves with those among persons reported upon in the same households canvassed in Hagerstown, Md., December 1, 1921–March 31, 1924: By sex and certain causes or condition*

Cause or condition	Annual rate per 1,000 persons		
	When reported upon by informants other than themselves		When reporting upon themselves
	Males	Females	Females
Total respiratory illnesses	298	367	622
Colds and bronchitis	202	246	428
Influenza and grippe	61	88	122
Diseases and conditions of the nervous system, including headaches not otherwise classified	12	31	72
Diseases and disorders of the digestive system	35	62	68

We again observe that the adult female illness rate is higher than that for adult males for certain specific causes and conditions when the illnesses for both sexes are reported by informants other than the persons affected. The net result of this correction of our data can be indicated by comparing the ratios of the female rate to the male rate among persons reported upon, as determined from this sample, with similar ratios among all adults (15–64 years of age) observed in our study based upon the rates as found.

Ratio of female illness rates to male rates for certain groups of diseases as shown by the Hagerstown morbidity study (a) among all adult persons as recorded, and (b) in a group of adult persons whose illnesses were reported by informants other than themselves

Cause or condition	All persons 15–64 years of age (A)	Persons reported upon by informants other than themselves, 20 years of age and over (B)	Per cent by which (B) is less than (A)
All causes	1.79	1.34	25
Respiratory	1.51	1.23	19
Nervous	4.94	2.58	48
Digestive	2.08	1.77	15

It is thus indicated that the ratio of the illness rate for adult females to that for adult males as recorded in our study would have been about 25 per cent lower if all of the illnesses had been reported

by other informants than the individuals affected. The ratios for respiratory and digestive diseases would have been from 15 to 20 per cent lower, and for diseases and conditions of the nervous system the reduction in the rate would be about 50 per cent.

That a bias of the kind referred to may exist can not be doubted, and it is important to keep in mind its possible effect when comparing records of illness among persons reporting upon themselves with those among persons reported upon. In the particular group under consideration the illness rate among female informants was almost 70 per cent greater than that among females reported upon.[4]

With this explanation of the comparability of the illness rates for adult males and for adult females as afforded by the Hagerstown study, some reference to other experience will be of interest. It will not be possible in a short paper to refer to more than a few sources.

In connection with the industrial hygiene work of the United States Public Health Service and with the cooperation of a number of industrial establishments, this office has collected a considerable amount of records of disabling sickness among wage-earning males and females. The following series of ratios has been computed from the sickness rates for 11 large establishments, each covering an experience of five years. The sicknesses included only those causing disability for eight days or longer, excluded causes and conditions peculiar to females, and involved certification of sickness.[5]

Eleven industrial establishments

Establishment	Ratio of female sickness rate to male rate	Establishment	Ratio of female sickness rate to male rate
A	2.46	G	1.07
B	2.11	H	1.04
C	1.94	I	1.00
D	1.79	J	.71
E	1.47	K	.55
F	1.40		

In half of these establishments the rate among females was definitely higher than that among males; in three the rate was about the same, and in two the male rate was higher than the female. Before

[4] The possible effect of this factor was pointed out by Surg. J. G. Townsend and the writer in discussing the difference in the incidence of respiratory attacks among males and females in families of medical officers of the United States Army, Navy, and Public Health Service, the attacks in this instance having been reported by the adult males in the families concerned. The ratio of the female rate to that of the male for this group was 0.94 to 1 for all ages, the ratios for adult age groups being as follows:

25–34	0.80
35–44	.92
45–54	.83
55+	.96

The ratios in the ages 25 and over are contrary to the experience recorded for males and females when the attacks were not reported by the persons attacked.

[5] Whether or not the differences in the male and female rates are affected by differences in malingering, if such differences exist, it is impossible to say.

any conclusion can be drawn from figures such as these the ages of the persons concerned must be taken into account. In one establishment which may be taken as typical it was ascertained that 19 per cent of the men were over 45 years of age, compared with only 3 per cent of the women. The nature of the men's work and their working conditions in most of the plants were quite different from those of the women.

More representative of the morbidity situation where work and working conditions are fairly similar for males and females is the following series of ratios by age from the experience of the Hood Rubber Co., which has been made available to us. The sicknesses included are those which disabled the workers for at least two consecutive working-days and were, in almost every instance, reported upon by a nurse employed by the company.

Hood Rubber Co.

Age	Ratio of female sickness rate to the male rate
All ages	2.18
15–24	1.90
25–34	2.58
35–44	2.57
45+	1.28

A larger experience is given in a paper recently published by Brundage (6) which covers the sickness records of the Edison Electric Illuminating Co. of Boston for the 10-year period 1915–1924. This report is the most detailed and complete contribution on the incidence of disabling sickness among adult males and females that has appeared in this country and space does not permit a full summary of the results here. Briefly, it was found that there were annually 2.02 absences from work due to sickness (exclusive of accidents) among females to every absence among males after adjusting for differences in the age distribution of the two sexes and that the excess of the female rate was greatest in the younger ages. All of the cases of sickness were reported upon by the company nurses. The ratios according to age are as follows:

Edison Electric Illuminating Co. of Boston

Age group	Ratio of female sickness rate to male rate
All ages	2.02
15–24	2.23
25–34	2.27
35–44	1.70
45–54	1.29
55+	1.49

The fact that the sex ratios shown by these two important industrial experiences are higher than similar ratios based upon fairly comparable records for a general population group invites inquiry as to whether or not the female morbidity rate is increased by factory employment. Our data do not lend themselves to an inquiry that demands the consideration of the many factors involved for which we lack the essential information, and no conclusion or suggestion is offered on this point. A comparison of the sex ratios for the Hagerstown population of working ages and the Edison Co. employees with respect to certain groups of diseases and conditions is of interest, however, in this connection. This comparison is given in the following table:

Ratios of female sickness rate to male rate in two populations, for certain disease groups

Cause (Numbers in parentheses refer to those given in the International List of Causes of Death)	For general population 15–64 years of age in Hagerstown, Md. 1921–1924	For employees of Edison Co., Boston, 1915–1924
All causes	1.79	1.93
Epidemic, endemic, infectious (1–42, excl. 11, 31)	2.08	1.39
General (43–69)	1.98	.80
Nervous system (70–84)	4.94	4.42
Circulatory system (87–96)	1.94	.82
Respiratory (11, 31, 97–107, 109)	1.51	1.74
Digestive (108, 110–127)	2.08	1.80
Nonvenereal diseases of genito-urinary system (128–140, 142)	3.02	.89
Skin (151–154)	.94	1.31
Bones and organs of locomotion (155–158)	1.33	.60

Upon the assumption that the two sets of data are roughly comparable, the following observations suggest themselves:

The low ratio of the female sickness rate to the male rate in the Edison group for general diseases, diseases of the circulatory system, nonvenereal diseases of the genito-urinary system, and diseases and defects of the bones and organs of locomotion, as compared with the Hagerstown population, may be interpreted, perhaps, as reflecting a greater degree of selection (whether natural or deliberate or both) of females for industrial employment than of males. This would suggest itself as the obvious reason for the low illness sex ratio for nonvenereal diseases and conditions of the genito-urinary system among the employed persons, and the lack of occupations for women who are crippled may be a reason for the low illness sex ratio for diseases and defects of the bones and organs of locomotion among the employed persons. Whether or not the low ratios for general diseases and diseases of the circulatory system reflect a similar fact is an interesting question upon which our data can contribute no direct information.

Again, in view of the facts that the Hagerstown female-male ratios for sickness are magnified by reason of the method of securing the record and that the Edison ratios are probably lessened by reason of the factor of selection, the suggestion presents itself that the ratio of the female sickness rate to that of the male rate is higher for a group of factory workers than for a general population group. For the Hagerstown adult group a ratio of about 1.3 to 1 was found when the same method of reporting was applied to both sexes. For the Edison group the ratio was found to be nearly 2 to 1. This indication that females are less able to withstand factory work can not be accepted as worth more than a mere suggestion for further inquiry, although it is in line with certain studies of mortality records.

European health insurance records contain a large amount of material bearing upon the incidence of disabling sickness among males and females. Probably the most extensive and well-known experience is that of the Leipzig Local Sick Fund (7). From the records for the period 1887–1905 for compulsory members we have compiled annual rates for disabilities, exclusive of industrial but inclusive of nonindustrial accidents, lasting longer than one day, among males and females, and have found the following ratios according to age groups:

Leipzig local sick fund, 1887–1905

Age group	Ratio of female sickness rate to male rate	Age group	Ratio of female sickness rate to male rate
15–19	1.05	50–54	1.10
20–24	1.24	55–59	.93
25–29	1.44	60–64	.87
30–34	1.44	65–69	.86
35–39	1.40	70–74	.82
40–44	1.28	75+	.75
45–49	1.20		

Since this experience covers 952,674 males and 259,582 females "under observation for one year" and, except for females in the age groups over 65 years of age and for males 75 years of age, includes more than 1,500 persons in every age group, we have a fairly dependable series of ratios for our general purpose. They corroborate what our more fragmentary material points to—that in the younger adult ages the female rate is in excess of the male and that this excess diminishes as middle age approaches. The Leipzig experience carries the record farther and shows that in the older ages the female rate is actually lower than that of males, a result which is indicated by the more favorable death rate among females in this period of life when illness in general is most fatal.

Finally, some reference may be made to results of studies upon the *prevalence* of sickness as ascertained by an inquiry made upon a given day.

Canvasses of seven cotton-mill villages in South Carolina in 1916 (4) showed that the ratios of the adult female rate for disabling sickness (exclusive of confinements) to that of males were as follows:

Seven cotton-mill villages in South Carolina, 1916

Age group	Ratio of female sickness rate [1] to male rate
15–24	1.88
25–34	2.13
35–44	1.15
45–54	1.46
55+	.73

[1] Exclusive of confinements.

The population observed included persons not at work as well as wage earners, but it is very probable that sex ratios for adults based on these canvasses are affected by a greater frequency for illnesses among females to be reported by themselves than among males. We have no way of estimating the effect of this procedure upon these prevalence rates, however. From the extensive sickness surveys made by the Metropolitan Life Insurance Co. (8) in 1915–1917 we have computed the ratios below. The surveys included 376,573 white persons over 14 years of age, and the sicknesses observed were those which were disabling and only those existing on the day of the visit.

Sickness surveys by the Metropolitan Life Insurance Co., 1915–1917

Age group	Ratio of female sickness rate to male rate	
	All areas	North Carolina areas
15–24	1.17	1.46
25–34	1.29	1.66
35–44	1.10	1.81
45–54	.85	1.43
55–64	.79	1.16
65+	.82	.70

The gross results of the Metropolitan surveys agree in a general way with the much smaller experience in the seven South Carolina cotton-mill villages which has just been given. When, however, the Metropolitan surveys of white persons in certain areas in North Carolina are compared with our South Carolina cotton-mill village surveys, the two results are not dissimilar.

This prompts the general observation, which has been frequently suggested to us by a scrutiny of male and female morbidity as well as mortality rates, that the ratios of the incidence or the prevalence of sickness in one sex to that in the other is determined to a considerable extent by environmental as well as by physiological factors.

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EXTRAORDINARY SESSION OF THE PERMANENT COMMITTEE OF THE INTERNATIONAL OFFICE, APRIL–MAY, 1927[1]

The Permanent Committee of the International Office of Public Hygiene held its extraordinary session of 1927 from April 25 to May 2, 1927, at Paris.

There were present: Messrs. Velghe (Belgium), president; Madsen (Denmark); Pulido (Spain); Taliaferro Clark (United States of America); Barrère (France); Duchêne (French West Africa); Audibert (French Indo-China); G. S. Buchanan (Great Britain); J. D. Graham (British India); C. L. Park (Australia); S. P. James (New Zealand); P. G. Stock (Union of South Africa); Matarangas (Greece); Lutrario (Italy); Mitsuzo Tsurumi (Japan); Praum (Luxemburg); Colombani (Morocco); Roussel-Despierres (Monaco); H. M. Gram (Norway); N. M. Josephus Jitta (Netherlands); W. de Vogel (Netherlands Indies); Mimbela (Peru); Djavad Asthiany (Persia); W. Chodzko (Poland); Ricardo Jorge (Portugal); Ionesco-Mihaiesti (Rumania); Yoannovitch (State of Serbia, Croatia, and Slovenia); C. Kling (Sweden); H. Carrière (Switzerland); L. Prochazka (Czechoslovakia); De Navailles (Tunisia); Galib Ata (Turkey); Syssine (Union of Socialist Soviet Republics); also, Mr. Pottevin, director of the International Office of Public Hygiene.

[1] Translation of report furnished by the Office International d'hygiène Publique.

I

A great part of the work of the committee was devoted to questions relating to the *application of the International Sanitary Convention of June 21, 1926.*

Article 7 of this convention provides that, in the exercise of the powers conferred upon it, the office may conclude agreements with the League of Nations and, in particular, with its Singapore bureau, with the Pan American Sanitary Bureau, and with other similar organizations. The committee has prepared the text of two agreements with the League of Nations, one of which considers the making use of the regional bureaus of the league and of the publications issued by the Service of Epidemiological Intelligence, the other, the utilization of the regional bureau for the Far East at Singapore. As concerns the Pan American Sanitary Bureau, conferences have been entered into between the director of the bureau and the international office. These will be continued, and a plan will be presented to the committee at its sessions next November.

The committee also considered, to be taken up again in November, a plan of agreement with the Sanitary, Maritime, and Quarantine Council of Egypt.

Article 28 of the Convention of 1926 provides that the International Office of Public Hygiene shall provide the model of a document to be used as *certificate of deratization or exemption from deratization.* This model has been prepared. It will be communicated at the proper time to the Governments interested.

The committee has given its opinion, on request of the International Hydrographic Bureau, on the questions of *signals* designed to meet the needs of the maritime sanitary services. It has also examined and referred for decision at its next session the question of utilizing *wireless telegraphy* for the needs of these services.

The International Sanitary Conference of Paris of 1926 had referred to the office the study of questions relating to physicians *on board* [vessels]—their qualifications, powers, and the facilities to be extended to vessels having on board a duly qualified physician. To these questions is allied the question of *medical instruction for the use of vessels not having a physician on board.*

As to the first question, the numerous communications received have revealed the manner in which it has been decided or considered in the several countries: Italy, Argentine Republic, United States of America, Spain, Australia, Sweden, Union of Socialist Soviet Republics, Kingdom of the Serbs, Croats, and Slovenes, Greece, Japan, the Netherlands, England, and Peru. The sum of the information thus collected indicates that opinion and practice are still somewhat divergent, but that there exists everywhere the same desire for cooperation in measures securing the appointment of physicians to

serve on board who shall be specially qualified in view of their duties and the responsibilities involved in a moral and material position conformable with the qualifications required of them. These physicians should become, if not functionaries, at least highly useful auxiliaries of the sanitary authority in all countries. The study of the question will be continued.

As regards medical instruction designed for vessels not having a ship's doctor on board, the office will continue the study of the subject in connection with the League of Red Cross Societies, which organization is interested in this matter through its sailors' welfare committee.

II

In applying article 8 of the *Opium Convention of 1925*, the health committee of the League of Nations has submitted for opinion, to the permanent committee of the International Office, the propositions formulated by 13 governments concerning the preparations to be withdrawn from the application of this convention. The committee has not thought fit to decide categorically, believing that each preparation should be examined separately. It has named a commission, composed of pharmacological experts, directed to prepare a technical report which will be examined at the November session.

III

The greater part of the communications received on the subjects considered in the course of the session have been or will be published in the *Bulletin*.

Regulation of therapeutic products.—In Italy, the decree of November 25, 1926, organized the administration of the inspection of biologic products (serums, vaccines, etc.), before there should be obtained for them the authorization (already required by previous law) in view of sale. While they are in the experimental stage, said products may not be used on man except in certain establishments which must be institutions for public welfare and authorized by the prefect. The experimenter must, in addition, make a preliminary declaration to the chief of administration with which the institute is connected, or to the provincial physician.

The preparation of autogenous vaccines is allowed only by institutes, hospitals, and public laboratories which are given specific authority by the Minister of the Interior.

In England, the requirements already established (law of August 7, 1925), and previously described in the *Bulletin*, have been the subject of a regulation of procedure prepared by the special committee the creation of which had been provided for. This regulation, which is to become effective August 6, next, is still in the probationary status. The first part concerns matters of administration; the second relates

to technical matters—standards of quality, purity, etc. The regulation includes not only bacterial serums and vaccines, but also vaccinal lymph, insulin, and preparations of the pituitary gland.

In the Netherlands, a royal decree for the application of the recent law concerning serums, vaccines, and biologic products is in preparation. It does not include autogenous vaccines.

In Switzerland, also, a regulation is in preparation.

The fauna of the rodents and their cutaneous parasites which intervene in the propagation of plague.—This question has been made the subject of a number of communications and of a report summing up the compilation of data received up to the present time, which will be published in the next *Bulletin*. The report stresses the rôle played in the general epidemiology of plague by "wild" plague, which occurs in the desert. Of this there exist four well-known foci—one in Africa, one in Europe, one in Asia, and one in America—and in each focus the disease is conveyed by a different species of rodent: Gerbille, spermophile, tarabagan, California [ground] squirrel. Living outside the habitations of man, these animals have been infected primarily by port rats, through the intermediary of other species, which themselves aid in the production of human plague.

A program of inquiry as to fleas on rats is in progress in the United States of America. In South Africa, it is stated, fleas kept at a distance from their host, the gerbille, in a subterranean nest of that rodent, may remain alive and infectious for at least 60 days. In British India important researches are in progress concerning the epidemiology of plague and antiplague vaccination. At the present time it is proved that if *P. cheopis* is the principal agent in the propagation of plague, *P. astia* also may intervene equally; it shows itself capable in transmitting the infection under experimental conditions.

The duration of the survival of *P. cheopis* and *P. astia*, away from their host, is the subject of a special study. It has been already noted that the females of the two species have a longer life than the males, and that the females of *astia* have a shorter life than the females of *cheopis*.

Researches carried on in British India on the epidemiology of cholera.—Important communications received have been retained to be completed and to provide the subject for discussion at the next session.

Yellow fever.—There occurred in French West Africa, toward the end of the winter season, many outbreaks of yellow fever, generally unrelated, coincident with a recrudescence of the disease in the Gold Coast and Nigeria. Communications relative to these amaryllic manifestations bear witness again to the efficacy of the prophylactic measures.

General paralysis and its treatment by malaria.—In the United States of America the treatment by malaria is at present in favor, by reason of the many favorable results obtained and the willingness with which the patients lend themselves to the treatment.

In Holland, where malarial inoculation is generally performed by subcutaneous injection of infected human blood, the results, which have not been absolutely confirmed, are on the whole favorable. But accidents have occurred which demand prudent action and the close following up of the patients under treatment.

In England there is a preference for inducing infection by the sting of infected mosquitoes. Statistics bearing on 479 cases treated in 1926 indicate 12.8 per cent of cures—so far as we may employ this term after a relatively brief abeyance of symptoms—and 40.2 per cent showing improvement. For the years 1925 and 1926 the number of cases treated rose to 921, of which more than 20 per cent were discharged from the institutions as cured (10 per cent about) or improved. There were also some accidents, showing that it is important that the patients be carefully observed and treated.

Observations made in the different regions of Italy would tend to show that, in the great majority of cases where malaria is prevalent, general paralysis is relatively rare, and vice versa. Analogous conditions were stated for Turkey.

Mental sequellae of lethargic encephalitis.—Information obtained regarding the forms observed and the measures considered in France, England, the United States of America, Sweden, Czechoslovakia, the Kingdom of the Serbs, Croats, and Slovenes, the Argentine Republic, and Portugal—the details of which are published in the *Bulletin* for June, 1927—show that everywhere the data regarding the problem are identical and that the solution is likewise difficult. It is very hard to determine what should be done with children who are not insane but who are wayward and morally delinquent to a degree which makes them incompatible with family and social life. Nowhere has there been found a definite and satisfactory solution.

Post-vaccinal encephalitis.—Two cases of post-vaccinal encephalitis have been notified in Poland; they are unusual in that they present sequellae of hyperkinetic form which is not generally seen. The note relative to these cases will be published in the *Bulletin*.

The data collected regarding post-vaccinal encephalitis does not, in general, point to the existence of a special virus, different from vaccinal virus, nor to any particular technique of vaccination. In the United States, however, where there has not so far been observed any case of post-vaccinal encephalitis, there has been adopted a special vaccination technique. This will be the subject of a communication and a discussion at the November session.

Epidemiology and prophylaxis of scarlet fever.—Information has been received and will be published on the following points: The regulations in force in the United States of America for the production of toxin and antitoxin of the streptococcus, the Dick reaction, and immunization.—The epidemic which has prevailed since the war in the Kingdom of the Serbs, Croats, and Slovenes, and which, having reached its peak in 1921, has since been on the decline.—The experimental studies carried out at the hospital for infectious diseases at Dairen, with the result that reactions have been obtained resembling the Dick reactions with the staphylococcus isolated from cases of scarlatina.

Diseases of the Mediterranean group.—On this subject communications have been received concerning the following: The work of the commission on kala-azar in British India—Kala-azar in Greece, where it prevails principally among children under 14 years of age and in mountain regions. Treatments by injections of atoxyl or of salvarsan have not given favorable results.—Undulant fever in the United States of America.—Undulant fever in Spain.

Other communications concerning the following: Fight against *cancer* in the United States of America, in Italy, in the Netherlands Indies, where among the "tropical races" are found all the known tumors in as great numbers as in comparable groups in Europe.—*Recurrent fever in Spain.—Paludism* in Greece, where the intensified campaign of recent years has produced striking results.—The epidemiologic status of the Union of Socialist Soviet Republics.

Protection of infants and children in Czechoslovakia was made the subject of a communication, the discussion of which, together with that of maternity and infancy in the different countries, was deferred until the next session.

On the other hand, the attention of the committee was called to the possibility of working out international agreements in the field of the struggle against the *social diseases.* The committee took the subject under consideration and decided that a report should be presented in regard to this matter at its November session.

Finally, the committee decided to institute an inquiry into the regulations existing in the different countries regarding *the use of antiseptics in alimentary products carried as provisions on board vessels.*

PUBLIC HEALTH ENGINEERING ABSTRACTS

The Work of the Veterinary Officer from the Pampas of Argentina to Smithfield Market. Lieut. Col. T. Dunlop Young, veterinary inspector, city of London, *Journal of the Royal Sanitary Institute*, vol. 47, No. 8, February, 1927, pp. 500–505. (Abstract by H. B. Hommon.)

Following a very interesting history of the production of cattle and sheep in Argentina, it is stated that the veterinary officer in Argentina as in all the coun-

tries of the world, except in England (there are a few exceptions), is entirely responsible for: (1) Freedom of disease of all animals and their food products entering the country; (2) control of the health of animals in the country and the eradication of disease; (3) antemortem examination of all animals intended for slaughter for human food; (4) post-mortem examination of all animals slaughtered for human food, the organs, all animal products, the abattoirs, markets, railway wagons and ships used for conveying animals, cold-storage transporting barges, meat holds of seagoing ships, and the purity of water supply used by abattoirs and factories; (5) the health of cows and purity of the milk supply; (6) inspection of fish and fish markets; (7) commercial economics in relation to live animals and the meat industry.

The most common diseases observed in abattoirs are: In cattle—tuberculosis, actinomycosis, actinobacillosis, and parasitic diseases; in sheep—caseous lymphadenitis and parasitic diseases; in pigs—tuberculosis, cysticercus cellulosae, and trichina.

The Argentine Government, like the Australian, New Zealand, and United States authorities, has stationed in England a veterinary representative attached to the legation, whose duty it is to watch the condition of the meat on its arrival, report defects, suggest any improvements, detect any unsound meat that has escaped the observations of the Argentine inspectors, and generally advise his department.

The Practical Sterilization of Milk Bottles by Chemical Disinfection. Milton E. Parker. *Public Health News*, Department of Health of State of New Jersey, vol. 11, No. 12, November, 1926, pp. 296–303. (Abstract by W. W. White.)

The best method of chemical disinfection consists of the use of an automatic bottle cleaner with three soaking compartments containing detergent solutions with alkalinities of 4 and 4.5 per cent (as NaOH) in the first two compartments and clean water in the third, at temperatures of 120°, 160°, and 120° F. This was timed for a 4-minute exposure and killed all *B. coli* and maintained proper caustic strength of solutions during cleansing of approximately 15,000 milk bottles. From a number of tests it was determined a 5 per cent solution of NaOH at 100° F. would destroy *B. coli* in two minutes. Na_2CO_3 was not as efficient germicidally as NaOH used alone or in combination with Na_2CO_3.

Sodium hydroxide does not destroy tubercle bacilli, but the temperature of 160° F. for four minutes in second compartment destroys those exposed.

Standard Milk Ordinance Results in Fourteen Alabama Towns. Lealie C. Frank, S. W. Welch, and C. A. Abele. *Southern Medical Journal*,[1] vol. 20, No. 3, March, 1927, pp. 233–240. (Abstract by H. A. Whittaker.)

The authors have summarized the results obtained in 14 Alabama towns in which the standard milk ordinance of the United States Public Health Service has been in force. They state in the conclusion of the article that they believe that the standard ordinance has materially helped to bring about the following observed results in these 14 towns: (1) A marked improvement in the quality of the retail raw-milk supplies, the retail raw-milk rating increasing from 43.9 to 94.3 per cent, a percentage improvement of 115; (2) a marked improvement in the quality of the raw milk delivered to Pasteurization plants, the raw milk to plants rating increasing from 46.2 to 90.8 per cent, a percentage improvement of 97; (3) a marked improvement in the care with which the Pasteurization process is applied, the Pasteurization process rating increasing from 22.2 to 85.8 per cent, a percentage increase of 286; (4) an increase in the percentage of milk Pasteurized, the percentage for the group of towns as a whole increasing from 6.9 to 21.6 per cent, and the number of towns provided with Pasteurized milk increasing from three to nine, five of these now having over 50 per cent of the

[1] Editorial Note: See also Public Health Reports, vol. 42, No. 10, March 11, 1927.

milk Pasteurized; (5) a marked increase in the general milk sanitation rating, which summarizes the combined effect of the three specific ratings and of the percentage of milk Pasteurized. The general rating of the group of 14 communities has increased from 23.2 to 56.1 per cent, a percentage improvement of 142; (6) a marked increase in the consumption of market milk, the combined consumption having increased from 6,533 gallons per day to 12,413 gallons per day, representing a percentage increase of 90.

Further Studies on the Importance of Milk and Milk Products as a Factor in the Causation of Outbreaks of Disease in the United States. Charles Armstrong, surgeon, and Thomas Parran, jr., surgeon, United States Public Health Service. Supplement No. 62 to the PUBLIC HEALTH REPORTS. 81 pages. (Abstract by Arthur P. Miller.)

This study covering a period of 19 years is a valuable contribution to the knowledge concerning milk and milk products as causative agents of disease.

Prior to 1908, 179 milk-borne epidemics were tabulated by various authors, and this compilation increases the number by 612. Of the latter number, 179 outbreaks were attributed to raw milk, 29 to Pasteurized, and 3 to certified, while in 356 the character of the incriminated supply was not given. Milk products took a part in causing epidemics, as 36 outbreaks were attributed to ice cream; 3 to butter, and 4 to cheese.

The case and the death records in these epidemics are incomplete, but such data as could be procured showed 42,637 cases and 410 deaths. An encouraging sign is found in the decrease of the reported epidemics since 1914. From 1881 to 1914, the number was increasing.

Typhoid fever epidemics are most frequently caused by typhoid carriers. Ranking next in importance as an agent is the active case, and following that comes the exchange of infected milk bottles. The outbreaks attributed to carriers reached their greatest incidence in August, while for those caused by active carriers the highest occurrence was in September. The prevalence of milk-borne typhoid fever was markedly high in August and September.

Sixty-six pages are devoted to the tabulation of data on these epidemics.

The Purification of Skim Milk Solutions on a Lath Filter. Max Levine, G. W. Burke, and C. S. Linton. Bulletin 81, Engineering Experiment Station, Iowa State College, Ames, Iowa, vol. 25, No. 18, September 29, 1926, pp. 1–30. (Abstract by A. S. Bedell.)

"The problem of purifying creamery wastes resolves itself into developing means of destroying milk sugar without acid production." Anaerobic methods of treatment develop inhibitory acidities and disagreeable odors. Activated sludge methods are costly and do not produce entirely satisfactory effluents. For small creameries especially, lath filters seem eminently practical and produce very satisfactory results according to these experiments which extended over a period of three months.

"In these experiments a small lath filter was employed. It consisted of six tiers of laths 2 feet square and 1 foot deep, with 4-inch spaces between the tiers to permit sampling at the various depths. Various dilutions of skim milk (0.5 to 1.5 per cent) were applied at rates of 1,125,000 and 2,250,000 gallons per acre per day for 10 to 14 hours daily."

Results for the three dilutions and two rates of filtration: Allowing for mineral solids in the diluent the filter removed from 63–75 per cent of the milk solids principally in the upper 3 feet of the filter. The reduction in oxygen-consumed constituents was from 75.1–87.3 per cent, and the elimination took place largely in upper 3 feet of filter. Ammonification was most marked in the upper layers of the filter. Nitrites rose quickly to a maximum in the third to fifth foot and then decreased. Nitrite formation was markedly retarded by increasing the

concentration or rate of filtration. A distinct reduction in nitrates occurred in the first foot of filter and rose rapidly through the remainder of the filter. Although based on few data, the observed relationships between concentration of waste, rate of treatment, and nitrogen point to a direct mathematical relationship. High nitrates were accompanied by high relative stabilities and, with 1 per cent solution, the effluent from the fourth foot of filter gave relative stabilities of 85–90 per cent. Raw wastes were slightly acid (pH 6.6–6.9) and fresh effluents were distinctly alkaline (pH 7.7–7.9). Anaerobic storage of raw wastes for two days at 20° C. increased acidity (pH 6.4–5.2), while effluents on storage remained alkaline (pH 7.4–7.6).

The pamphlet has charts and tables and the appendix contains tables of original data of seven series of experiments.

Public Health Aspects of Food Preservation. Carl R. Fellers. *American Journal of Public Health*, vol. 17, No. 5, May, 1927, pp. 470–475. (Abstract by D. W. Evans.)

In this article the author mentions the various methods of food preservation, some of their defects, and their effect on public health. He has summarized it in few words, as follows:

The principal methods of food preservation are canning, pasteurizing, drying, smoking, cold storage, freezing, use of salt, vinegar, sugar, chemical preservatives, fermentation, mechanical agents, and combinations of these. The principle of using sound, fresh, and clean raw products is essential to success. After the process all preserved foods must again be protected against extraneous contamination. All empty containers should be thoroughly cleaned before packing.

Occupational accidents, dermatoses, and infections due to handling certain foods, and nonenforcement of the 8-hour laws for women in canneries are additional public health phases of the preserving industry. The presence of thermostable toxins of the paratyphoid-enteritidis group in canned foods has been reported, but their seriousness has not been established. Many decomposed products, aside from being offensive, do not have the public health significance attributed to them. Researches have proved that the vitamins are not greatly injured in the process of canning foods. Canning guides, bulletins, circulars, and receipts distributed by various agencies contain many erroneous statements and faulty methods which have been responsible for several outbreaks of botulism. Accurate and safe directions should be prepared by State colleges or similar agencies. Adulteration of canned, dried, or smoked food is of minor significance from a public health standpoint.

Tubercle Bacilli in the Raw Milk of the Chicago Dairy District. Fred O. Tonney, John L. White, and T. F. Danforth. *American Journal of Public Health*, vol. 17, No. 5, May, 1927, pp. 491–493. (Abstract by Dr. P. R. Carter.)

A survey of the raw milk supply of Chicago was made during the years 1923, 1924, and 1925 to determine the occurrence of bovine tubercle bacilli. A chronological table (1893–1925) showing the incidence of tubercle bacilli in market milk is given in this article. The methods used in conducting the experiment are outlined. The investigators summarized their work as follows: (1) of a series of 258 samples of raw milk destined for the Chicago market, 9, or 3.5 per cent, were found to contain living virulent tubercle bacilli of the bovine type; (2) of 73 samples of similar raw milk collected in one county of the Chicago dairy district, 5, or 6.8 per cent, were found to be actively tuberculous; (3) an estimate, based on these experimental data, of the amount of tuberculous milk sent to pasteurizing plants for the Chicago market indicates that, in the three years prior to January 1, 1926, approximately 43,000 quarts per day, or over 15,000,000 quarts per annum, contained living tubercle bacilli; (4) a similar estimate applied to the largest

producing dairy county of the district indicates that approximately 17,000 quarts per day, or more than 6,250,000 quarts per annum from this one county, were tuberculous in the same period; (5) consideration of these and other facts led to the passage of an ordinance requiring that all milk sold in Chicago after April 1, 1926, be obtained from nontuberculous cows.

Report and Conclusions of the First Subcommittee on Plague Epidemiology. Anon. *Bulletin Mensuel*, Office International d'hygiène Publique, Paris, vol. 18, No. 8, August, 1926, pp. 875–877. (Abstract by W. H. W. Komp.)

The International Sanitary Conference held in Paris in 1926 to revise the International Sanitary Convention of 1912, appointed a subcommittee on plague epidemiology. The conclusions of this subcommittee are as follows: (1) The incubation period of human plague is ordinarily not more than six days. The usual incubation period of human pneumonic plague is three or four days, exceptionally as long as eight days; (2) a patient with bubonic plague is not dangerous to others, except in cases of secondary pneumonia, if he is rid of all piercing and sucking ectoparasites, and kept free from them, especially of fleas. On the contrary, the pneumonic plague patient is extremely dangerous to all who attend him. The expectorations contain great numbers of plague bacilli which may infect contacts by way of the skin, the mucous membranes, especially those of the eye or nose, or by way of the respiratory passages; (3) contacts with plague patients should be considered suspects for a period of six days; (4) the embarkation of plague-infected rats on board ship is the principal danger in the spread of plague. Rodent plague may exist unperceived. All measures, therefore, to suppress the rat population of ships, in ports and localities exposed to the importation of plague, should be considered most efficacious in preventing the diffusion of the disease; (5) plague can not be transmitted by fomites. Merchandise or cargo are dangerous only if they shelter rats or fleas infected with plague.

International Health Year Book, 1925. Report of the League of Nations Health Organization. Plague. (Abstract by A. L. Dopmeyer.)

Austria.—On February 4, 1925, a federal law was passed creating a legal basis on which authorities can take measures for the systematic extermination of rats. (No mention is made as to whether any measures for the ratproofing of buildings are included.)

Bulgaria.—Two disinfection stations were established, one at the Port of Burgas and one at the State Hospital of Plevna. The adoption of hydrocyanic acid gas for the destruction of rats and insects is under consideration.

No cases of plague or cholera occurred in 1925.

Netherlands.—A campaign for the use of public funds for the destruction of rats is being carried on by the press.

Union of Socialist Soviet Republics.—There were two districts still containing plague centers in 1925. In one district there were 253 cases and 185 deaths in 1925. No cases were imported through the seaports and plague did not spread beyond these certain districts.

The principal centers of antiplague work are in the southeastern district of European Russia. There are 9 laboratories, 10 dispensaries, and 12 survey brigades. These brigades carry out investigations concerning the rodents in the Steppes, and take whatever measures are necessary for their destruction. An antiplague pan-Russian conference met in 1925. There is a lack of sufficient disinfecting appliances. The public health commissariat recently drafted regulations requiring local health organizations in the rural districts to build special huts for patients suffering from infectious diseases, but the regulations are difficult to enforce.

How do Pipe Metals Affect Water? H. W. Clark, Chief Chemist, Massachusetts Department of Public Health. *Water Works Engineering*, vol. 80, No. 9, April 27, 1927, pp. 539–540 and 561–562. (Abstract by W. L. Havens.)

This article contains excerpts from a paper presented before the March, 1926, meeting of the New England Water Works Association at Boston. The subject of the article is "Corrosion," which is explained as being due to free oxygen. Water contains hydrogen ions and hydroxyl ions charged positively and negatively, respectively, and in electrical equilibrium. The immersion of the metal disturbs this equilibrium by adding positive ions of the metal which liberate the hydrogen to form a coating over the metal. When free oxygen is present it combines with the hydrogen and thus exposes the metal from which ions go into solution. This cycle continued its corrosion. Carbonates in the water incrust the metal and protect it, but carbonic acid prevents the coating and so contributes to corrosion. Carbonic acid in the absence of free oxygen is practically negative in corrosive effect. Experiments with 23 corrosive ground waters suggested a CO_2 content of 1.7 parts per 100,000 as a critical value, waters showing more carbonic acid giving trouble from corrosion. Extensive data are given concerning experiments with lead, copper, brass, and zinc. This is a valuable paper, but the data are too numerous for abstracting.

Preliminary Sedimentation of Real Value. Frank Bachmann. *Water Works Engineering*, vol. 80, No. 7, March 30, 1927, pp. 401–402 and 428. (Abstract by F. C. Dugan.)

The advantages of preliminary sedimentation in the treatment of turbid waters are: (1) The removal of the bulk of the turbidity, thereby reducing the load on the coagulation basins and, consequently, the cost of cleaning these basins; (2) presettling gives a water low in turbidity, which results in smoother plant operation; (3) it reduces materially the cost of chemicals for coagulation and softening; and (4) it reduces cost of water wasted with sludge, as this water has not been treated with chemicals.

Preliminary sedimentation also gives a more uniform water for coagulation. The addition of a preliminary sedimentation basin at the Waco water works resulted in reducing the cost of the chemicals on an average of 50 per cent.

DEATHS DURING WEEK ENDED JULY 16, 1927

Summary of information received by telegraph from industrial insurance companies for week ended July 16, 1927, and corresponding week of 1926. (From the Weekly Health Index July 21, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended July 16, 1927	Corresponding week 1926
Policies in force	68, 084, 353	64, 955, 791
Number of death claims	11, 947	12, 203
Death claims per 1,000 policies in force, annual rate	9. 1	9. 8

Deaths from all causes in certain large cities of the United States during the week ended July 16, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, July 21, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended July 16, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 16, 1927 [2]
	Total deaths	Death rate [1]		Week ended July 16, 1927	Corresponding week 1926	
Total (66 cities)	6,354	11.3	[3] 10.8	631	[3] 673	[4] 53
Akron	33			7	6	75
Albany [5]	37	16.1	14.0	3	2	63
Atlanta	73			14	12	
White	34			2	1	
Colored	39	([6])		12	11	
Baltimore [5]	197	12.5	12.0	17	25	53
White	156		10.3	14	13	54
Colored	41	([6])	21.9	3	12	47
Birmingham	71	17.2	15.6	10	11	
White	38		9.0	4	6	
Colored	33	([6])	23.2	6	5	
Boston	161	10.6	11.0	21	23	59
Bridgeport	25			4	1	74
Buffalo	132	12.5	12.7	7	15	39
Cambridge	26	10.9	6.4	1	0	18
Camden	47	18.4	7.6	5	1	86
Canton	23	10.6	11.4	3	2	71
Chicago [5]	648	10.9	9.3	54	44	47
Cincinnati	113	14.3	15.7	10	16	62
Cleveland	196	10.4	8.4	20	11	53
Columbus	70	12.5	11.5	5	4	47
Dallas	46	11.5	13.4	6	10	
White	34		13.3	3	8	
Colored	12	([6])	13.5	3	2	
Denver	68	12.2	10.8	6	3	
Des Moines	38	13.3	9.6	5	2	84
Detroit	243	9.5	9.5	25	37	40
Duluth	21	9.5	5.1	1	0	22
El Paso	32	14.6	11.0	4	6	
Erie	19			0	3	0
Fall River [5]	30	11.8	8.0	6	4	106
Flint	26	9.5	10.0	4	7	65
Fort Worth	40	12.7	6.6	3	2	
White	33		6.3	2	1	
Colored	7	([6])	8.2	1	1	
Grand Rapids	31	10.2	7.0	0	2	0
Houston	51			7	9	
White	30			4	5	
Colored	21			3	4	

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 65 cities.
[4] Data for 61 cities.
[5] Deaths for week ended Friday, July 15, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended July 16, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (*From the Weekly Health Index, July 21, 1927, issued by the Bureau of the Census, Department of Commerce*)—Continued

City	Week ended July 16, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 16, 1927 [2]
	Total deaths	Death rate [1]		Week ended July 16, 1927	Corresponding week 1926	
Indianapolis	94	13.1	8.4	7	4	55
White	81		8.2	7	3	63
Colored	13	(6)	9.5	0	1	0
Jersey City	83	13.4	8.2	12	7	90
Kansas City, Kans	31	13.8	11.6	5	3	97
White	27		11.3	4	3	89
Colored	4	(6)	12.7	1	0	152
Kansas City, Mo	76	10.3	9.0	5	6	
Knoxville	33	16.9		8		
White	21			5		
Colored	12	(6)		3		
Los Angeles	239			36	12	103
Louisville	72	11.7	14.4	7	12	60
White	60		13.4	6	9	58
Colored	12	(6)	20.0	1	3	70
Lowell	17	8.0	8.5	3	4	58
Lynn	17	8.5	9.0	3	0	79
Memphis	72	21.0	22.1	7	7	
White	31		15.6	3	3	
Colored	41	(6)	33.9	4	4	
Milwaukee	95	9.3	10.5	11	19	51
Minneapolis	67	7.9	10.2	3	7	17
Nashville [5]	39	14.7	24.7	7	5	
White	30		25.5	6	4	
Colored	9	(6)	22.7	1	1	
New Bedford	21	9.2	11.3	4	6	69
New Haven	36	10.1	10.0	4	2	56
New Orleans	163	20.0	17.8	22	13	
White	93		14.5	10	9	
Colored	70	(6)	27.3	12	4	
New York	1,222	10.7	10.3	125	127	52
Bronx Borough	150	8.4	8.5	22	11	70
Brooklyn Borough	401	9.2	8.9	43	42	44
Manhattan Borough	513	14.7	12.9	45	54	53
Queens Borough	117	7.5	8.4	12	15	51
Richmond Borough	41	14.5	18.2	3	5	56
Newark, N. J	77	8.6	9.0	7	10	35
Oakland	46	9.0	10.2	5	6	59
Oklahoma City	19			2	3	
Omaha	43	10.2	10.9	4	6	44
Paterson	30	10.9	12.4	4	5	71
Philadelphia	415	10.6	11.7	41	49	55
Pittsburgh	174	14.1	10.4	18	22	63
Portland, Oreg	70			8	2	84
Providence	61	11.3	10.4	5	13	49
Richmond	48	13.0	13.0	7	7	92
White	24		9.3	4	1	81
Colored	24	(6)	21.8	3	6	114
Rochester	60	9.7	10.4	9	6	78
St. Louis	184	11.4	12.5	12	22	
St. Paul	52	10.8	12.2	1	5	9
Salt Lake City [5]	16	6.1	11.0	1	2	15
San Antonio	59	12.9	14.2	12	13	
San Diego	42	19.0	9.5	4	0	85
San Francisco	125	11.3	11.9	8	4	50
Schenectady	18	10.1	10.1	3	3	90
Seattle	59			2	6	21
Somerville	17	8.7	4.7	1	0	36
Spokane	31	14.8	13.9	2	2	50
Springfield, Mass	35	12.4	8.6	3	1	46
Syracuse	43	11.4	12.7	3	5	39
Tacoma	15	7.3	12.3	1	3	24
Toledo	56	9.9	9.4	3	2	29
Trenton	27	10.3	16.3	1	6	17
Washington, D. C	128	13.3	10.7	14	15	81
White	96		7.9	4	6	34
Colored	42	(6)	18.7	10	9	184
Waterbury	26			1	2	24
Wilmington, Del	23	9.5	11.8	2	6	50
Worcester	40	10.7	8.6	2	4	24
Yonkers	22	9.6	6.7	3	1	68
Youngstown	28	8.6	12.3	6		34

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 Week Ended July 23, 1927

DIPHTHERIA	Cases
Alabama	17
California	56
Colorado	11
Connecticut	16
Delaware	2
Florida	3
Georgia	10
Idaho	2
Illinois	106
Indiana	25
Iowa [1]	11
Kansas	5
Louisiana	12
Maine	1
Maryland [1]	32
Massachusetts	52
Michigan	58
Minnesota	20
Missouri	21
Montana	1
Nebraska	4
New Jersey	86
New York [2]	67
North Carolina	16
Oklahoma [3]	4
Oregon	8
Pennsylvania	150
Rhode Island	3
South Carolina	15
South Dakota	6
Tennessee	11
Texas	18
Utah [1]	1
Washington	3
Wisconsin	18
INFLUENZA	
Alabama	15
Arkansas	3
California	6

INFLUENZA—continued	Cases
Connecticut	2
Georgia	29
Illinois	11
Indiana	5
Kansas	5
Louisiana	10
Maryland [1]	2
Massachusetts	4
Minnesota	3
Oklahoma [3]	7
Oregon	7
South Carolina	97
Tennessee	6
Texas	11
Wisconsin	12
Wyoming	1
MEASLES	
Alabama	62
Arizona	1
Arkansas	21
California	122
Colorado	13
Connecticut	21
Delaware	1
Florida	8
Georgia	25
Idaho	1
Illinois	137
Indiana	18
Iowa [1]	9
Kansas	45
Louisiana	83
Maine	48
Maryland [1]	6
Massachusetts	189
Michigan	65
Minnesota	18
Missouri	17
Montana	6

[1] Week ended Friday. [2] Exclusive of New York City. [3] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued	Cases
Nebraska	12
New Jersey	12
New York [2]	212
North Carolina	356
Oklahoma [3]	29
Oregon	29
Pennsylvania	260
Rhode Island	1
South Carolina	64
South Dakota	8
Tennessee	13
Texas	11
Utah [1]	3
Vermont	25
Washington	92
Wisconsin	190
Wyoming	10

MENINGOCOCCUS MENINGITIS	
California	3
Connecticut	1
Georgia	1
Illinois	5
Iowa [1]	1
Massachusetts	1
Michigan	4
Minnesota	6
Montana	3
New York [2]	2
Oklahoma [3]	2
Oregon	1
Pennsylvania	2
Tennessee	1
Wisconsin	5

POLIOMYELITIS	
Alabama	1
Arizona	3
California	62
Florida	1
Georgia	2
Illinois	8
Iowa [1]	1
Kansas	2
Louisiana	5
Maryland [1]	1
Massachusetts	8
Michigan	4
Missouri	1
New Jersey	3
New Mexico	22
New York [2]	6
Oklahoma [3]	2
Pennsylvania	2
Tennessee	1
Texas	2
Utah [1]	1
Wisconsin	1

SCARLET FEVER	
Alabama	6
California	69
Colorado	15
Connecticut	11
Delaware	3

SCARLET FEVER—continued	Cases
Florida	2
Georgia	5
Idaho	7
Illinois	97
Indiana	20
Iowa [1]	18
Kansas	19
Louisiana	5
Maine	24
Maryland [1]	14
Massachusetts	130
Michigan	73
Minnesota	61
Missouri	15
Montana	7
Nebraska	2
New Jersey	56
New Mexico	8
New York [2]	78
North Carolina	13
Oklahoma [3]	7
Oregon	6
Pennsylvania	190
Rhode Island	11
South Carolina	9
Tennessee	12
Texas	11
Utah [1]	8
Vermont	1
Washington	7
Wisconsin	65
Wyoming	4

SMALLPOX	
Alabama	10
California	7
Colorado	2
Florida	2
Georgia	11
Idaho	7
Illinois	2
Indiana	67
Iowa [1]	14
Kansas	5
Michigan	17
Minnesota	1
Missouri	6
Montana	2
Nebraska	5
New Mexico	1
New York [2]	16
North Carolina	6
Oklahoma [3]	12
Oregon	15
Pennsylvania	4
South Carolina	8
South Dakota	5
Tennessee	9
Texas	26
Utah [1]	11
Virginia	3
Washington	10
Wisconsin	21
Wyoming	1

[1] Week ended Friday. [2] Exclusive of New York City. [3] Exclusive of Oklahoma City and Tulsa.

TYPHOID FEVER	Cases
Alabama	120
Arizona	3
Arkansas	34
California	14
Colorado	2
Connecticut	2
Florida	22
Georgia	85
Idaho	2
Illinois	31
Indiana	9
Iowa [1]	3
Kansas	16
Louisiana	46
Maine	1
Maryland [1]	14
Massachusetts	15
Michigan	11
Minnesota	8
Missouri	20
Montana	3
Nebraska	2
New Jersey	20
New Mexico	3
New York [1]	12
North Carolina	106
Oklahoma [2]	61
Oregon	4
Pennsylvania	33
Rhode Island	2
South Carolina	94
South Dakota	1
Tennessee	184
Texas	14
Utah [1]	3
Washington	5
Wisconsin	2

Reports for Week Ended July 16, 1927

DIPHTHERIA	Cases
District of Columbia	7
Missouri	17

INFLUENZA	
District of Columbia	1

MEASLES	
District of Columbia	2
Missouri	24
North Dakota	2

SCARLET FEVER	Cases
District of Columbia	5
Missouri	15
North Dakota	12

SMALLPOX	
District of Columbia	1
Missouri	11
North Dakota	4

TYPHOID FEVER	
District of Columbia	2
Missouri	11

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
May, 1927										
Delaware		5		1	44		0	31	0	3
June, 1927										
District of Columbia	0	54	4		15	1	0	65	30	5
Florida	3	57	60	26	200	10	3	421	165	86
Iowa	1	63			458		0	715	91	4
Louisiana	1	60	87	139	293	53	10	15	27	116
Minnesota	11	94	10		341		2	974	10	18
New Jersey	9	431	17		196		7	816	1	20
New York	23	1,875	63	21	3,699		19	2,208	34	91
North Dakota		8			117		0	89	6	2
Tennessee	7	21	59	146	197	156	5	47	54	247
West Virginia	4	43	25		564		2	115	133	46

[1] Week ended Friday. [2] Exclusive of New York City. [3] Exclusive of Oklahoma City and Tulsa.

May, 1927

Delaware:	Cases
Anthrax	1
Chicken pox	10
Mumps	11
Ophthalmia neonatorum	1
Whooping cough	9

June, 1927

Anthrax:	
New York	1
Chicken pox:	
District of Columbia	52
Florida	19
Iowa	92
Louisiana	19
Minnesota	773
New Jersey	1,197
New York	2,556
North Dakota	33
Tennessee	65
West Virginia	70
Dysentery:	
Florida	7
Louisiana	37
Minnesota	3
New York	2
Tennessee	117
German measles:	
Iowa	1
New Jersey	100
New York	940
Hookworm disease:	
Louisiana	11
Lead poisoning:	
New Jersey	4
Leprosy:	
Louisiana	1
Tennessee	1
Lethargic encephalitis:	
District of Columbia	1
Louisiana	3
New York	17
Tennessee	1
Mumps:	
Florida	15
Iowa	84
Louisiana	26

June, 1927—Continued

Mumps—Continued.	Cases
New York	2,056
North Dakota	3
Tennessee	27
Ophthalmia neonatorum:	
Florida	1
New Jersey	3
New York	2
Paratyphoid fever:	
New York	7
Tennessee	7
Puerperal septicemia:	
New York	11
Rabies in animals:	
New York	14
Rabies in man:	
New Jersey	1
New York	1
Tennessee	3
Septic sore throat:	
New York	19
Tetanus:	
Florida	2
Louisiana	2
New York	6
Trachoma:	
New Jersey	2
North Dakota	1
Trichinosis:	
Minnesota	3
Tularaemia:	
North Dakota	3
Typhus fever:	
Florida	2
New York	2
Vincent's angina:	
New York	52
Whooping cough:	
District of Columbia	39
Florida	140
Iowa	73
Louisiana	112
Minnesota	71
New Jersey	677
New York	1,382
North Dakota	15
Tennessee	282
West Virginia	150

Number of Cases of Certain Communicable Diseases Reported for the Month of April, 1927, by State Health Officers

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	201	115	1,326	145	62	289	370	93	308
Arizona	73	18	370	17	67	4	93	3	11
Arkansas [1]									
California	2,091	493	11,259	1,057	831	154	779	47	742
Colorado	150	76	1,623	87	670	27	46	20	52
Connecticut	285	115	326	167	424	0	137	2	120
Delaware	21	7	54	9	65	0	18	1	
District of Columbia	224	111	27		91	0	116	0	47
Florida	243	87	397	66	50	307	154	76	129
Georgia	236	46	871	251	62	227	89	45	260
Idaho	57	18	462	10	115	60	6	3	26
Illinois	1,174	457	7,622	2,263	1,145	113	1,414	40	850
Indiana [1]									
Iowa	170	118	1,680	147	197	70	43	24	70
Kansas	439	48	4,613	249	470	98	185	8	286
Kentucky [2]									
Louisiana	49	113	434	64	41	25	[3] 147	73	91
Maine	124	22	673	69	144	1	56	15	124
Maryland	438	181	116	133	285	0	346	43	367
Massachusetts	971	381	1,401	1,720	2,001	0	583	26	625
Michigan	1,016	406	1,027	966	1,077	128	554	29	539
Minnesota	629	151	874		813	14	201	10	89
Mississippi	705	48	3,023	579	38	23	314	60	2,068
Missouri	373	243	1,448	517	600	121	256	16	280
Montana	114	13	169	20	287	34	33	9	26
Nebraska	252	25	1,855	256	314	124	31	6	64
Nevada [4]									
New Hampshire		11			66	0		2	
New Jersey	1,284	484	326		1,398		449	26	817
New Mexico [1]									
New York	2,698	1,992	3,584	3,646	4,747	23	1,613	71	1,110
North Carolina	498	64	4,754		84	183		11	3,087
North Dakota	28	29	628	43	327	37	16	8	
Ohio	9,844	478	878	846	1,752	170	680	45	679
Oklahoma [5]	109	92	2,000	134	258	163	84	99	141
Oregon	113	53	1,350	82	148	86	60	15	67
Pennsylvania	2,224	771	3,233	2,281	2,387	0	[3] 659	87	944
Rhode Island	54	32	20	24	106	0	39	3	31
South Carolina	539	129	833	90	26	96	263	32	944
South Dakota	80	20	1,057	40	287	42	10	1	42
Tennessee	278	50	698	118	191	100	200	60	357
Texas [1]									
Utah [2]									
Vermont	133	7	566	347	47	0	[3] 24	1	84
Virginia	727	96	3,958		154	143	[3] 126	37	1,857
Washington	493	78	2,141	517	306	204	180	16	188
West Virginia	219	77	818		195	193	71	22	302
Wisconsin	1,010	157	3,540	1,396	804	42	201	4	639
Wyoming	35	6	331	125	71	9	4	1	9

[1] Reports not received at time of going to press.
[2] Reports received weekly.
[3] Pulmonary.
[4] Reports received annually.
[5] Exclusive of Oklahoma City and Tulsa.

Case Rates per 1,000 Population (Annual Basis) for the Month of April, 1927

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	0.96	0.55	6.33	0.69	0.30	1.14	1.77	0.44	1.47
Arizona	1.94	.34	9.81	.45	1.78	.11	2.47	.08	.29
Arkansas [1]									
California	5.74	1.35	30.91	2.90	2.28	.42	2.14	.13	2.04
Colorado	1.70	.86	18.39	.99	7.59	.31	.52	.23	.59
Connecticut	2.12	.86	2.42	1.24	3.15	.00	1.02	.01	.89
Delaware	1.05	.35	2.70	.45	3.25	.00	.90	.05	
District of Columbia	5.05	2.50	.61		2.05	.00	2.61	.00	1.06
Florida	2.17	.78	8.01	.59	.45	2.74	1.37	.68	1.15
Georgia	.91	.18	3.34	.96	.24	.87	.34	.17	1.00
Idaho	1.30	.30	10.53	.23	2.62	1.37	.14	.07	.59
Illinois	1.96	.76	12.71	3.77	1.91	.19	2.36	.07	1.42
Indiana [1]									
Iowa	.85	.59	8.43	.74	.99	.35	.22	.12	.35
Kansas	2.92	.32	30.70	1.66	3.13	.65	1.23	.05	1.90
Kentucky [2]									
Louisiana	.31	.71	2.73	.40	.26	.16	[3].92	.46	.57
Maine	1.90	.34	10.33	1.06	2.21	.02	.86	.23	1.90
Maryland	3.34	1.38	.88	1.01	2.17	.00	2.64	.33	2.80
Massachusetts	2.78	1.09	4.02	4.93	5.74	.00	1.67	.07	1.79
Michigan	2.75	1.10	2.78	2.62	2.92	.35	1.50	.08	1.46
Minnesota	2.85	.68	3.96		3.68	.06	.91	.05	.40
Mississippi	4.79	.33	20.54	3.93	.26	.16	2.13	.41	14.05
Missouri	1.29	.84	5.02	1.79	2.06	.42	.89	.06	.97
Montana	1.94	.22	2.88	.34	4.89	.58	.56	.15	.44
Nebraska	2.20	.22	16.17	2.23	2.74	1.06	.27	.05	.56
Nevada [4]									
New Hampshire		.29			1.76	.00		.05	
New Jersey	4.17	1.57	1.06		4.54		1.46	.08	2.65
New Mexico [1]									
New York	2.87	2.12	3.82	3.88	5.06	.02	1.72	.08	1.18
North Carolina	2.09	.27	19.97		.35	.77		.05	12.97
North Dakota	.53	.55	11.92	.82	6.20	.70	.30	.15	
Ohio	17.85	.87	1.59	1.53	3.18	.31	1.23	.08	1.23
Oklahoma [5]	.62	.53	11.46	.77	1.48	.93	.48	.57	.81
Oregon	1.54	.72	18.45	1.12	2.02	1.18	.82	.21	.92
Pennsylvania	2.78	.96	4.04	2.85	2.98	.00	[3].82	.11	1.18
Rhode Island	.93	.55	.35	.41	1.83	.00	.67	.05	.54
South Carolina	3.55	.85	5.49	.59	.17	.63	1.73	.22	6.22
South Dakota	1.40	.35	18.48	.70	5.02	.73	.17	.02	.73
Tennessee	1.36	.24	3.42	.58	.94	.49	.98	.29	1.75
Texas [1]									
Utah [2]									
Vermont	4.59	.24	19.54	11.98	1.62	.00	[3].83	.03	2.90
Virginia	3.47	.46	18.92		.74	.68	[3].60	.18	8.87
Washington	3.84	.61	16.68	4.03	2.38	1.59	1.40	.12	1.46
West Virginia	1.57	.55	5.87		1.40	1.38	.51	.16	2.17
Wisconsin	4.21	.65	14.76	5.82	3.35	.18	.84	.02	2.66
Wyoming	1.77	.30	16.71	6.31	3.58	.45	.20	.05	.45

[1] Reports not received at time of going to press.
[2] Reports received weekly.
[3] Pulmonary.
[4] Reports received annually.
[5] Exclusive of Oklahoma City and Tulsa.

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of June, 1927, to other State health departments by departments of health of certain States

Referred by—	Diphtheria	Dysentery	Malta fever	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Connecticut	1			2				
Illinois					2	2	4	
Minnesota		2	1	2	1	23	2	
New York				1			2	1

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 30,590,000. The estimated population of the 91 cities reporting deaths is more than 29,600,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended July 9, 1927, and July 10, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
41 States	1,188	1,048	
97 cities	719	591	609
Measles:			
40 States	3,754	6,730	
97 cities	1,153	1,815	
Poliomyelitis:			
41 States	80	39	
Scarlet fever:			
41 States	1,692	2,073	
97 cities	589	784	404
Smallpox:			
41 States	500	303	
97 cities	94	37	48
Typhoid fever:			
41 States	781	775	
97 cities	97	78	120
Deaths reported			
Influenza and pneumonia:			
91 cities	360	389	
Smallpox:			
91 cities	0	1	
Omaha	0	1	

City reports for week ended July 9, 1927

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 week 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 nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations 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	Population July 1, 1925, estimated	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	75,333	1	0	1	0	0	2	1	0
New Hampshire:									
Concord	22,546	0	0	0	0	0	1	0	0
Manchester	83,097	0	1	0	0	1	0	0	2
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Burlington	24,089	0	0	0	0	0	1	0	0
Massachusetts:									
Boston	779,620	40	41	23	1	1	111	22	11
Fall River	128,993	0	2	2	0	0	3	0	2
Springfield	142,065	8	2	0	0	0	3	3	2
Worcester	190,757	5	2	0	6	0	1	0	1
Rhode Island:									
Pawtucket	69,760	0	1	1	0	0	0	0	0
Providence	267,918	0	4	7	0	0	2	0	2
Connecticut:									
Bridgeport	(1)	1	4	2	0	0	0	0	2
Hartford	160,197	2	3	2	0	0	3	2	5
New Haven	178,927	3	1	1	0	0	3	1	1
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	12	8	7	----	0	11	6	6
New York	5,873,356	122	168	286	11	6	39	57	63
Rochester	316,786	16	6	8	----	0	4	2	2
Syracuse	182,003	33	4	0	----	0	100	0	4
New Jersey:									
Camden	128,642	2	2	11	0	0	0	0	2
Newark	452,513	37	8	13	1	0	4	30	5
Trenton	132,020	0	2	1	0	0	0	0	1
Pennsylvania:									
Philadelphia	1,979,364	44	47	34	----	1	22	60	26
Pittsburgh	631,563	39	13	39	----	1	103	6	20
Reading	112,707	1	2	0	----	0	29	7	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	1	5	2	0	0	3	6	5
Cleveland	936,485	30	17	35	0	0	4	37	16
Columbus	279,836	7	2	4	0	0	0	0	3
Toledo	287,380	29	4	0	1	1	9	2	4
Indiana:									
Fort Wayne	97,846	1	2	1	0	0	1	0	1
Indianapolis	358,819	7	3	2	0	0	2	10	3
South Bend	80,091	2	1	1	0	0	3	0	0
Terre Haute	71,071	0	0	0	0	0	0	0	1
Illinois:									
Chicago	2,995,239	66	62	57	1	4	41	33	23
Springfield	63,923	2	0	2	0	0	1	0	0
Michigan:									
Detroit	1,245,824	33	35	38	0	0	6	21	12
Flint	130,316	4	2	1	0	0	9	1	4
Grand Rapids	153,698	4	2	0	0	0	31	1	0

[1] No estimate made.

City reports for week ended July 9, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	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	50,891	2	1	0	0	0	1	4	1
Madison	46,385	1	0	0	0	0	1	1	2
Milwaukee	509,192	33	10	9	0	0	171	22	3
Racine	67,797	4	1	1	0	0	0	1	1
Superior	39,671	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	2	0	0	0	0	0	0	2
Minneapolis	425,435	78	10	6	0	0	1	0	3
St. Paul	246,001	10	9	0	0	0	4	0	5
Iowa:									
Davenport	52,469	0	1	0	0	----	0	3	----
Sioux City	76,411	----	1	----	----	----	----	----	----
Waterloo	36,771	0	0	0	0	----	0	0	----
Missouri:									
Kansas City	367,481	5	2	1	0	0	12	1	8
St. Joseph	78,342	0	1	0	0	0	0	0	4
St. Louis	821,543	7	22	9	0	0	12	29	----
North Dakota:									
Fargo	26,403	0	0	0	0	0	0	1	0
Grand Forks	14,811	0	0	0	0	----	0	0	----
South Dakota:									
Aberdeen	15,036	2	0	0	0	----	0	0	----
Sioux Falls	30,127	0	0	0	0	----	12	0	----
Nebraska:									
Lincoln	60,941	2	0	1	0	0	7	4	0
Omaha	211,768	0	3	2	0	0	0	1	3
Kansas:									
Topeka	55,411	3	0	0	0	0	10	2	0
Wichita	88,367	0	0	1	0	0	4	2	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	1	2	0	0	2	0	2
Maryland:									
Baltimore	796,296	33	11	32	1	1	6	1	10
Cumberland	33,741	1	0	0	0	0	3	0	0
Frederick	12,035	0	0	1	0	0	0	0	0
District of Columbia:									
Washington	497,906	6	5	5	0	1	7	0	6
Virginia:									
Lynchburg	30,395	3	0	0	0	0	3	1	1
Norfolk	(1)	2	0	0	0	0	1	0	1
Richmond	186,403	0	1	4	0	0	13	0	1
Roanoke	58,208	2	0	0	0	0	2	0	1
West Virginia:									
Charleston	49,019	0	0	0	0	0	2	0	1
Wheeling	56,208	0	1	0	0	0	2	0	1
North Carolina:									
Raleigh	30,371	0	0	0	0	0	12	0	0
Wilmington	37,061	14	0	0	0	0	0	1	1
Winston-Salem	69,031	0	0	0	0	0	48	7	1
South Carolina:									
Charleston	73,125	0	0	0	2	0	2	0	0
Columbia	41,225	0	0	0	0	----	15	0	----
Greenville	27,311	0	0	0	0	0	2	1	0
Georgia:									
Atlanta	(1)	1	1	2	5	0	5	1	4
Brunswick	16,809	0	0	0	0	0	0	2	0
Savannah	93,134	----	1	----	----	----	----	----	----
Florida:									
Miami	69,754	0	----	1	1	0	3	0	3
St. Petersburg	26,847	----	0	----	----	0	----	----	1
Tampa	94,743	0	0	0	0	0	3	0	1

[1] No estimate made.

City reports for week ended July 9, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mump cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	0	1	0	0	0	0	2
Louisville	305,935	0	2	1	0	1	1	1	6
Tennessee:									
Memphis	174,533	0	1	0	0	0	7	1	3
Nashville	136,220	0	0	2	0	0	0	0	1
Alabama:									
Birmingham	205,670	4	1	4	1	1	7	0	4
Mobile	65,955	0	0	0	0	1	0	0	0
Montgomery	46,481	0	1	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	----	0	----	----	----	----	----	----
Little Rock	74,216	0	0	0	0	0	5	0	1
Louisiana:									
New Orleans	414,493	0	4	3	0	0	9	0	12
Shreveport	57,857	0	0	0	0	0	12	0	0
Oklahoma:									
Oklahoma City	(1)	1	1	1	0	0	0	0	2
Texas:									
Dallas	194,450	0	2	2	0	----	1	1	----
Galveston	48,375	0	1	0	0	0	0	0	0
Houston	164,954	0	1	4	0	0	0	0	2
San Antonio	198,069	0	1	3	0	----	0	0	----
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	0	1	1
Great Falls	29,883	0	0	0	0	0	2	0	1
Helena	12,037	2	0	0	0	0	0	0	0
Missoula	12,068	0	0	0	0	0	0	0	1
Idaho:									
Boise	23,042	0	0	0	0	0	0	0	0
Colorado:									
Denver	280,911	19	8	6	----	0	9	4	4
Pueblo	43,787	0	1	0	0	0	0	0	1
New Mexico:									
Albuquerque	21,000	0	0	0	0	0	2	1	0
Utah:									
Salt Lake City	130,948	21	3	6	1	0	2	1	3
Nevada:									
Reno	12,665	0	0	0	0	0	2	0	0
PACIFIC									
Washington:									
Seattle	(1)	13	4	2	0	----	149	3	----
Spokane	108,897	20	1	0	0	----	1	0	----
Tacoma	104,455	2	2	3	0	0	9	0	0
Oregon:									
Portland	282,383	1	5	5	0	0	36	0	1
California:									
Los Angeles	(1)	18	26	22	1	1	31	1	11
Sacramento	72,260	2	2	3	0	0	1	1	3
San Francisco	557,530	18	12	3	0	0	15	5	2

[1] No estimate made.

City reports for week ended July 9, 1927—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	0	0	0	0	0	0	1	1	0	0	8
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	7
Manchester	1	0	0	0	0	1	0	0	0	0	16
Vermont:											
Barre	0	0	0	0	0	1	0	0	0	0	2
Burlington	0	0	0	0	0	1	0	0	0	0	5
Massachusetts:											
Boston	24	34	0	0	0	16	0	2	0	16	186
Fall River	1	4	0	0	0	4	1	2	0	0	28
Springfield	2	2	0	0	0	1	0	0	0	5	32
Worcester	3	0	0	0	0	4	0	0	1	0	36
Rhode Island:											
Pawtucket	1	0	0	0	0	0	0	0	0	0	15
Providence	3	22	0	0	0	2	0	0	0	6	55
Connecticut:											
Bridgeport	3	2	0	0	0	1	0	0	0	0	27
Hartford	2	9	0	0	0	3	0	1	0	6	33
New Haven	1	2	0	0	0	0	1	0	0	-------	41
MIDDLE ATLANTIC											
New York:											
Buffalo	10	19	0	0	0	5	0	1	0	15	127
New York	68	135	0	0	0	[1] 101	19	13	1	102	1,184
Rochester	5	2	0	0	0	3	0	0	0	5	47
Syracuse	3	2	0	0	0	1	0	0	0	1	41
New Jersey:											
Camden	1	4	0	0	0	0	0	0	0	0	23
Newark	9	9	0	0	0	4	1	2	0	45	90
Trenton	1	0	0	0	0	2	0	0	0	6	23
Pennsylvania:											
Philadelphia	36	56	0	0	0	19	6	0	0	26	363
Pittsburgh	14	20	0	0	0	9	2	1	0	16	144
Reading	0	2	0	0	0	0	0	0	0	3	19
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	5	13	0	6	0	9	2	1	0	4	148
Cleveland	15	6	1	0	0	20	2	1	0	22	182
Columbus	3	5	0	0	0	7	0	0	0	15	69
Toledo	5	4	1	0	0	6	0	0	0	19	66
Indiana:											
Fort Wayne	0	1	0	0	0	0	0	0	0	3	29
Indianapolis	3	1	3	5	0	4	1	1	0	8	85
South Bend	1	1	0	1	0	1	0	0	0	1	15
Terre Haute	0	0	0	0	0	0	0	0	0	0	18
Illinois:											
Chicago	40	46	0	2	0	42	4	1	3	119	575
Springfield	1	2	0	0	0	1	0	1	0	0	15
Michigan:											
Detroit	33	36	3	2	0	22	4	1	1	90	278
Flint	2	5	0	6	0	0	0	0	0	1	25
Grand Rapids	3	6	0	0	0	2	0	2	0	2	31
Wisconsin:											
Kenosha	0	0	1	0	0	0	0	0	0	0	4
Madison	0	5	0	0	0	2	0	0	1	4	15
Milwaukee	12	11	1	0	0	8	0	0	0	18	106
Racine	2	1	0	0	0	0	0	0	0	3	8
Superior	1	2	2	0	0	0	0	0	0	0	4
WEST NORTH CENTRAL											
Minnesota:											
Duluth	3	1	1	0	0	2	0	2	0	5	21
Minneapolis	13	17	4	0	0	3	1	1	0	2	67
St. Paul	9	7	2	0	0	3	1	1	0	6	53

[1] Pulmonary tuberculosis only.

City reports for week ended July 9, 1927—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—CON.											
Iowa:											
Davenport	0	0	1	0			0	0		0	
Sioux City	1		0				0				
Waterloo	0	0	0	0			0	0		1	
Missouri:											
Kansas City	2	5	0	1	0	11	1	0	0	7	88
St. Joseph	0	1	0	14	0	0	0	0	0	0	25
St. Louis	9	11	1	1	0	7	5	0	0	35	174
North Dakota:											
Fargo	0	1	0	0	0	0	0	0	0	0	9
Grand Forks	0	1	1	0			0	0		0	
South Dakota:											
Aberdeen	0	0	0	0			0	0		3	
Sioux Falls	0	1	0	0			0	0		0	
Nebraska:											
Lincoln	0	0	0	1	0	0	0	0	0	7	11
Omaha	0	2	3	0	0	6	0	0	0	0	35
Kansas:											
Topeka	0	0	1	0	0	1	2	0	0	22	12
Wichita	1	1	2	0	0	0	0	1	0	16	19
SOUTH ATLANTIC											
Delaware:											
Wilmington	1	2	0	0	0	1	0	0	0	0	26
Maryland:											
Baltimore	9	8	0	0	0	14	5	1	0	50	187
Cumberland	0	0	0	0	0	0	0	0	0	0	12
Frederick	0	0	0	0	0	0	0	0	0	0	4
District of Col.:											
Washington	6	11	0	9	0	15	3	1	0	17	116
Virginia:											
Lynchburg	0	1	0	0	0	0	0	0	0	3	12
Norfolk	0	0	0	0	0	2	1	1	0	7	
Richmond	1	1	0	0	0	5	2	0	0	5	37
Roanoke	0	0	0	0	0	1	1	0	0	0	14
West Virginia:											
Charleston	0	1	0	0	0	3	1	0	0	0	16
Wheeling	1	2	0	0	0	0	1	0	0	2	14
North Carolina:											
Raleigh	0	0	0	0	0	3	1	0	1	3	18
Wilmington	0	0	0	0	0	2	0	0	0	1	9
Winston-Salem	0	0	1	0	0	2	2	0	0	12	20
South Carolina:											
Charleston	0	0	0	1	0	4	2	0	0	2	23
Columbia	0	0	0	0	0	1	2	2	0	13	9
Greenville	0	0	0	0	0	0	1	0	0	1	3
Georgia:											
Atlanta	2	3	3	3	0	5	3	13	3	8	81
Brunswick	0	0	0	0	0	2	0	0	0	0	8
Savannah	0		0				2				
Florida:											
Miami	0	0	0	0	0	2		2	1	5	27
St. Petersburg	0		0		0	0	0		0		12
Tampa	1	1	0	0	0	2	1	1	0	0	24
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	3	0	0	0	2	0	0	0	0	20
Louisville	2	1	0	4	0	2	4	1	1	1	77
Tennessee:											
Memphis	1	3	0	1	0	2	5	4	1	3	75
Nashville	1	1	0	0	0	2	5	20	0	2	44
Alabama:											
Birmingham	1	1	1	5	0	7	4	4	0	5	72
Mobile	0	0	0	0	0	0	0	0	0	1	12
Montgomery	0	0	0	0	0	0	1	3	0	0	

City reports for week ended July 9, 1927—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											
Arkansas:											
Fort Smith	1	----	0	----	----	----	0	----	----	----	----
Little Rock	0	0	0	0	0	2	2	0	0	5	----
Louisiana:											
New Orleans	1	1	1	0	0	18	4	4	0	0	140
Shreveport	0	0	1	0	0	1	1	0	0	2	31
Oklahoma:											
Oklahoma City	0	2	0	6	0	0	2	2	1	1	32
Texas:											
Dallas	1	2	0	0	----	----	3	0	----	0	----
Galveston	0	0	0	0	0	1	0	0	0	0	9
Houston	0	7	0	0	0	2	2	0	0	0	44
San Antonio	0	0	0	0	----	----	1	0	----	0	----
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	9	9
Great Falls	0	3	1	0	0	1	0	0	0	0	6
Helena	0	3	0	0	0	0	0	0	0	0	4
Missoula	0	1	0	0	0	0	0	0	0	0	6
Idaho:											
Boise	0	0	1	0	0	0	0	0	0	0	4
Colorado:											
Denver	6	3	2	0	0	5	1	0	0	8	83
Pueblo	0	0	0	0	0	0	1	0	0	0	6
New Mexico:											
Albuquerque	0	0	0	0	0	4	0	0	0	0	6
Utah:											
Salt Lake City	1	3	0	5	0	0	0	2	0	23	32
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	1
PACIFIC											
Washington:											
Seattle	6	4	3	0	----	----	0	0	----	10	----
Spokane	2	4	3	15	----	----	0	0	----	5	----
Tacoma	1	1	2	7	0	0	0	0	0	3	24
Oregon:											
Portland	3	0	6	4	0	3	0	1	0	6	58
California:											
Los Angeles	11	7	3	0	0	27	4	2	0	13	199
Sacramento	1	0	0	2	0	2	1	2	0	0	15
San Francisco	6	7	1	4	0	7	1	0	0	17	146

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	0	1	0	0	2	0	0	2	1
Rhode Island:									
Providence	1	0	0	0	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York	1	2	2	3	0	0	2	2	2
Pennsylvania:									
Philadelphia	0	0	0	3	0	0	0	0	0
Pittsburgh	0	0	0	1	0	0	0	0	1

City reports for week ended July 9, 1927—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:									
Cleveland	1	0	0	0	0	0	0	0	0
Columbus	0	0	0	1	0	0	0	0	0
Illinois:									
Chicago	2	1	0	0	1	1	1	0	0
Wisconsin:									
Milwaukee	7	4	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	2	1	0	0	0	0	0	0	0
Minneapolis	0	0	1	0	0	0	0	0	0
Missouri:									
Kansas City	0	0	0	1	0	0	0	0	0
SOUTH ATLANTIC									
North Carolina:									
Raleigh	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston	0	0	0	0	1	2	0	1	0
Georgia:									
Atlanta	0	0	0	0	2	0	0	1	0
Florida: [1]									
Miami	1	0	0	0	2	0	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	0	0	0	0	1	0	0	0	0
Nashville	0	0	0	0	0	1	0	2	0
Alabama:									
Birmingham	0	0	0	0	2	0	0	1	0
Mobile	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	0	0	0	0	0	0	0	5	1
Shreveport	0	0	0	0	0	5	0	0	0
Texas:									
Dallas	0	----	0	----	0	----	0	1	----
Houston	0	1	0	0	0	1	0	0	0
MOUNTAIN									
Montana:									
Billings	1	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	0	0	0	0	0	0	0	1	0
PACIFIC									
Washington:									
Spokane	1	----	0	----	0	----	0	0	----
Tacoma	1	1	0	0	0	0	0	0	0
Oregon:									
Portland	0	1	0	1	0	0	0	0	0
California:									
Los Angeles	2	0	0	0	0	0	0	6	0
Sacramento	1	0	0	0	0	0	0	0	0
San Francisco	2	0	1	0	0	1	0	2	0

[1] Typhus fever: 1 case at Tampa, Fla.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended July 9, 1927, compared with those for a like period ended July 10, 1926. The population figures used in computing the rates are approximate estimates as of July 1,

1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, June 5 to July 9, 1927—annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927
101 cities	136	[2] 162	113	151	130	162	[3] 122	[4] 142	102	[5] 123
New England	68	132	78	118	59	116	64	88	57	[6] 92
Middle Atlantic	156	248	125	217	152	270	164	212	120	197
East North Central	146	126	131	142	162	132	117	[7] 125	106	102
West North Central	234	81	169	79	192	46	125	60	93	[8] 39
South Atlantic	60	[2] 124	67	118	45	107	82	143	65	[9] 86
East South Central	26	20	16	41	10	36	[3] 22	[10] 21	5	41
West South Central	47	46	43	55	43	67	47	[11] 125	43	[11] 52
Mountain	128	369	146	207	118	153	155	[12] 129	118	108
Pacific	158	126	102	115	131	113	129	76	179	86

MEASLES CASE RATES

101 cities	930	[2] 426	749	361	619	302	[3] 461	[4] 276	311	[5] 196
New England	658	457	493	406	425	327	318	341	245	[6] 322
Middle Atlantic	708	299	586	281	477	247	314	201	211	154
East North Central	1,026	296	1,003	261	838	214	739	[7] 215	481	182
West North Central	2,051	373	1,264	248	942	216	605	204	417	[8] 88
South Atlantic	1,093	[2] 851	818	694	695	531	432	447	291	[9] 249
East South Central	1,391	158	693	132	610	132	[3] 428	[10] 85	284	76
West South Central	125	424	77	268	95	130	52	[11] 151	47	[11] 116
Mountain	921	566	702	342	793	450	437	[12] 505	264	135
Pacific	589	1,139	597	971	482	843	458	775	335	539

SCARLET FEVER CASE RATES

101 cities	260	[2] 241	233	198	212	190	[3] 170	[4] 130	127	[5] 100
New England	255	323	203	265	236	237	186	221	158	[6] 182
Middle Atlantic	195	287	222	224	210	223	188	149	129	123
East North Central	333	247	273	216	251	209	187	[7] 135	145	91
West North Central	637	195	484	163	357	159	270	89	206	[8] 94
South Atlantic	158	[2] 110	130	82	151	96	65	82	63	[9] 56
East South Central	78	66	47	71	47	82	[3] 66	[10] 59	52	46
West South Central	86	34	69	8	30	38	60	[11] 17	34	[11] 43
Mountain	118	719	128	665	118	441	91	[12] 294	55	117
Pacific	236	204	214	181	158	139	150	86	121	60

[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, 1926 and 1927, respectively.
[2] Greenville, S. C., not included.
[3] Covington, Ky., not included.
[4] Indianapolis, Ind., Montgomery, Ala., Fort Smith, Ark., and Helena, Mont., not included.
[5] Bridgeport, Conn., Sioux City, Iowa, Savannah, Ga., and Fort Smith, Ark., not included.
[6] Bridgeport, Conn., not included.
[7] Indianapolis, Ind., not included.
[8] Sioux City, Iowa, not included.
[9] Savannah, Ga., not included.
[10] Montgomery, Ala., not included.
[11] Fort Smith, Ark., not included.
[12] Helena, Mont., not included.

Summary of weekly reports from cities, June 5 to July 9, 1927—annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

SMALLPOX CASE RATES

	Week ended—									
	June 12, 1926	June 11, 1927	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927
101 cities	16	[2] 20	11	19	16	16	[2] 11	[4] 13	7	[5] 16
New England	0	0	0	0	0	0	0	0	0	[6] 0
Middle Atlantic	0	0	0	0	0	0	2	0	0	0
East North Central	12	21	10	21	14	12	10	[7] 4	7	15
West North Central	28	32	32	30	44	58	26	38	28	[8] 33
South Atlantic	37	[2] 29	30	36	26	29	11	18	9	[9] 24
East South Central	52	107	10	56	88	56	[3] 38	[10] 21	0	51
West South Central	34	8	26	13	17	13	21	[11] 13	4	[11] 0
Mountain	46	27	27	54	18	90	55	[12] 64	9	45
Pacific	54	92	24	65	32	21	19	73	24	73

TYPHOID FEVER CASE RATES

101 cities	12	[2] 11	11	13	12	11	[3] 16	[4] 15	13	[5] 17
New England	17	5	19	12	9	2	12	7	9	[6] 15
Middle Atlantic	6	6	9	6	10	4	11	6	7	8
East North Central	4	7	3	8	4	6	5	[7] 5	5	5
West North Central	6	14	10	6	4	6	10	8	16	[8] 10
South Atlantic	26	[2] 18	28	27	30	40	35	22	43	[9] 36
East South Central	57	41	21	82	36	61	[3] 126	[10] 134	52	163
West South Central	52	34	30	38	30	21	13	[11] 78	30	[11] 17
Mountain	9	0	0	18	0	18	27	[12] 9	0	18
Pacific	13	21	8	8	16	8	21	16	13	10

INFLUENZA DEATH RATES

95 cities	10	[2] 6	7	6	5	7	[3] 6	[13] 3	4	[14] 3
New England	12	0	9	2	0	5	5	5	7	[6] 2
Middle Atlantic	9	5	9	5	6	6	7	2	1	4
East North Central	10	4	3	5	3	5	5	[7] 3	7	3
West North Central	4	4	4	2	6	10	8	2	0	0
South Atlantic	6	[2] 9	4	9	6	2	8	6	0	[9] 4
East South Central	36	10	16	5	5	25	[3] 0	[10] 0	16	15
West South Central	18	26	22	17	22	4	13	4	4	[15] 0
Mountain	9	9	0	9	0	27	9	[12] 9	0	0
Pacific	0	7	4	0	0	10	4	3	4	3

PNEUMONIA DEATH RATES

95 cities	95	[2] 94	87	87	73	74	[3] 75	[13] 73	67	[14] 60
New England	101	88	87	107	68	86	92	60	54	[6] 60
Middle Atlantic	110	112	95	95	83	85	90	71	73	64
East North Central	87	93	74	86	60	71	61	[7] 79	65	49
West North Central	59	50	74	48	44	52	38	77	53	54
South Atlantic	96	[2] 65	112	61	95	46	89	57	72	[9] 59
East South Central	124	112	98	71	124	56	[3] 121	[10] 102	119	82
West South Central	88	103	66	95	71	43	53	73	53	[15] 99
Mountain	82	90	100	153	109	54	46	[12] 92	36	99
Pacific	67	83	74	100	42	131	42	69	53	55

[2] Greenville, S. C., not included.
[3] Covington, Ky., not included.
[4] Indianapolis, Ind., Montgomery, Ala., Fort Smith, Ark., and Helena, Mont., not included.
[5] Bridgeport, Conn., Sioux City, Iowa, Savannah, Ga., and Fort Smith, Ark., not included.
[6] Bridgeport, Conn., not included.
[7] Indianapolis, Ind., not included.
[8] Sioux City, Iowa, not included.
[9] Savannah, Ga., not included.
[10] Montgomery, Ala., not included.
[11] Fort Smith, Ark., not included.
[12] Helena, Mont., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,200	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Reports for weeks ended June 25 and July 2, 1927.—The following reports for the weeks ended June 25 and July 2, 1927, were transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Week ended June 25, 1927

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Ceylon: Colombo [1]	2	2	0	0	0	0
British India:						
Karachi	----	0	----	0	1	0
Bombay	----	5	----	0	37	24
Negapatam	----	0	----	0	0	1
Madras	----	0	----	3	1	1
Calcutta	----	0	----	31	27	21
Bassein	----	7	----	1	0	0
Rangoon	----	3	----	1	7	3
Siam: Bangkok	0	0	4	1	2	0
French Indo-China:						
Saigon and Cholon	0	0	3	0	0	0
French Indo-China—Continued.						
Tourane	0	0	2	2	0	0
Haiphong	0	0	8	8	0	0
China:						
Canton	0	0	3	0	0	0
Hong Kong	0	0	0	0	1	1
Manchuria:						
Mukden	0	0	0	0	1	0
Changchun	0	0	0	0	1	0
Japan: Nagasaki	0	0	0	0	1	0
Egypt: Port Said	2	0	0	0	0	0

[1] One plague-infected rat was found during the week.

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Jeddah.
Iraq.—Basra.
Persia.—Mohammerah, Bender-Abbas, Bushire, Lingah.
British India.—Visagapatam, Chittagong, Cochin, Tuticorin, Moulmein.
Portuguese India.—Nova Goa.
Federated Malay States.—Port Swettenham.
Straits Settlements.—Singapore, Penang.
Dutch East Indies.—Batavia, Banjermasin, Sabang, Pontianak, Semarang, Menado, Cheribon, Makassar, Balikpapan, Padang, Palembang, Surabaya, Belewan-Deli.
Sarawak.—Kuching.
British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.
Portuguese Timor.—Dilly.
Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.
China.—Amoy, Shanghai, Tientsin, Tsingtao.
Macao.
Formosa.—Keelung, Takao.
Chosen.—Chemulpo, Fusan.
Manchuria.—Yingkow, Antung, Harbin.
Kwantung.—Port Arthur, Dairen.
Japan.—Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.
New Guinea.—Port Moresby.
New Britain Mandated Territory.—Rabaul and Kokopo.
New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.
Samoa.—Apia.
New Caledonia.—Noumea.
Fiji.—Suva.
Hawaii.—Honolulu.
Society Islands.—Papeete.

AFRICA

Egypt.—Suez, Alexandria.
Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea.—Massaua.
French Somaliland.—Djibouti.
British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Zanzibar.—Zanzibar.
Kenya.—Mombasa.
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria.

AFRICA—continued

Portuguese East Africa.—Mozambique, Beira, Lourenco-Marques.
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Reunion.—Saint Denis.

AFRICA—continued

Mauritius.—Port Louis.
Madagascar.—Majunga, Tamatave, Diego-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Arabia.—Kamaran, Aden, Perim.
Dutch East Indies.—Samarinda, Tarakan.
Union of Socialist Soviet Republics.—Vladivostok.

Belated information:

Week ended June 18: *Canton*, *Pondicherry* and *Karikal*, nil.

Movement of infected ships:

Singapore.—S. S. *Rohna* has arrived from *Negapatam* with smallpox cases among coolies.

Week ended July 2, 1927

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Ceylon: Colombo [1]	2	2	0	0	3	0
British India:						
Bombay		7		2	28	18
Negapatam		0		2	1	0
Madras		0		0	6	2
Vizagapatam		0		0	4	1
Calcutta		0		21	16	11
Bassein		2		2	0	0
Rangoon		4		0	7	3
Siam: Bangkok	0	0	1	0	1	1
French Indo-China:						
Saigon and Cholon	0	0	2	0	0	0
Tourane	0	0	2	1	0	0
China: Hong Kong	0	0	0	0	2	2
Manchuria: Mukden	0	0	0	0	1	0
Japan: Nagasaki	0	0	0	0	18	0
Egypt:						
Alexandria	1	0	0	0	0	0
Suez	0	0	0	0	1	0

[1] One plague-infected rat has been found during the week.

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Jeddah, Aden, Perim.
Iraq.—Basra.
Persia.—Mohammerah, Bender-Abbas, Bushire, Lingah.
British India.—Karachi, Chittagong, Cochin, Tuticorin, Moulmein.
Portuguese India.—Nova Goa.
Federated Malay States.—Port Swettenham.
Straits Settlements.—Singapore, Penang.
Dutch East Indies.—Batavia, Banjermasin, Pontianak, Semarang, Menado, Cheribon, Makassar, Balikpapan, Padang, Palembang, Surabaya, Belawan-Deli, Samarinda, Tarakan.
Sarawak.—Kuching.
British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.
French Indo-China.—Haiphong.
Portuguese Timor.—Dilly.
Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.
China.—Canton, Amoy, Shanghai, Tientsin, Tsingtao.
Macao.
Formosa.—Keelung, Takao.
Chosen.—Chemulpo, Fusan.
Manchuria.—Yingkow, Antung, Changchun, Harbin.

ASIA—continued

Kwantung.—Port Arthur, Dairen.
Japan.—Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.
New Guinea.—Port Moresby.
New Britain Mandated Territory.—Rabaul and Kokopo.
New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.
Samoa.—Apia.
New Caledonia.—Nouméa.
Fiji.—Suva.
Hawaii.—Honolulu.
Society Islands.—Papeete.

AFRICA

Egypt.—Port Said.
Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea.—Massaua.
French Somaliland.—Djibouti.

AFRICA—continued

British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Zanzibar.—Zanzibar.
Kenya.—Mombasa.
Tanganyika.—Dar-es-Salaam.
Seychelles.—Victoria.
Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.

AFRICA—continued

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Reunion.—Saint Denis.
Mauritius.—Port Louis.
Madagascar.—Majunga, Tamatave, Diégo-Suarez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from:

Arabia: Kamaran.
Dutch East Indies: Sabang.
Union of Socialist Soviet Republics: Vladivostok.

CANADA

Communicable diseases—Two weeks ended July 9, 1927.—The Canadian ministry of health reports cases of certain communicable diseases from seven Provinces of Canada for the two weeks ended July 9, 1927, as follows:

WEEK ENDED JULY 2, 1927

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever				1				1
Influenza	6							6
Lethargic encephalitis				1				1
Poliomyelitis				1				1
Smallpox				34	3	1	10	48
Typhoid fever	4	8	75	25	1	1	1	115

WEEK ENDED JULY 9, 1927

Cerebrospinal fever			1			1		2
Influenza	3				3			6
Lethargic encephalitis						1		1
Smallpox				11			14	25
Typhoid fever		4	66	4	1		4	79

Communicable diseases—Quebec—Week ended July 9, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended July 9, 1927, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Scarlet fever	50
Chicken pox	12	Smallpox	6
Diphtheria	43	Tuberculosis	11
German measles	6	Typhoid fever	66
Influenza	2	Whooping cough	13
Measles	37		

Typhoid fever—Montreal—January 2–July 16, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	Apr. 16, 1927	175	38
Jan. 15, 1927	4	3	Apr. 23, 1927	125	43
Jan. 22, 1927	1	2	Apr. 30, 1927	105	23
Jan. 29, 1927	3	1	May 7, 1927	106	19
Feb. 5, 1927	1	0	May 14, 1927	367	16
Feb. 12, 1927	0	0	May 21, 1927	770	26
Feb. 19, 1927	1	2	May 28, 1927	353	38
Feb. 26, 1927	1	1	June 4, 1927	239	37
Mar. 5, 1927	9	1	June 11, 1927	128	36
Mar. 12, 1927	203	4	June 18, 1927	86	
Mar. 19, 1927	383	14	June 25, 1927	75	23
Mar. 26, 1927	568	22	July 2, 1927	66	21
Apr. 2, 1927	649	48	July 9, 1927	52	10
Apr. 9, 1927	386	40	July 16, 1927	30	4

EGYPT

Plague—June 4–22, 1927.—Plague has been reported in Egypt as follows: Week ended June 10, 1927—two cases, of which one occurred at Alexandria; June 22, 1927—one fatal case, septicemic, at Port Said.

Summary—January 1–June 10, 1927.—During the period January 1 to June 10, 1927, 42 cases of plague were reported in Egypt, as compared with 66 cases reported for the corresponding period of the year 1926.

GREAT BRITAIN (SCOTLAND)

Chicken pox—Glasgow—May 1–28, 1927.—During the four weeks ended May 28, 1927, chicken pox was reported still prevalent, with 796 registered cases at Glasgow, Scotland.

ITALY

Undulant (Mediterranean) fever—Florence.—The occurrence of undulant, or Mediterranean, fever has been reported at Florence, Italy, as follows: Week ended May 28, 1927, cases, 4; week ended June 18, 1927, cases, 2.

LIBERIA

Yellow fever—Monrovia—June 5–18, 1927.—During the weeks ended June 11 and 18, 1927, three cases of yellow fever were reported at Monrovia, Liberia.

SENEGAL

Yellow fever—M'Bour—June 15–16, 1927.—Two fatal cases of yellow fever were reported at M'Bour, Senegal, occurring June 15 and 16, respectively. The cases occurred in Syrians.

VIRGIN ISLANDS

Communicable diseases—June, 1927.—During the month of June, 1927, communicable diseases were reported in the Virgin Islands of the United States as follows:

Island and disease	Cases	Remarks
St. Thomas and St. John:		
Gonococcus infection	1	
Syphilis	4	Secondary, 2.
Tuberculosis	3	Chronic, pulmonary. One imported.
Uncinariasis	1	Necator americanus.
St. Croix:		
Dysentery	1	Entamebic.
Filariasis	5	Bancrofti.
Leprosy	1	

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

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.

Reports Received During Week Ended July 29, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Swatow	June 5-11			Prevalent.
India				May 15-28, 1927: Cases, 15,529; deaths, 9,080.
Bombay	May 29-June 4	1	1	
Calcutta	June 5-11	42	22	
Rangoon	do	1	1	
Indo-China (French):				
Saigon	May 28-June 3	3	2	
Philippine Islands:				
Bulacan Province	June 7	1		At Mambog, Malalos.
Leyte Province—				
Palo	May 18	1		Two suspect cases, Leyte Province, May 20; one suspect case, Masbate Province, May 23, 1927. Awaiting confirmation.
Siam				May 29-June 4, 1927: Cases, 6; deaths, 5.
Bangkok	May 29-June 4	3	1	Apr. 1-June 4, 1927: Cases, 481; deaths, 328.

PLAGUE

Egypt				June 4-22, 1927: Cases, 3; deaths, 1.
City—				
Alexandria	June 4-10	1		
Port Said	June 22	1	1	Septicemic.
District—				
Biba	June 4-10	1		At Nana.
Greece	May 1-31	1	1	
India				May 15-28, 1927: Cases, 15,073; deaths, 3,458.
Bombay	May 29-June 11	8	5	
Rangoon	June 5-11	5	5	
Java:				
Batavia	May 29-June 11	27	27	Province.
East Java and Madura	May 22-28	6	6	
Senegal				June 20-26, 1927: In three interior districts, cases, 17; deaths, 5.
Dakar	June 20-26	5	3	
Rufisque	do	16	15	In the suburbs of Guindel and Tivaouane.
Thies	do	8	4	Including Post.

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

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

Reports Received During Week Ended July 29, 1927—Continued

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Oran	June 21-30	3		
British South Africa:				
Northern Rhodesia	May 28-June 3	31		Native.
Canada				June 26-July 9, 1927: Cases, 73.
Alberta	June 26-July 9	24		
Manitoba	do	3		
Winnipeg	July 9-15	3		
Ontario	June 26-July 9	45		
Ottawa	July 10-16	6		
Toronto	June 26-July 16	4		
Quebec	July 3-9	6		
Saskatchewan	June 26-July 2	1		
China:				
Hong Kong	June 5-11	1	2	
Manchuria—				
Changchun	May 30-June 5	1		
Fushun	do	1		
Egypt:				
Alexandria	June 11-17	1		
Cairo	Jan. 22-28	3		
France:				
Paris	May 21-June 20	8	2	
Great Britain:				
England and Wales—				
Cardiff	June 26-July 2	2		
Newcastle-on-Tyne	do	1		
Scotland—				
Dundee	do	1		
Greece	May 1-31	3	1	
India				May 15-28, 1927: Cases, 1,038; deaths, 794.
Bombay	May 28-June 11	75	49	
Calcutta	June 5-11	44	35	
Madras	June 12-18	1		
Rangoon	June 5-11	8	4	
Poland	May 1-14	3		
Portugal				
Lisbon	June 12-July 2	1	1	
Siam	May 29-June 4	2		Apr. 1-June 4, 1927: Cases, 63; deaths, 21.

TYPHUS FEVER

Algeria:				
Oran	June 21-30	8		
Egypt:				
Cairo	Jan. 15-21	1		
Greece	May 1-31	11		
Palestine:				
Safad	June 14-20	2		
Poland	May 1-14	244	19	

YELLOW FEVER

Liberia:				
Monrovia	June 5-18	3		
Senegal:				
M'Bour	June 15-16	2	2	In Syrians.

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

Reports Received from June 25 to July 22, 1927[1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-28	1	1	
Swatow	May 15-28	7	8	
India	Apr. 17-May 14			Cases, 14,805; deaths, 7,207.
Bombay	May 8-14	1		
Calcutta	May 8-June 4	319	204	
Karachi	May 29-June 4	1	1	
Rangoon	May 8-June 4	8	5	
India, French Settlements in	Mar. 30-Apr. 30	4	2	
Indo-China (French):				
Saigon	Apr. 30-May 27	124	90	Including Cholon.
Siam	May 1-28			Cases 101; deaths, 43.
Bangkok	do	23	6	

PLAGUE

Argentina:				
Formosa	Reported July 6	8		
Azores:				
St. Michaels Island	May 15-June 3	2		
British East Africa:				
Kenya	Apr. 24-May 7	7	14	
Tanganyika	Mar. 29-May 7		36	
Uganda	Jan. 1-Feb. 28	138	121	
Do	Mar. 27-May 14	72	57	
Canary Islands:				
Laguna District—				
Tejina	June 17	1		
Ceylon:				
Colombo	May 1-June 4	11	7	Plague rats, 4.
Egypt	May 21-27			Cases, 1. Total from Jan. 1-May 27, 1927: Cases, 40; corresponding period, 1926: Cases, 43.
Alexandria	June 4-10	1		
Beni-Souef	do	1		
Tanta District	do	1		
Greece:				
Patras	May 30-June 11	4		
India	Apr. 17-May 14			Cases, 5,584; deaths, 4,121.
Bombay	May 8-28	54	51	
Madras	May 1-21	21	9	
Rangoon	May 8-June 4	13	11	
Indo-China (French)	Apr. 1-May 10	7		
Iraq:				
Baghdad	Apr. 8-16	3	1	
Java:				
Batavia	May 1-28	60	61	Province.
East Java and Madura—				
Pasoeroean Residency	May 9			Outbreak reported at Ngadi wono.
Surabaya	Apr. 17-May 7	24	24	
Madagascar				Mar. 16-Apr. 15, 1927: Cases, 184; deaths, 168.
Province—				
Ambositra	Mar. 16-Apr. 15	32	27	
Antisirabe	do	6	6	
Miarinarivo (Itasy)	do	32	32	
Moramanga	do	8	8	
Tananarive	do	102	91	
Tananarive Town	do	6	6	
Peru	Apr. 1-May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1-30	1		
Lambayeque	do	1		
Libertad	Apr. 1-May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1-30	5	1	
Senegal	May 23-June 19			Cases, 60; deaths, 20.
Baol	June 2-19	4	1	
Guindel	do	11	2	
Medina	June 13-19	2	2	
Rufisque	May 23-June 19	28	12	
Thies District	do	12	2	
Tivaouane	June 2-19	7	3	

[1] From medical officers of the Public Health Service, American consuls, and other sources. For reports received from January 2 to June 24, 1927, see Public Health Reports for June 24, 1927. The tables of epidemic diseases are terminated semiannually and new tables begun.

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

Reports Received from June 25 to July 22, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Siam	Apr. 1–May 21			Cases, 8; deaths, 7.
Bangkok	May 8–14	1	1	
Tunisia	Reported May 20	15		In districts of Sfax and Susa.
Turkey:				
Constantinople	May 13–19	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1–14	2	2	Native.

SMALLPOX

Algeria	Apr. 21–May 10	168		
Algiers	May 11–20	4		
Oran	May 21–June 20	31		
Brazil:				
Rio de Janeiro	May 22–June 11	3	3	
British East Africa:				
Kenya	Apr. 24–May 14	7	14	
Tanganyika	Mar. 29–May 7		22	
British South Africa:				
Northern Rhodesia	Apr. 30–May 6	1		Native.
Canada	June 5–25			Cases, 100.
Alberta	June 12–25	24		
Calgary	June 12–25	5		
British Columbia—				
Vancouver	May 23–29	2		
Manitoba	June 5–25			Cases, 7.
Winnipeg	June 12–July 7	9		
Ontario	June 5–25			Cases, 54.
Ottawa	June 12–July 9	28		
Toronto	June 19–25	4		
Quebec	June 19–25	1		
Saskatchewan	June 12–25	15		
Ceylon	May 1–7			Cases, 3; deaths, 1.
China:				
Amoy	May 8–28	1		
Chefoo	May 8–14			Present.
Foochow	do			Do.
Hong Kong	May 8–June 4	11	11	
Manchuria—				
Anshan	May 22–28	1		
Changchun	May 15–28	2		
Dairen	May 2–8	3	3	
Fushun	May 15–June 4	8		
Mukden	May 22–28	2		
Ssupingkai	May 8–14	1		
Tientsin	May 8–28	11		
Chosen	Feb. 1–Apr. 30	354	84	
Chinnampo	Apr. 1–May 31	2		
Fusan	Apr. 1–30	1		
Gensan	May 1–31	1		
Seishin	Apr. 1–30	1		
Curaçao	May 29–June 4	1		Alastrim.
Egypt	May 7–27			Cases, 12; deaths, 2.
Alexandria	May 21–27	3	1	
France	Apr. 1–30			Cases, 66.
Paris	June 1–10	4		
Gold Coast	Mar. 1–30	18	4	
Great Britain:				
England and Wales	May 22–June 18			Cases, 982.
Bradford	May 29–June 11	2		
Cardiff	June 19–25	2		
Liverpool	do	1		
London	May 15–June 18	2		
Newcastle on Tyne	June 12–18	1		
Sheffield	June 12–25	12		
Scotland—				
Dundee	May 29–June 25	4		
India				Apr. 17–May 14, 1927: Cases, 32,626; deaths, 7,741.
Bombay	May 8–28	156	97	
Calcutta	May 8–June 4	194	147	
Karachi	May 15–June 4	7	5	
Madras	May 22–June 11	6	2	
Rangoon	May 8–June 4	80	22	

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

Reports Received from June 25 to July 22, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
India, French Settlements in	Mar. 20–Apr. 30	96	59	
Indo-China (French)	Mar. 21–Apr. 10	190		
Saigon	May 14–20	1	1	
Iraq:				
Baghdad	Apr. 10–16	2		
Basra	do	1		
Italy	Apr. 10–May 7	5		
Jamaica	May 29–June 25	9		Reported as alastrim.
Japan	Apr. 3–May 7	19		
Nagasaki City	Reported July 9	20		
Java:				
Batavia	May 22–28	1		
East Java and Madura	Apr. 24–30	1		
Latvia	Apr. 1–30	1		
Mexico:				
Durango	June 1–30		1	
San Luis Potosi	May 29–July 2		6	
Tampico	June 1–10	1	1	
Morocco	Apr. 1–30	55		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities.
Persia:				
Teheran	Feb. 21–Apr. 20		5	
Poland	Apr. 10–23	3		
Portugal:				
Lisbon	May 29–June 25	10		
Siam	May 1–28			Cases, 10; deaths, 7
Bangkok	May 15–28	4	2	
Spain:				
Valencia	May 29–June 4	2		
Straits Settlements:				
Singapore	Apr. 1–May 21	3	1	
Tunisia	Apr. 1–May 14	5		
Tunis	June 1–10	1		
Union of South Africa:				
Transvaal—				
Barberton District	May 1–7			Outbreaks.

TYPHUS FEVER

Algeria	Apr. 21–May 10	109	16	
Algiers	May 11–June 10	21		
Oran	May 21–June 20	14		
Bulgaria	Mar. 1–31	58	6	
Sofia	June 4–10	1		
Chile:				
Concepcion	May 29–June 4		1	
Ligua	Mar. 16–31	2		
China:				
Manchuria—				
Mukden	May 29–June 4	1		
Chosen	Feb. 1–Apr. 30			Cases, 330; deaths, 30.
Chemulpo	May 1–31	4		
Gensan	do	1		
Seoul	Apr. 1–May 31	9		
Czechoslovakia				Apr. 1–30, 1927: Cases, 21.
Egypt:				
Alexandria	May 21–June 3	3	1	
Estonia	Apr. 1–30			Case, 1.
Iraq:				
Baghdad	Apr. 24–30	1		
Latvia	Apr. 1–30	12		
Mexico	Feb. 1–28			Deaths, 26.
Mexico City	May 29–June 11	7		Including municipalities in Federal District.
Morocco	Apr. 1–May 7	249		
Palestine	May 24–June 6			Cases, 3.
Haifa	do	2		
Mahnaim	May 17–23	1		In Safad District.
Safad	May 17–June 13	1		
Peru:				
Arequipa	Apr. 1–30		1	
Poland	Apr. 10–30	398	33	

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

Reports Received from June 25 to July 22, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Portugal:				
Lisbon	May 29-June 4	1		
Rumania	Apr. 3-May 7	583	41	
Tunisia	Apr. 21-May 10	78		
Turkey:				
Constantinople	May 13-19		2	
Union of South Africa	Apr. 1-30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1-May 18	42	5	
East London	May 22-28	1		
Glen Grey District	May 1-7			Outbreaks.
Qumbu District	do			Do.
Natal	Apr. 1-May 21	7	3	
Orange Free State	Apr. 1-May 28	5		
Transvaal	Apr. 1-30	1		
Yugoslavia	May 1-31			Cases, 4.

YELLOW FEVER

Liberia:				
Monrovia	May 29-July 8	1	5	
Senegal	May 27			Cases, 3.
M'Bour	May 27-June 19	3	3	
Ouakam	June 2-8	1	1	
Tivaouane	May 27-June 8	5	5	