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A STUDY OF RURAL SCHOOL VENTILATION

THE SCHOOL VENTILATION STUDY IN CATTARAUGUS COUNTY, N. Y., 1926–27

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I. Introduction

The school ventilation study in Cattaraugus County, N. Y., is one of the three field studies undertaken by the New York Commission on Ventilation following its reorganization in 1926. In this study, as in that conducted in Syracuse, which has been reported elsewhere (1) (2) (3), the commission has been fortunate in collaborating with an enlightened public-health organization engaged in a "health demonstration." Both of these "demonstrations," testing the thesis of the late Dr. Hermann Biggs that public health is purchaseable, have received financial assistance from the Milbank Memorial Fund. This fund is also supporting the current investigations of the commission, as it supported those of its predecessor, the New York State Commission on Ventilation.

To the trustees of the Milbank Memorial Fund, to the officials of the Cattaraugus County Health Demonstration, to the superintendents of the rural school supervisory districts, and to the trustees of the various school districts, the commission expresses its appreciation for the opportunity of conducting this study.

II. Object of the Study

The primary object of the study was to determine just what were the air conditions in one and two room rural schools, with the secondary purpose of learning, if possible, how these air conditions affected the health of the pupils. Although the State department of education reports that it is unable to supply information concerning the number of one and two room rural schools and the number of pupils attending such schools either in Cattaraugus County or in the State as a whole, there is evidence that suggests that there are still more than 8,000 schools of this type in the State, with an average registration of more than 150,000 pupils. The Federal Bureau of Education reports that in the entire country there are some 3,500,000 pupils attending schools of the type here considered.

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III. Cattaraugus County

Cattaraugus County is located in the western part of New York State. To the west is Chautauqua County, the most westerly in the State; to the north is Erie County, the largest city in which is Buffalo. The southern border of Cattaraugus County forms a part of the boundary line between the States of New York and Pennsylvania.

The county is almost perfectly rectangular in shape, the northern boundary being the only irregular one. It is approximately 38 miles wide, while the north and south dimension varies from 30 to 35 miles. It contains approximately 1,200 square miles.

The total population of the county is approximately 75,000 persons, of whom 32,000 live in the cities of Olean (22,000) and Salamanca (10,000). The remaining 43,000 are distributed rather generally over the county in 33 townships and 13 incorporated villages. The largest village has about 2,000 inhabitants. The average density of the population outside the cities and villages is 35 per square mile.

If the schools in the two cities are omitted, there are 247 grade schools and 22 high schools in the county. Of the grade schools, 234 have but one room and 13 have two rooms; 22 were reported to have an average attendance of less than 5 pupils, while 73 had from 6 to 10 pupils.

IV. The School Buildings Included in the Study

As the object of the study was to obtain information regarding air conditions in rural schoolrooms, 48 rooms in 41 different buildings in the rural school supervisory districts 1 and 2, comprising roughly the eastern third of the county, were selected for study. The distribution of these classrooms according to the size of the building is brought out in Table 1.

TABLE 1.—*Number of classrooms and buildings included in the study*

Size of building	Number of buildings	Total number of rooms
1 room	32	32
2 rooms	7	14
Rooms in buildings of 2 or more rooms	2	2
Total	41	48

With the exception of one 2-room brick school (Portville 6), all the rooms included in the present study were in buildings of frame construction on stone or concrete foundations, with the traditional vent openings to permit free circulation of the air underneath the building. Only five of the schools had excavated cellars or basements. Only two of the buildings (Yorkshire 4 and Freedom 1) were more than one story high.

Originally the floors may have consisted of but a single thickness of tongue-and-groove flooring laid on 2 by 10 joists or hewn logs; but new floors have commonly been laid directly over the old ones and it is probable that most of the rooms now have a double thickness of flooring.

The walls, which, with the exception of the nine schools of two or more rooms, all have outside exposure, have been made of 2 by 4 inch studs, with weatherboarding over rough sheathing to the outside. Building paper has been used between the sheathing and the weatherboards in some instances, but the sheathing is usually not matched nor laid very close.

Plaster over wood lath provided the inside finish of the walls in 15 rooms; paneled wall board was used in three, while tongue-and-groove sealing laid directly over the studding formed the wall in the remaining 30 rooms. One room had windows on all four sides; 21 had windows on three sides; 22 on two sides; and 4 on one side only.

The room ceilings are all flat. In 27 rooms they consist of a single layer of the tongue-and-groove ceiling, nailed directly on the ceiling beams, which are laid straight across from the sill at the eaves. Twelve ceilings are plastered, four are of metal, and five are of wall board. Between the ceiling beams and the peaked roof there is an open attic space. The roofing generally consists of wood or composition shingles over loosely laid rough sheathing with or without building paper between.

The drying out of the inner sealing through the years has resulted in the development of cracks of various widths which, during the wintertime, allow the infiltration of cold air from outside and the escape of much warm air through the ceilings and the upper parts of the side walls.

The classrooms are grouped by method of heating in Table 2.

TABLE 2.—*Method of heating the classrooms*

Type of heating unit	Number of rooms
Ordinary stove in room	32
Jacketed stove in room	7
Furnace in basement	9
Total	48

Wood was the fuel generally used for heating in 27 rooms, coal in 15, and natural gas in 5.

When ventilation of the rooms was considered necessary, it has usually been accomplished by opening windows or doors. In the schools heated by furnaces, provision has been made to admit outside

air for mixture with the heated air from the furnaces. The mixing dampers are controlled from the classrooms. Return ducts, leading to the fresh-air inlets of the furnaces, withdraw the air from these classrooms at the floor level for recirculation.

Details of registration, building construction, method of heating, and other data for each school are given in Tables 1 and 2 of the Appendix.

V. Methods of Study

The purpose of the study, it will be recalled, was first to obtain information regarding air conditions in one and two room rural schools, and, secondly, to determine what relation, if any, these air conditions bore to the incidence of respiratory illness among the pupils.

The fundamental observation in attempting to judge air conditions was that of temperature. Readings were taken eight times daily at a point selected as representative of the average conditions in the room. These records, which were kept by the teacher (see Form 1 in Appendix) were supplemented by data collected by the commission's observers on regular trips to 45 of the 48 classrooms every 10 days or two weeks. The data include—

1. Temperature distribution:
   a. Horizontal.
   b. Vertical.
2. Relative humidity.

To satisfy the second question, a record was kept of the attendance and health records of the pupils. (See Form 2.) On this form the teacher was requested to record the occurrence of respiratory illnesses (colds or sore throats) among the pupils, both present and absent, in addition to giving an abstract of the attendance register. For the absentees, the cause of absence as stated in the excuses sent by the parents was accepted, while the teacher was asked to use her own judgment in recording colds and sore throats among the pupils present.

VI. Results

(A) AIR CONDITIONS

The data on air conditions collected in the course of this study in 48 classrooms of one and two room rural schools are presented in Tables 3 and 4 of the appendix to this report.

The records kept by the teachers permit the following classification of the schoolrooms according to their average temperatures and methods of heating:

TABLE 3.—*Classrooms grouped according to average temperatures (teachers' records) and methods of heating*

Average temperatures (degrees F.)	Number of rooms, by method of heating				Percentage of rooms, by method of heating			
	Furnace	Jacketed stove	Ordinary stove	Total	Furnace	Jacketed stove	Ordinary stove	Total
73 and above	2	2	4	8	22	29	12	17
70–72.9	5	3	6	14	56	42	19	29
67–69.9	2	2	13	17	22	29	41	35
Below 67			9	9			28	19
Total	9	7	32	48	100	100	100	100

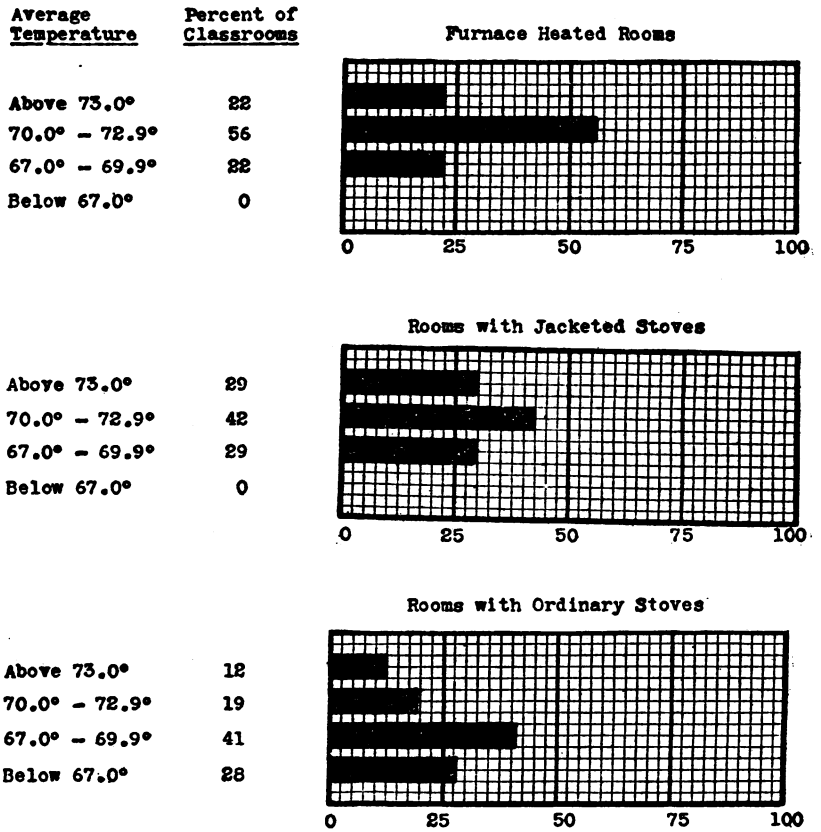


CHART 1.—Average temperature of classrooms (teachers' records) for each method of heating employed

It will be seen that 78 per cent of the furnace-heated rooms and 70 per cent of the rooms with jacketed stoves had average temperatures above 70° F., and none of them showed average temperatures below 67°; whereas but 31 per cent of the stove-heated rooms may be classed in the former category, and 28 per cent of them averaged less than 67°.

The thermometers on which these observations were made were of a good grade, accurate to within 1°. They were not of the usual type, but were supported in brackets which held them about 2 inches away from the wall. From the description of the construction of these schools, it will be seen that it was only rarely that the thermometers could be attached to other than outside walls. The room thermometers were located only after consideration had been given to the selection of a place that would give a reading representative of average conditions in the room.

The value of temperature readings made at a single point in the classroom of the type under consideration is questionable. Where the heating is accomplished by a simple unjacketed stove in the room, the pupils in desks near the stove are frequently exposed to extremely high temperatures, while those at a distance are not sufficiently warmed.

One series of data collected by the commission's observers was the temperature on the tops of the desks at the corners and at the center of the seating section. The averages of these readings, together with the average temperature as shown by the room thermometer at the time of the observers' visits, are shown in Table 4 in the appendix. Stations 1, 2, 3, and 4 were located at the corner desks of the room, and station 5 was the desk in the center of the seating section. The floor temperature was taken at station 5, and in 16 schools ceiling temperatures were taken at representative points during the latter weeks of the study.

Average readings at corner desk-top stations in certain classrooms were consistently 8°, 10°, and 12° below those of the room thermometers. These variations were due to the location of the heating unit.

At the center of the seating section, average readings were usually above those of the room thermometers. The average observed excess of temperature at this station in all rooms was 4.2°. Single readings at this station, which was frequently near the stove, have often been found to exceed 100° F.—one instance of 104° having been noted.

Of course, the difference in the height of the room thermometer and the desk tops would account for a difference of a degree or two in the temperature at these two levels; but *temperatures taken simultaneously on the tops of occupied desks in a single room have been found to vary by as much as 35°, 42°, 43°, and 46°.*

As shown in Table 4, the furnace-heated rooms have a far more uniform lateral distribution of temperature than have the rooms heated by stoves. In none of the furnace-heated rooms did the average desk-top temperatures differ by as much as 5°, whereas less than half the rooms with jacketed stoves and only 4 per cent of the rooms with unjacketed stoves show such uniformity.

TABLE 4.—*Average lateral temperature differences (difference between average desk-top temperatures) according to type of heating*

Average lateral temperature difference (degrees F.)	Number of rooms, according to method of heating				Percentage of rooms, according to method of heating			
	Furnace	Jacketed stove	Ordinary stove	Total	Furnace	Jacketed stove	Ordinary stove	Total
0-4.9	9	2	1	12	100	40	4	31
5-9.9	-------	1	14	15	-------	20	56	39
10-14.9	-------	1	5	6	-------	20	20	15
15-19.9	-------	1	3	4	-------	20	12	10
Above 20	-------	-------	2	2	-------	-------	8	5
Total	9	5	25	39	100	100	100	100

Of the rooms heated by stoves, 40 per cent showed average lateral temperature differences greater than 10°. This was true of rooms with jacketed or unjacketed stoves, and indicates that unless the jackets are properly constructed little will be accomplished either in keeping the air in circulation or in eliminating overheating by radiation by providing jackets for stoves. *In two classrooms with ordinary stoves the difference between the lowest and highest desk-top temperatures at the time of the observers' visits averaged greater than 20°.*

The average difference between the highest and lowest desk-top temperatures at the time of the observers' visits summarized according to method of heating are shown in Chart 2.

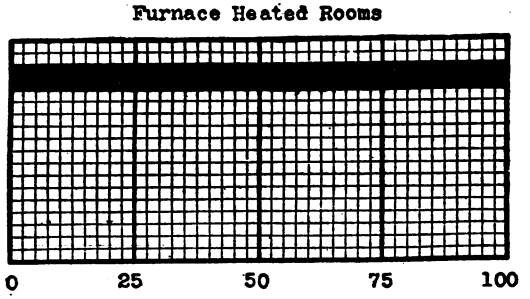
It will be apparent from this that the thermometer readings recorded by the teachers, while giving perhaps a fair picture of the temperature fluctuations in the classrooms, can be considered simply as a rough index of the average temperature of the room as a whole.

This suggestion is further supported by examination of vertical temperature differences. The average floor temperature in the different rooms as recorded by the observers varied from 51° to 71° F., with the greater number between 55° and 65°.

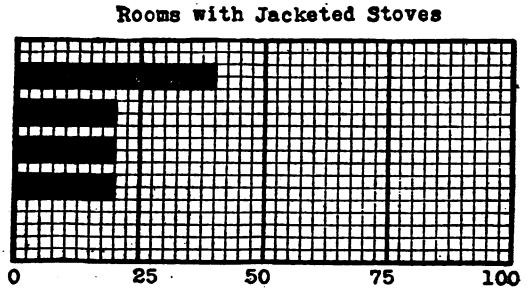
In the matter of floor temperatures the rooms heated by furnaces and jacketed stoves are clearly superior to those heated by stoves without jackets. None of the nine furnace-heated rooms showed an average floor temperature below 60°, whereas 43 per cent of the rooms with jacketed stoves and 62 per cent of the rooms with ordinary stoves fall in this group. Three of the furnace-heated rooms (33 per cent) and one room with a jacketed stove (14 per cent) showed average floor temperatures above 65°, while none of the rooms with ordinary stoves was in this group. Only one room (Yorkshire 4—upstairs) showed an average floor temperature above 70°. This school is furnace heated and the floor of this room was quite warm as a result of leakage from the room below.

The average floor temperatures of the classrooms at the time of the observers' visits, summarized according to method of heating, are given in Table 5 and shown in Chart 3.

Temperature Difference	Percent of Classrooms
0.0° - 4.9°	100
5.0° - 9.9°	0
10.0° - 14.9°	0
15.0° - 19.9°	0
Above 20°	0



0.0° - 4.9°	40
5.0° - 9.9°	20
10.0° - 14.9°	20
15.0° - 19.9°	20
Above 20°	0



0.0° - 4.9°	4
5.0° - 9.9°	56
10.0° - 14.9°	20
15.0° - 19.9°	12
Above 20°	8

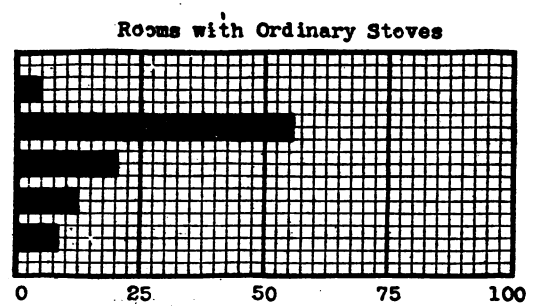


CHART 2.—Average difference between the highest and lowest desk-top temperatures according to method of heating employed at the time of the observers' visits

TABLE 5.—*Classrooms grouped according to average floor temperature and method of heating*

Average floor temperatures (degrees F.)	Number of rooms, according to method of heating				Percentage of rooms, according to method of heating			
	Furnace	Jacketed stove	Ordinary stove	Total	Furnace	Jacketed stove	Ordinary stove	Total
65 and above	3	1	-------	4	33	14	-------	9
60-64.9	6	3	11	20	67	43	38	44
55-59.9	-------	2	12	14	-------	29	41	31
50-54.9	-------	1	6	7	-------	14	21	16
Total	9	7	29	45	100	100	100	100

There were numerous individual instances of floor temperatures below 45° F., but the lowest floor temperature observed was 31° F. (Hinsdale 4). This condition prevailed between 10.30 and 11 o'clock on the morning of a clear day when the outdoor temperature was 4° above zero and the room temperature as shown on the room thermometer was 46°.

Ceiling temperatures were observed in 16 rooms; 7 of these rooms were heated by furnaces, 2 by jacketed stoves, and 7 by ordinary un-

Floor Temperature	Percent of Classrooms
Furnace Heated Rooms	
Above 65°	33
60.0° - 64.9°	67
55.0° - 59.9°	0
50.0° - 54.9°	0
Rooms with Jacketed Stoves	
Above 65°	14
60.0° - 64.9°	43
55.0° - 59.9°	29
50.0° - 54.9°	14
Rooms with Ordinary Stoves	
Above 65°	0
60.0° - 64.9°	38
55.0° - 59.9°	41
50.0° - 54.9°	21

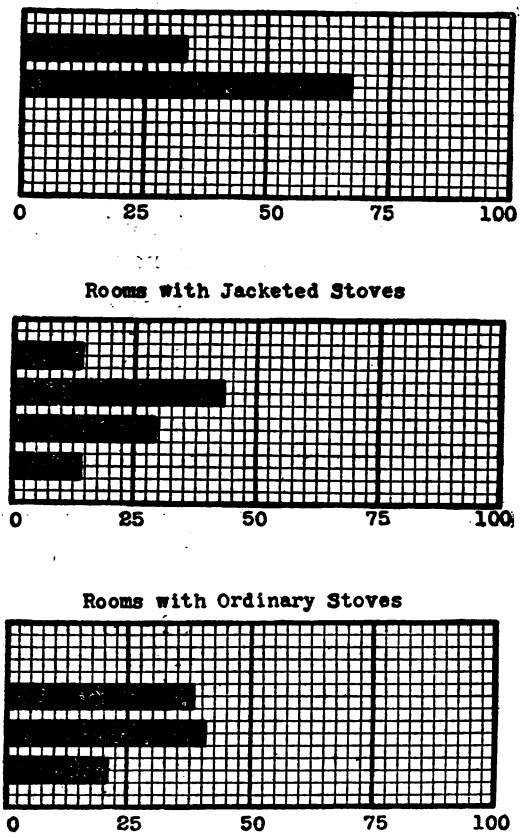


CHART 3.—Average floor temperatures of classrooms according to method of heating employed at time of observers' visits

jacketed stoves. The averages of the observed readings varied from 78.2° to 102.5°. Eleven schools showed one or more readings above 100°. Extremes of 118° and 116° were noted in two furnace-heated classrooms (Freedom 1 and Franklinville 3), while in another (Hinsdale 10) the highest ceiling temperatures noted were 86° and 82°. The two rooms with jacketed stoves showed maximum ceiling temperatures of 110° and 100°, respectively. Three classrooms heated by ordinary stoves showed extreme ceiling temperatures of 107°, 105°, and 104°.

Two of the 16 rooms had average ceiling temperatures below 80°; 5 from 80° to 90°, 7 from 90° to 100°, and 2 above 100°. The difference between the *average* ceiling and floor temperatures, as collected by the commission's observers, varied from 12° to 34°. In the two rooms of one furnace-heated school (Hinsdale 10) this average difference was 18° and 13°; in another 2-room school with furnace heat (Franklinville 3) it was 31° and 35°. The greatest difference between the floor and ceiling temperatures observed at a single visit was 55°.

In the two rooms with jacketed stoves for which we have readings the differences between ceiling and floor temperatures were 30.8° and 36.7°, respectively. In the rooms heated with ordinary stoves the average difference between ceiling and floor temperatures ranged from 20° to 43°.

These high ceiling temperatures and the low temperatures at the floor level show how poorly the heat is usually distributed when no provision is made to keep the air in circulation.

The average relative humidity in the different classrooms varied from 24 to 49 per cent. With no provision for the artificial introduction of moisture in the atmosphere, the relative humidity in the classrooms depends upon the outdoor humidity and the temperature difference between outdoors and indoors at the moment of observation. Continuous records would probably have shown that the rooms with the highest temperatures had the lowest relative humidities and the converse. The period between the observers' visits having been from 10 days to 2 weeks, this condition was not strictly confirmed, although it was true that the school (Hinsdale 4) with the lowest average temperature (61.7°) had the highest average relative humidity (49 per cent).

In the classroom (Portville 6—northwest room) that had the lowest average relative humidity (24 per cent), individual readings as low as 16 and 18 per cent were obtained. In each of the two schools with the highest average temperatures (Allegany 9 and Portville 4) relative humidities of 17 per cent were observed on one occasion. All other determinations in these schools showed relative humidities above 20 per cent. In the coldest school (Hinsdale 4), however, six determinations with the sling psychrometer showed relative humidities between 47 and 54 per cent.

(B) ATTENDANCE AND HEALTH RECORDS

The second part of the study was concerned with the incidence of respiratory illness among the pupils and the relationship between this type of illness and schoolroom air conditions. The summarized records of the individual classrooms are presented in Table 5 in the appendix.

During the period covered there were 860 pupils registered in the schoolrooms included in the study. The average duration of the record keeping in the schools was 10 weeks. Table 6 summarizes the attendance and health records of the 860 pupils for the period.

TABLE 6.—*Summarized attendance and health records*

Attendance and health records	Number of pupil sessions [1]	Per cent of total pupil sessions
Total pupil sessions	94,514	100.0
Pupil sessions attended, total	81,178	85.9
With respiratory illness	17,303	18.3
Total absences	13,336	14.1
Absences due to respiratory illness	4,407	4.7
Respiratory illness among pupils present and absent	21,710	23.0

[1] The pupil session has been taken as the unit for expressing both the attendance (and absenteeism) and the duration of respiratory illness among the pupils present and absent.

In the schools included in this report the school day was divided into a morning and an afternoon session. The attendance (or absence) of a pupil for an entire day when the school was regularly in session was counted as 2 pupil sessions of attendance (or absenteeism). The absence of 10 pupils from a single session and of 1 pupil from 10 sessions was in both cases counted as 10 pupil sessions of absence.

The sum of the number of pupils on the active roll for each regular session (that is, the total pupil sessions) has been taken as the basis for the calculations of the rates of attendance, absenteeism, and duration of respiratory illness.

Table 7 presents the attendance and health records for each school as rates per 100 pupil sessions.

TABLE 7.—*Rates from the summarized attendance and health records [1] for each classroom, arranged in the order of average room temperatures*

School or classroom designation	Average number of pupils registered	Pupil-sessions attended		Absences	
		Total	With respiratory illness	Total	Due to respiratory illness
Allegany 9	15	88.1	19.5	11.9	1.8
Portville 4	25	80.4	51.6	19.6	5.1
Yorkshire 4, down	37	80.6	22.8	19.4	9.6
Yorkshire 2	14	92.3	.9	7.7	1.5
Portville 8	16	89.2	20.1	10.8	3.1
Humphrey 3	13	62.2	16.1	37.8	8.9
Franklinville 3, south room	20	88.1	14.8	11.9	2.3
Freedom 4	8	85.8	21.5	14.2	5.6
Freedom 2, north room	14	88.4	24.2	11.6	6.4
Hinsdale 10, west room	13	93.2	5.6	6.8	2.1
Freedom 5	17	85.8	8.7	14.2	3.0
Hinsdale 10, east room	19	88.7	6.0	11.3	6.1
Olean 2	24	89.9	4.2	10.1	2.6
Portville 6, northwest room	24	81.2	30.2	18.8	8.9
Hinsdale 7	19	76.9	9.7	23.1	3.3
Freedom 2, south room	17	86.5	49.7	13.5	6.8
Portville 6, southeast room	20	92.2	31.6	7.8	4.4
Portville 1	28	81.3	16.4	18.7	9.7
Portville 9	15	78.5	26.3	21.5	5.6
Franklinville 6	15	91.1	2.9	8.9	2.7
Allegany 11-A, south room	29	94.0	15.7	6.0	1.8
Carrollton 6	11	81.3	25.4	18.7	9.2
Ischua 1, west room	17	90.0	27.3	9.1	1.4
Portville 7	29	81.7	4.1	18.3	8.3
Yorkshire 4, upstairs	24	87.2	1.2	12.8	2.2
Franklinville 3, north room	11	89.2	24.1	10.8	3.6
Farmersville 7	17	87.3	8.2	12.7	7.4
Lyndon 3	9	85.3	20.1	15.0	3.9
Freedom 1, east room	19	89.8	4.5	10.2	3.1

[1] Per cent of total pupil sessions.

TABLE 7.—*Rates from the summarized attendance and health records for each classroom, arranged in the order of average room temperatures*—Continued

School or classroom designation	Average number of pupils registered	Pupil-sessions attended		Absences	
		Total	With respiratory illness	Total	Due to respiratory illness
Yorkshire 3	22	93.0	.3	7.0	3.3
Allegany 10	12	83.6	6.6	16.4	4.3
Lyndon 7	15	86.9	4.2	13.1	5.5
Portville 3	16	83.7	34.0	16.3	6.5
Allegany 7	10	86.8	19.6	13.2	1.9
Ischua 8	9	71.9	49.2	28.1	1.8
Allegany 11-B, south room	17	89.9	6.8	10.1	1.2
Allegany 5	18	80.7	21.6	19.3	7.2
Allegany 11-B, north room	19	88.3	7.4	11.7	1.6
Franklinville 2	9	81.0	3.3	19.0	3.2
Allegany 6	23	83.6	50.0	16.4	5.5
Franklinville 9	22	84.8	17.1	15.2	6.3
Ischua 1, east room	29	88.8	34.5	11.2	2.4
Yorkshire 5	10	83.6	.4	16.4	7.5
Allegany 4	22	87.6	14.7	12.4	2.7
Humphrey 5	20	86.9	31.3	13.1	2.3
Hinsdale 6	14	77.2	3.1	22.8	5.8
Machias 3	14	87.7	7.1	12.3	1.4
Hinsdale 4	20	90.7	19.5	9.3	4.7
All rooms	860	85.9	18.3	14.1	4.7

Total absenteeism ranged from 6 to 37.8 per cent of the total pupil sessions, with a mean of 14.1 per cent and a median of 13.3 per cent. Because of excessively high instances in two schools, the entire range of the rates of total absenteeism does not present an adequate idea of the distribution. For this reason the upper and lower quartile values have been calculated, thus giving the limiting values for middle half of the rates. The former was 17.5 per cent, while the latter was 10.7 per cent, giving an interquartile range of 6.8 per cent.

Absenteeism due to respiratory illness was reported as varying from 1.2 to 9.7 per cent of the total pupil sessions, with a mean of 4.7 per cent and a median of 3.8 per cent. The upper and lower quartile values were 6.4 and 2.3 per cent, a difference of 4.1 per cent.

Respiratory illness among the pupils present (a determination made by the teachers) ranged from 0.3 to 51.6 per cent of all pupil sessions, with a mean of 18.3 per cent and a median of 16.5 per cent. Because of the differences of opinion of the teachers as to what constituted respiratory illness among the pupils present, certain extreme rates were reported which give a wide distribution. To present a more nearly accurate picture, the quartiles have been calculated. The upper quartile value was 25.5 per cent while the lower was 6 per cent, giving an interquartile range of 19.5 per cent.

The schools with only one room show somewhat higher rates of total absenteeism than do the schools with two rooms or more. The difference between the rates is 3.4 per cent. This may be due to the fact that the density of the population is greater in the districts supporting

the larger schools. The average travel distance per pupil will probably be less and the traveling conditions probably better in such districts.

TABLE 8.—*Rates from the summarized attendance and health records in the one and two room rural schools*

Attendance and health records	1-room schools	2-room schools
Total pupil sessions	57,092	37,422
Pupil sessions attended, total [1]	84.4	88.2
With respiratory illness [1]	18.0	18.8
Total absences [1]	15.6	11.8
Absences due to respiratory illness [1]	4.9	4.3
Respiratory illness among pupils present and absent [1]	22.9	23.1

[1] Per cent of total pupil sessions.

The lower rate of respiratory-illness absenteeism reported from the larger schools may likewise be due to the fact that they are located in the more populous districts, but it is probably due to chance variation due to the small numbers involved. When the total respiratory illness is considered, there appears to be little to choose between the large and smaller buildings, the total rates being 23.1 and 22.9 per cent, respectively.

The relationships between the average room temperatures and the rates of total and respiratory-illness absenteeism, respiratory illness among the pupils present, and total respiratory illness are shown in Tables 9 and 10, which divide the classrooms into three groups—(1) one-room schools, (2) primary grades in the larger schools, and (3) the intermediate grades in the larger schools.

TABLE 9.—*Total absenteeism and absenteeism due to respiratory illness in one and two room schools* [1]

Average room temperature (degrees F.) [2]	Total absenteeism			Absenteeism due to respiratory illness		
	1-room schools [3]	Primary grades in larger schools [3]	Intermediate grades in larger schools [3]	1-room schools	Primary grades in larger schools	Intermediate grades in larger schools
Above 73	17.0	16.9	----	4.2	7.1	----
70–72.9	15.8	14.7	8.9	5.4	6.5	4.3
67–69.9	15.8	10.9	11.0	5.5	2.4	2.0
66.9 and below	14.4	11.2	----	4.3	2.4	----

[1] Per cent of total pupil sessions. [2] Based on records kept by teachers.
[3] The number of rooms in each of these categories was—

Average room temperature (degrees F.)	1-room schools	Primary grades in larger schools	Intermediate grades in larger schools
Above 73	6	2	----
70–72.9	7	4	3
67–69.9	11	2	4
66.9 and below	8	1	----

Because of the differences of age of the pupils in the different rooms of the larger schools, the density of population of the districts in which the various schools are located, and other conditions, an unreliable and misleading result would be obtained if a study of the relationship between classroom temperatures and respiratory illness were attempted without regard for these factors.

TABLE 10.—*Respiratory illness among the pupils present and total incidence of respiratory illness [1] in 1 and 2 room rural schools*

Average room temperature (degrees F.) [2]	Respiratory illness among pupils present			Total respiratory illness		
	1-room schools	Primary grades in larger schools	Intermediate grades in larger schools	1-room schools	Primary grades in larger schools	Intermediate grades in larger schools
Above 73	26.4	20.1	----	30.6	27.2	----
70–72.9	12.0	19.7	28.3	17.4	26.2	32.6
67–69.9	14.9	5.9	11.8	20.4	8.3	13.8
66.9 and below	22.1	34.6	----	26.4	37.0	----

[1] Per cent of total pupil sessions.
[2] Based on records kept by teachers.
See also footnote 2 to Table 9.

When these precautions are taken, the resulting rates are based on such small numbers of schools and pupil sessions that the apparent differences must be considered purely as tentative, subject to confirmation or rejection by subsequent results.

In view of the fact that the room and floor temperatures varied with the method of heating, it was thought worth while to analyze the attendance and health records of the classroom according to the type of heating unit, without further subdivision by grade and average room temperatures.

The results of this analysis are presented in Table 11 and in Chart 4.

TABLE 11.—*Attendance and health records according to method of heating*

Attendance and health records	Method of heating [1]			All rooms
	Furnace	Jacketed stoves	Unjacketed stoves	
Total pupil sessions	22,859	13,795	57,860	94,514
Pupil sessions attended, total [2]	87.1	85.2	85.6	85.9
With respiratory illness [2]	16.1	26.1	17.3	18.3
Total absences [2]	12.9	14.8	14.4	14.1
Absences due to respiratory illness [2]	5.2	4.8	4.3	4.7
Respiratory illness among pupils present and absent [2]	21.3	30.9	21.6	23.0

[1] The number of rooms heated by the various methods were: Furnace, 9; jacketed stoves, 7; unjacketed stoves, 32.
[2] Per cent of total pupil sessions.

Here again the apparent differences in rates, based as they are in the cases of rooms heated by furnaces and jacketed stoves on 9 and 7 instances, respectively, must await the confirmation of further study before being accepted as significant.

As was pointed out when considering the records of the 1-room schools versus the 2-room schools, the better attendance record in furnace-heated schools is probably due to the fact that all furnace-heated rooms were in schools of two or more rooms, and the large

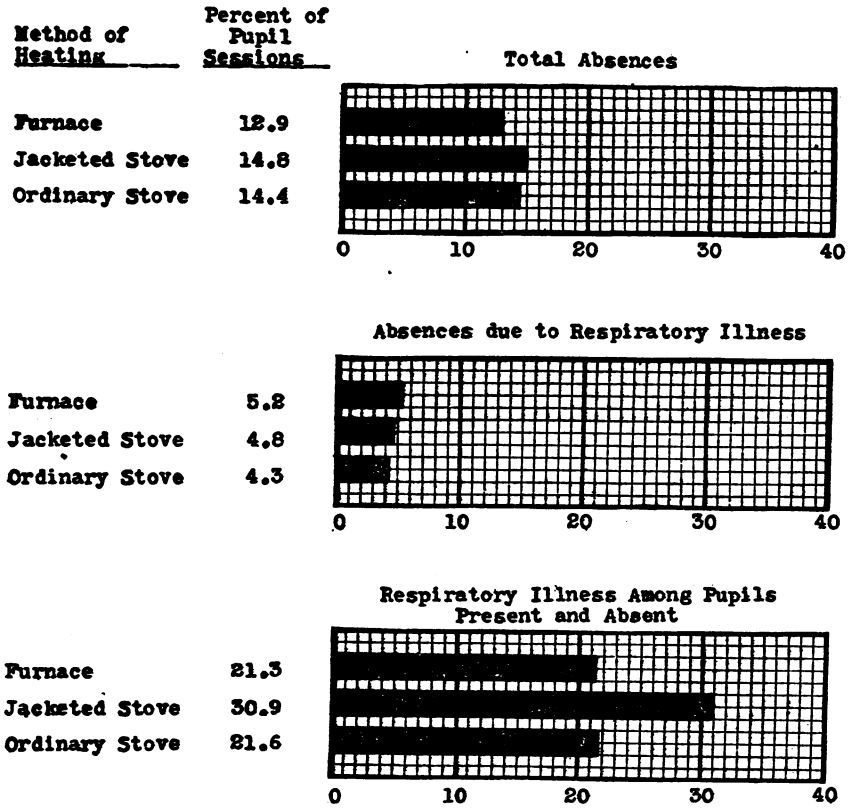


CHART 4.—Attendance and health records according to method of heating employed (per cent of total pupil sessions,

schools have been built only in the more thickly populated districts where the average distances the pupils have to travel to school are probably less and the travel conditions probably better than in the districts with 1-room schools.

It so happens that two of the seven rooms with jacketed stoves had the highest average temperatures of all the rooms included in the study. This may account in part for the high incidence of respiratory illness reported among the pupils present in these schools. The inclination of one or two teachers to diagnose such illnesses more freely than the average might also be the explanation of this finding.

Table 12 presents a comparison of the data as to absences and respiratory illness in Cattaraugus County, New York City, and Syracuse. It appears that total absences are about twice as frequent in the rural county as in either city (as might be expected on the ground of trans-

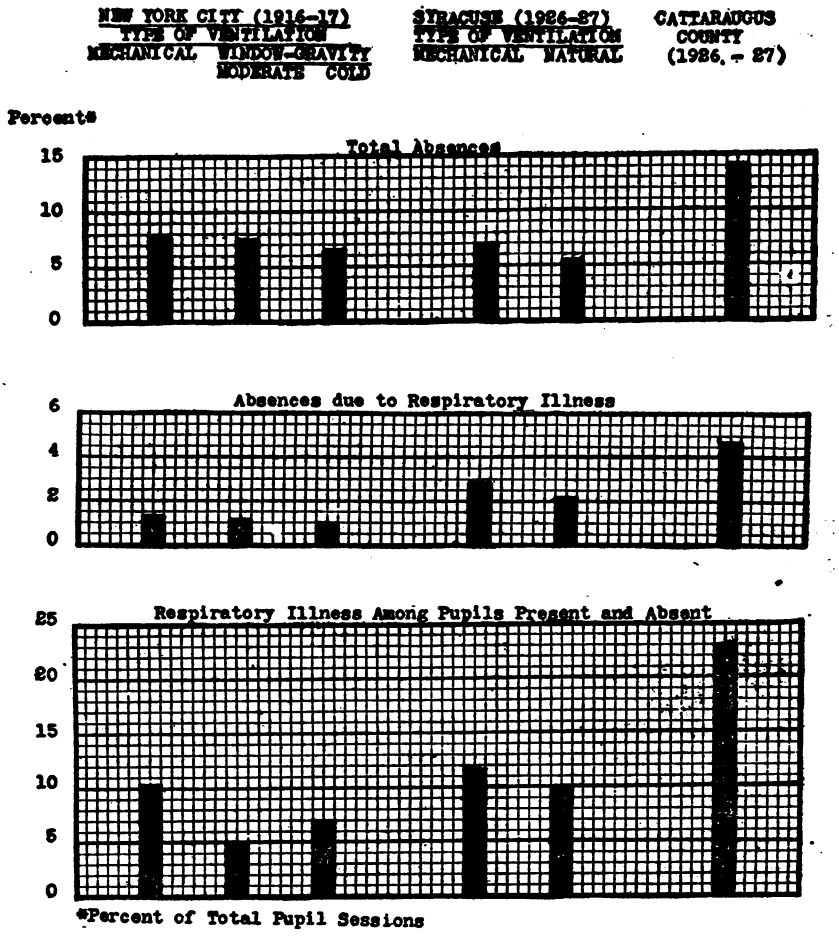


CHART 5.—Comparison of the attendance and health records for the ventilation studies in New York City (both studies, 1916-17), Syracuse (refined results, 1926-7), and Cattaraugus County, N. Y. (1926-27).

portation difficulties), but absenteeism due to respiratory illness and respiratory illness among pupils in attendance show higher rates in both Syracuse and Cattaraugus County than in New York City. These comparisons are also shown in Chart 5.

TABLE 12.—*Comparison of the attendance and health records in ventilation studies in New York City,[1] Syracuse,[2] and Cattaraugus County, N. Y.*

Attendance and health records	New York City (1916-17)			Syracuse (1926-27)		Cattaraugus County (1926-27)
	Mechanical ventilation	Window ventilation		Mechanical ventilation	Natural ventilation	
		Moderate	Cold			
Total pupil sessions	150,725	176,896	150,725	166,245	95,425	94,514
Pupil sessions attended, total	92.3	92.5	93.6	93.0	94.6	85.9
With respiratory illness	9.0	3.5	6.0	8.8	7.8	18.3
Absences	7.7	7.5	6.4	7.0	5.4	14.1
Due to respiratory illness	1.3	1.1	1.0	2.9	2.2	4.7
Respiratory illness among pupils present and absent	10.3	4.6	7.0	11.7	9.9	23.0

[1] Both studies, 1916-17. [2] Refined results.

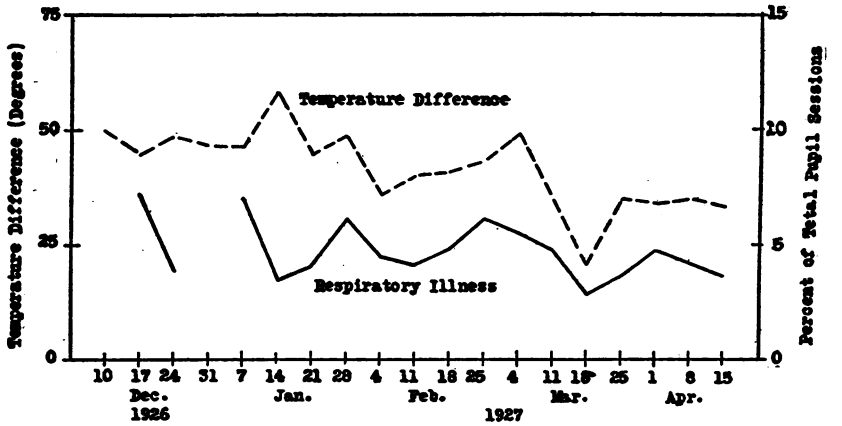


CHART 6.—Weekly variations in absence due to respiratory cause in rural schools, Cattaraugus County, N. Y., compared with 70° F, minus mean weekly outdoor temperature, December 3, 1926–April 15, 1927

The relation of the incidence of respiratory illness as reflected in the absenteeism due to this cause with the outdoor weather conditions has also been studied. The facts are presented in Tables 13, 14, and 15, and are shown graphically in Charts 6 and 7. The basic data from which the rates presented in Table 13 were calculated are given in Table 6 in the appendix.

Examination of Chart 6 reveals a *general* parallelism between (1) the inverted outdoor temperature curve, which (being obtained by subtracting the mean weekly outdoor temperature from 70° F.) also shows the difference between the average indoor and outdoor temperatures, and (2) the curve of respiratory illness absenteeism. Both decline with the coming of spring. There are several instances of correspondence between the changes in the outdoor temperature and the respiratory illness absenteeism, but there are also several contradictory tendencies. For instance, during the coldest week of

the year, that ending January 14, 1927, when the average outdoor temperature was but 12° F., the respiratory illness absenteeism was just half of what it was during the preceding week when the outdoor temperature averaged 26°. Similar drops in respiratory illness absenteeism occur despite lower average temperatures in the weeks ending December 24, 1926, February 11, and March 4, 1927. The correlation coefficient for the relationship between these curves is $+0.42 \pm 0.14$. When the parallel general trends are removed, the correlation coefficient is $+0.15 \pm 0.16$.[2]

On the other hand, in Chart 7 there appears to be a remarkable agreement in the *fluctuations* of the respiratory illness absenteeism with precipitation above the mean. The coefficient of correlation

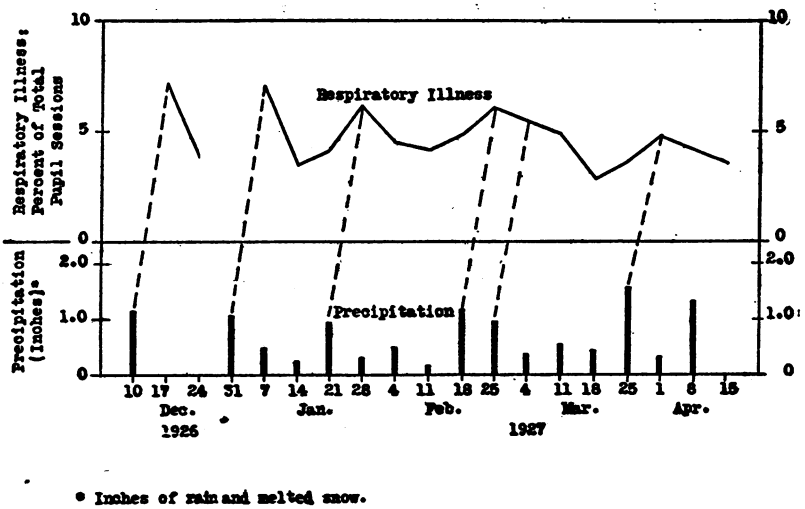


CHART 7.—Weekly variations in absences due to respiratory causes in rural schools, Cattaraugus County, N. Y., compared with the weekly precipitation, December 5, 1926–April 15, 1927

between the weekly respiratory illness absenteeism and precipitation during the preceding week is $+0.49 \pm 0.13$. With the removal of the seasonal trend in the respiratory illness absenteeism, the coefficient of correlation between the deviations of this curve and those of precipitation during the preceding week is $+0.64 \pm 0.10$.[2]

These facts are also brought out in Table 15. The weeks in which the outdoor temperature is low, when the difference between the average indoor and outdoor temperatures is great, are not the weeks in which absenteeism due to respiratory illness is excessive, nor does

[2] In order to study the relationship between fluctuations in respiratory illness, precipitation, and changes in temperature, the attempt has been made to remove the effect of season in both the temperature and respiratory illness.

The period of this study was so brief that it was possible to fit satisfactory straight lines to the curves of weekly mean temperature difference and of weekly absenteeism due to respiratory illness.

The trends of these lines being given by m in the formula $y = mx + b$, the mx values for each week have been subtracted from the observed values and the seasonal effect has been removed in this manner.

an excess of absenteeism due to this cause regularly follow periods of low temperature. On the other hand, with the exception of the last week of the study, weeks with precipitation above the mean are regularly accompanied by increased respiratory illness, which reaches a maximum during the following week.

The importance of precipitation and the unimportance of temperature change on the variation of the incidence of respiratory illness are further supported by the determination of the coefficients of partial correlation. With precipitation kept constant, the partial correlation coefficient between fluctuations in temperature and respiratory illness absenteeism is +0.056, whereas the two-variable coefficient was +0.152. The effect of removing the influence of temperature from the relationship of precipitation and fluctuations in the respiratory illness absenteeism gives a coefficient of +0.635, whereas the simple coefficient between these two variables was +0.640.

The unimportance of temperature change alone on the incidence of respiratory illness is thus demonstrated in two ways: First, by the low and statistically insignificant simple and partial coefficient of correlation—the latter with the effect of precipitation kept constant—between these two variables, and, secondly, by the almost insignificant change that is brought about in the coefficient of correlation between recipitation and respiratory illness when temperature is held constant.

TABLE 13.—*Rates from the attendance and health records for all classrooms, summarized by weeks*

Week ended—	Pupil sessions attended [1]		Absences [1]		Respiratory illness among pupils present and absent [1]
	Total	With respiratory illness	Total	With respiratory illness	
1926					
Dec. 17	85.8	22.6	14.2	7.2	29.8
Dec. 24	88.5	31.2	11.5	3.9	35.1
1927					
Jan. 7	82.0	22.6	18.0	7.0	29.6
Jan. 14	90.7	20.5	9.3	3.5	24.0
Jan. 21	70.4	12.8	29.6	4.1	[2] 16.9
Jan. 28	82.3	20.6	17.7	6.2	26.8
Feb. 4	88.4	17.1	11.6	4.5	21.6
Feb. 11	88.5	18.8	11.5	4.1	22.9
Feb. 18	87.6	18.6	12.4	4.9	23.5
Feb. 25	83.9	17.4	16.1	6.1	23.5
Mar. 4	85.3	19.9	14.7	5.5	25.4
Mar. 11	86.4	21.8	13.6	4.9	26.7
Mar. 18	87.7	18.0	12.3	2.9	20.9
Mar. 25	86.5	14.4	13.5	3.6	18.0
Apr. 1	87.1	15.5	12.9	4.8	20.3
Apr. 8	86.9	16.2	13.1	4.2	20.4
Apr. 15	89.5	14.9	10.5	3.6	18.5
All weeks	85.9	18.3	14.1	4.7	23.0

[1] Per cent of total pupil sessions.

[2] Regent's examinations.

TABLE 14.—*Weather data, by weeks*

Week ended—	Mean outdoor temperature (degrees F.)[1]	70° minus mean outdoor temperature	Precipitation[2]	Week ended—	Mean outdoor temperature (degrees F.)[1]	70° minus mean outdoor temperature	Precipitation[2]
1926				1927—Continued			
Dec. 10	20.3	49.7	1.13	Feb. 11	29.6	40.4	0.14
Dec. 17	24.9	45.1	.04	Feb. 18	29.1	40.9	1.18
Dec. 24	21.5	48.5	.09	Feb. 25	26.9	43.1	.95
Dec. 31	23.4	46.6	1.04	Mar. 4	29.8	40.2	.35
1927				Mar. 11	34.8	35.2	.51
Jan. 7	22.6	47.4	.47	Mar. 18	49.2	20.8	.42
Jan. 14	12.0	58.0	.22	Mar. 25	35.4	34.6	1.57
Jan. 21	25.2	44.8	.96	Apr. 1	35.6	34.4	.31
Jan. 28	21.1	48.9	.28	Apr. 8	35.3	34.7	1.32
Feb. 4	33.7	36.3	.46	Apr. 15	37.1	32.9	.09

[1] From the records of the cooperative observer, U. S. Weather Bureau, Allegany State Park, Cattaraugus County, N. Y.
[2] Inches of rain and melted snow from the records of the cooperative observer, U. S. Weather Bureau, Olean, N. Y.

TABLE 15.—*Temperature, precipitation, and respiratory illness absenteeism*

Week ended—	Indoor-outdoor temperature difference (degrees F.)	Decline of average weekly temperature below 32° F.	Excess of precipitation above mean	Excess of respiratory illness absenteeism above trend
1926				
Dec. 10	50	12	0.46	
Dec. 17	45	7		1.6
Dec. 24	49	11		
Dec. 31	47	9	.37	
1927				
Jan. 7	47	9		1.7
Jan. 14	58	20		
Jan. 21	45	7	.29	
Jan. 28	49	11		1.2
Feb. 4	36			
Feb. 11	40	2		
Feb. 18	41	3	.51	.2
Feb. 25	43	5	.28	1.5
Mar. 4	49	11		1.0
Mar. 11	35			.5
Mar. 18	21			
Mar. 25	35		.90	
Apr. 1	34			.7
Apr. 8	35		.65	.2
Apr. 15	33			

VII. Conclusions

1. Rural schools heated by furnaces and jacketed stoves were more generally overheated than rooms with ordinary stoves.

2. Lateral temperature distribution was very good in the rooms heated by furnaces but very uneven in stove-heated schools. The average difference between temperatures on desk tops in different parts of the room exceeded 10° F. in nearly half the rooms, and in individual instances the observed difference was as great as 30° F. and 40° F.

3. Vertical differences in temperature were great, that is, floor temperatures were low—half the rooms averaging below 60° with one extreme record of 31°—and ceiling temperatures (in the rooms

in which such observations were made) high—often over 90°, and in two rooms averaging over 100°—in rooms where no provision was made for the artificial circulation of air.

4. In general, one and two room rural schools, such as those observed in Cattaraugus County, appear to be highly unsatisfactory from the standpoint of heating and ventilation. They are subject to gross overheating on the one hand and to serious chilling on the other, and show wide horizontal and vertical differences in the temperatures existing simultaneously in different parts of the same room.

(During the Spring of 1928 three schools were provided with insulating material in varying degrees. The heating equipment in these and a few other schools was also replaced or altered and later it will be possible to report on the results that can be obtained under improved conditions in this type of school.)

5. Absenteeism in one and two room schools of Cattaraugus County ranged from 6 to 37.8 per cent, with an average of 14.1 per cent, which is twice as high as the average rates observed in Syracuse and New York City. The mean rates of the middle half of the rooms in the Cattaraugus County study fell between 10.7 and 17.5 per cent.

6. Absenteeism reported due to respiratory illness in the Cattaraugus County rural schools varied from 1.2 to 9.7 per cent of the total pupil sessions, with a mean of 4.7 per cent, which was twice as high as the corresponding rate for the current Syracuse study and four times that found in the New York City studies of the former commission. The middle half of the reported rates of respiratory illness absenteeism in the rural schools of Cattaraugus County fell between 2.3 and 6.4 per cent of the total pupil sessions.

7. In general, the prevalence of respiratory illness showed an inverse relationship to outdoor temperatures, that is, the incidence of respiratory illness was greater during the cold months of the year. In the absence of other factors, however, low temperature itself did not appear to be directly associated with increased respiratory illness.

8. During periods of low temperature, deviations from the general trend of the incidence of respiratory illness varied with the fluctuations in precipitation, the maximum effect occurring in the week following that which had an excess of precipitation, with the exception of the last week of the study.

REFERENCES

(1) Relation between Respiratory Illness and Air Conditions in Certain Syracuse Schools. New York Commission on Ventilation. School and Society, Vol. XXVI, No. 677, December 17, 1927.

(2) Effects of Mechanical and Natural Ventilation on the Health of the School Children. By Thomas J. Duffield. Journal American Society Heating and Ventilating Engineers, April, 1928.

(3) The School Ventilation Studies of the New York Commission during 1926-27. By Thomas J. Duffield. American School Board Journal, January, 1928.

Appendix

(Forms and tables not given in text)

City ____________________ School month

School ____________________ From ____________________ 192 ____

Room No. ____________________ to ____________________ 192 ____

Grade ____________________ Teacher ____________________

TEMPERATURE RECORD

DAY OF WEEK	MONTH	HOURS OF OBSERVATIONS											COMPUTATIONS		REMARKS Note inclement Weather conditions here
		OUTDOOR			INDOOR										
					A.M.				P.M.						
		1	2	3	1	2	3	4	1	2	3	4	SUM.	AVE.	
Monday															
Tuesday															
Wednesday															
Thursday															
Friday															
SUM															
AVERAGE															
Monday															
Tuesday															
Wednesday															
Thursday															
Friday															
SUM															
AVERAGE															
Monday															
Tuesday															
Wednesday															
Thursday															
Friday															
SUM															
AVERAGE															
Monday															
Tuesday															
Wednesday															
Thursday															
Friday															
SUM															
AVERAGE															

INSTRUCTIONS CONCERNING THE TEMPERATURE RECORD

The temperature record provides spaces for 3 outdoor and 8 indoor readings daily. Outdoor readings are to be made at a carefully selected spot 5 minutes before the opening of each session and at the end of the afternoon session. (On one-session days, in order to have two readings, the second may be taken at the end of the session).

Indoor readings are requested at each session, as follows:—

1. When the session opens.
2. Immediately before the mid-session recess or exercise period.
3. Immediately after the mid-session recess.
4. Just before the session ends.

The number at the head of each column corresponds to the time of observation given in the above list. If, because of an oversight or for any other reason, a reading happens to be omitted, mark a cross (X in the space where the reading should have been recorded. In any case, never record an estimate of what the reading might have been.

FORM 1.—Temperature record kept by teachers

City________________________ School month
School________________________ From____________________192___
Room No.________________________ to____________________192___
Grade________________________ Teacher________________________

ATTENDANCE AND HEALTH RECORD

DAY OF WEEK	MONTH / DATE	SESSIONS	PUPILS ON (active) ROLL (1)	PUPILS PRESENT	PUPILS ABSENT	PUPILS PRESENT With Respiratory Disease (2)	PUPILS ABSENT With Respiratory Disease (2)	PUPILS ABSENT With other Illness	REMARKS Indicate holidays, one-session days, also any change of pupils on roll.
Monday		A.M.							
		P.M.							
Tuesday		A.M.							
		P.M.							
Wednesday		A.M.							
		P.M.							
Thursday		A.M.							
		P.M.							
Friday		A.M.							
		P.M.							
TOTALS									
Rate per 100 pupil sessions									
Monday		A.M.							
		P.M.							
Tuesday		A.M.							
		P.M.							
Wednesday		A.M.							
		P.M.							
Thursday		A.M.							
		P.M.							
Friday		A.M.							
		P.M.							
TOTALS									
Rate per 100 pupil sessions									
Monday		A.M.							
		P.M.							
Tuesday		A.M.							
		P.M.							
Wednesday		A.M.							
		P.M.							
Thursday		A.M.							
		P.M.							
Friday		A.M.							
		P.M.							
TOTALS									
Rate per 100 pupil sessions									
Monday		A.M.							
		P.M.							
Tuesday		A.M.							
		P.M.							
Wednesday		A.M.							
		P.M.							
Thursday		A.M.							
		P.M.							
Friday		A.M.							
		P.M.							
TOTALS									
Rate per 100 pupil sessions									
MONTHLY TOTALS									
Rate per 100 pupil sessions									

Note 1. For the purpose of this study, pupils enrolled are to be continued on the active roll regardless of the length of absence, unless the family moves from the school district, or the pupil leaves school permanently.

2. This term includes:— coryza, pharyngitis, tonsillitis, laryngitis, bronchitis, pneumonia, tuberculosis, grip, etc.

FORM 2—Attendance and health record kept by teachers

TABLE 1.—*Enrollment, grades, duration of study, type of heating unit, and fuel commonly used for each school*

School or classroom designation	Number of pupils on active roll	Grades included	Number of weeks included	Type of heating unit [1]	Fuel generally used [2]
Allegany 9	15	1-3	13	J. S	C.
Portville 4	25	1-8	11	J. S	C.
Yorkshire 4, downstairs	37	1-4	11	F	C.
Yorkshire 2	14	1-8	9	S	W.
Portville 8	16	1-8	11	S	W.
Humphrey 3	13	1-8	10	S	W.
Franklinville 3, south room	20	1-4	10	F	C.
Freedom 4	8	3-8	8	S	C.
Freedom 2, north room	14	1-5	13	J. S	C.
Hinsdale 10, west room	13	5-7	16	F	C.
Freedom 5	17	1-8	14	S	W.
Hinsdale 10, east room	19	1-4	13	F	C.
Olean 2	24	1-7	13	J. S	W.
Portville 6, northwest room	24	1-4	13	F	C.
Hinsdale 7	19	1-6	8	S	W.
Freedom 2, south room	17	5-8	11	J. S	C.
Portville 6, southeast room	20	5-8	15	F	C.
Portville 1	28	1-7	14	S	W.
Portville 9	15	1-7	8	S	W.
Franklinville 6	15	1-8	12	S	W.
Allegany 11-A, south room	29	1-3	10	S	G.
Carrollton 6	11	1-7	12	S	W.
Ischua 1, west room	17	4-8	11	S	C.
Portville 7	29	1-7	9	S	W.
Yorkshire 4, upstairs	24	5-8	14	F	C.
Franklinville 3, north room	11	5-7	10	F	C.
Farmersville 7	17	1-8	14	S	W.
Lyndon 3	9	1-8	10	S	W.
Freedom 1, east room	19	1-4	14	F	C.
Yorkshire 3	22	2-8	11	S	W.
Allegany 10	12	1-6	12	J. S	W.
Lyndon 7	15	1-8	10	S	W.
Portville 3	16	1-7	15	S	W.
Allegany 7	10	1-7	10	S	G.
Ischua 8	9	1-8	13	S	W.
Allegany 11-B, south room	17	4-8	13	S	G.
Allegany 5	18	1-8	13	J. S	W.
Allegany 11-B, north room	19	1-3	13	S	G.
Franklinville 2	9	1-8	12	S	W.
Allegany 6	23	1-7	13	S	G.
Franklinville 9	22	1-8	14	S	W.
Ischua 1, east room	29	1-3	10	S	C.
Yorkshire 5	10	1-8	9	S	W.
Allegany 4	22	1-6	11	S	W.
Humphrey 5	20	1-8	15	S	W.
Hinsdale 6	14	1-8	7	S	W.
Machias 3	14	2-8	14	S	W.
Hinsdale 4	20	1-8	8	S	W.

[1] J. S., jacketed stove; F., furnace; S., stove. [2] C., coal; W., wood; G., natural gas.

TABLE 2.—*Structural features of the classrooms*

School or classroom designation	Building				Classroom		
	Material	Number of stories	Cellar	Number of classrooms	Wall finish [1]	Ceiling finish [1]	Sides with windows
Allegany 9	Wood	1		1	M. B	M. B	2
Portville 4	do	1		1	W. B	W. B	2
Yorkshire 4, downstairs	do	2	X	2	Pl	Pl	3
Yorkshire 2	do	1		1	M. B	M. B	2
Portville 8	do	1		1	M. B	M. B	2
Humphrey 3	do	1		1	M. B	Metal	3
Franklinville 3, south room	do	1	X	2	W. B	W. B	1
Freedom 4	do	1		1	M. B	M. B	3
Freedom 2, north room	do	1		2	M. B	M. B	2
Hinsdale 10, west room	do	1	X	2	M. B	M. B	2
Freedom 5	do	1		1	M. B	M. B	3
Hinsdale 10, east room	do	1	X	2	M. B	M. B	2
Olean 2	do	1		1	Pl	Metal	4

[1] M. B., matched boards; W. B., wall boards; Pl., plaster.

TABLE 2.—*Structural features of the classrooms*—Continued

School or classroom designation	Building				Classroom		
	Material	Number of stories	Cellar	Number of classrooms	Wall finish	Ceiling finish	Sides with windows
Portville 6, northwest room	Brick	1	×	2	Pl	Metal	1
Hinsdale 7	Wood	1		1	Pl	Pl	2
Freedom 2, south room	do	1		2	M. B	M. B	3
Portville 6, southeast room	Brick	1	×	2	Pl	Metal	1
Portville 1	Wood	1		1	M. B	M. B	3
Portville 9	do	1		1	M. B	M. B	3
Franklinville 6	do	1		1	M. B	M. B	3
Allegany 11–A, south room	do	1		2	M. B	M. B	2
Carrollton 6	do	1		1	W. B	W. B	3
Ischua 1, west room	do	1		2	Pl	Pl	3
Portville 7	do	1		1	Pl	Pl	2
Yorkshire 4, upstairs	do	2	×	2	Pl	Pl	2
Franklinville 3, north room	do	1	×	2	M. B	W. B	1
Farmersville 7	do	1		1	M. B	W. B	2
Lyndon 3	do	1		1	M. B	M. B	3
Freedom 1, east room	do	2	×	4	Pl	Pl	2
Yorkshire 3	do	1		1	M. B	M. B	2
Allegany 10	do	1		1	M. B	M. B	3
Lyndon 7	do	1		1	M. B	M. B	3
Portville 3	do	1		1	M. B	M. B	2
Allegany 7	do	1		1	M. B	M. B	2
Ischua 8	do	1		1	Pl	Pl	2
Allegany 11–B, south room	do	1		2	Pl	Pl	3
Allegany 5	do	1		1	M. B	M. B	2
Allegany 11–B, north room	do	1		2	Pl	Pl	3
Franklinville 2	do	1		1	M. B	M. B	2
Allegany 6	do	1		1	M. B	M. B	2
Franklinville 9	do	1		1	M. B	M. B	3
Ischua 1, east room	do	1		2	Pl	Pl	3
Yorkshire 5	do	1		1	M. B	M. B	2
Allegany 4	do	1		1	M. B	M. B	3
Hinsdale 5	do	1		1	M. B	M. B	3
Hinsdale 6	do	1		1	Pl	Pl	2
Machias 3	do	1		1	M. B	M. B	3
Hinsdale 4	do	1		1	Pl	Pl	3

TABLE 3.—*Average room, ceiling, and floor temperatures and other observational data for each schoolroom*

School or classroom designation	Average room temperature (by teachers)	Number of observers' visits	Average temperature		Average relative humidity
			Ceiling	Floor	
Allegany 9	78.7	14		62.8	33
Portville 4	75.7	12	102.5	65.8	30
Yorkshire 4, downstairs	75.3	12	99.9	69.2	36
Yorkshire 2	74.1				
Portville 8	74.0	7		52.7	26
Humphrey 3	73.6	9		58.9	34
Franklinville 3, south room	73.6	11	99.0	64.4	39
Freedom 4	73.5	8		60.0	38
Freedom 2, north room	72.7	10		61.1	34
Hinsdale 10, west room	72.5	12	80.1	62.2	27
Freedom 5	71.8	10	82.6	62.5	38
Hinsdale 10	71.6	12	78.2	65.7	37
Olean 2	71.6	13	90.4	59.6	26
Portville 6, northwest room	71.6	11		61.5	24
Hinsdale 7	71.2	13		56.9	31
Freedom 2, south room	71.2	11		61.2	37
Portville 6, southeast room	71.0	9		64.2	29
Portville 1	71.0	13	90.4	62.8	33
Portville 9	70.8	5		57.9	31
Franklinville 6	70.7	12	101.3	57.7	34
Allegany 11–A, south room	70.6	5		61.4	34
Carrollton 6	70.3	10		61.1	28
Ischua 1, west room	69.9	12		61.0	35
Portville 7	69.2	11	82.0	56.4	36
Yorkshire 4, upstairs	69.1	12	93.8	70.7	36
Franklinville 3, north room	68.9	10	92.2	61.0	35
Farmersville 7	68.9	13		59.4	43
Lyndon 3	68.6				
Freedom 1, east room	68.6	13	79.8	63.2	38
Yorkshire 3	68.6	7	84.6	56.1	48
Allegany 10	68.4	9		59.4	28
Lyndon 7	68.3	5		56.2	40
Portville 3	68.2	12		61.8	35

TABLE 3.—*Average room, ceiling, and floor temperatures and other observational data for each schoolroom*—Continued

School or classroom designation	Average room temperature (by teachers)	Number of observers' visits	Average temperature		Average relative humidity
			Ceiling	Floor	
Allegany 7	67.9	7		56.2	34
Ischua 8	67.6	10		53.2	38
Allegany 11-B, south room	67.6	10		62.3	33
Allegany 5	67.4	13		54.4	35
Allegany 11-B, north room	67.3	11		62.5	29
Franklinville 2	67.0	10		54.9	32
Allegany 6	66.8	10		60.5	27
Franklinville 9	66.8	10	86.0	55.8	42
Ischua 1, east room	66.6	11		59.0	40
Yorkshire 5	65.5				
Allegany 4	65.2	13	95.5	63.3	35
Humphrey 5	65.1	5		50.3	29
Hinsdale 6	64.2	5		55.5	34
Machias 3	63.5	11		51.2	46
Hinsdale 4	61.7	8		51.5	49

TABLE 4.—*Lateral temperature distribution in the classrooms (data collected by commission's observers)*

School or classroom designation	Room thermometer	Desk-top stations				
		1	2	3	4	5
Allegany 9	76.6	69.9	73.4	70.8	69.5	
Portville 4	77.8	75.3	76.3	76.4	74.6	87.5
Yorkshire 4, downstairs	78.2	72.8	72.3	73.6	74.9	75.9
Yorkshire 2[1]						
Portville 8	76.8	70.4	64.3	65.0	72.8	
Humphrey 3	72.7	67.7	67.9	68.1	69.4	80.0
Franklinville 3, south room	77.3	71.3	71.5	72.9	71.5	
Freedom 4	76.0	70.2	67.7	68.2	67.6	77.1
Freedom 2, north room	74.3	73.6	76.4	69.4	69.5	
Hinsdale 10, west room	75.2	70.6	69.8	71.1	71.1	
Freedom 5	72.3	68.0	68.2	69.3	71.1	73.1
Hinsdale 10, east room	71.2	68.3	68.5	67.4	67.7	
Olean 2	76.3	66.1	67.8	78.6	69.8	
Portville 6, northwest room	70.2	69.7	68.2	67.8	67.2	
Hinsdale 7	72.6	73.6	67.0	68.2	69.0	
Freedom 2, south room	71.4	67.2	68.1	67.4	68.7	69.7
Portville 6, southeast room	73.3	74.5	72.0	70.6	72.3	
Portville 1	71.8	69.7	68.2	69.4	69.8	77.5
Portville 9	71.4	68.4	65.4	64.4	68.1	85.4
Franklinville 6	71.0	64.5	66.0	65.9	64.0	86.5
Allegany 11-A, south room	75.6	71.4	75.0	73.4	70.4	83.8
Carrollton 6	72.2	69.1	67.4	68.4	69.2	75.2
Ischua 1, west room	71.0	71.0	89.0	66.5	65.3	
Portville 7	70.2	66.6	68.1	67.1	65.7	75.8
Yorkshire 4, upstairs	74.2	72.9	72.8	71.9	71.7	75.9
Franklinville 3, north room	74.2	68.8	67.2	66.8	67.6	
Farmersville 7	70.4	66.9	65.9	65.5	65.3	83.9
Lyndon 3[1]						
Freedom 1, east room	68.7	67.4	67.4	65.6	66.6	64.7
Yorkshire 3	67.5	62.4	63.1	62.8	63.1	75.8
Allegany 10	68.4	66.2	67.2	67.4	66.2	80.1
Lyndon 7	66.4	63.0	63.8	63.8	62.0	69.2
Portville 3	71.0	66.4	65.8	65.6	65.7	72.3
Allegany 7	68.7	64.9	63.0	62.9	65.7	65.1
Ischua 8	69.0	64.0	63.7	64.3	64.7	75.3
Allegany 11-B, south room	70.8	69.1	70.8	67.5	67.7	72.0
Allegany 5	69.6	63.5	63.2	62.7	67.6	64.8
Allegany 11-B, north room	69.1	67.4	68.8	71.8	69.5	73.4
Franklinville 2	68.8	64.8	64.0	64.6	65.2	71.1
Allegany 6	72.1	69.4	84.1	68.7	67.6	84.7
Franklinville 9	72.2	65.0	63.8	64.2	65.0	81.3
Ischua 1, east room	66.9	66.1	73.4	65.4	64.0	
Yorkshire 5[1]						
Allegany 4	75.1	72.7	69.9	69.1	74.3	75.1
Humphrey 5	68.8	64.2	58.6	60.2	63.2	66.8
Hinsdale 6	65.2	64.5	60.0	62.0	65.2	59.2
Machias 3	64.0	64.4	58.9	60.2	61.5	
Hinsdale 4	61.1	54.9	59.0	59.1	56.5	61.7

[1] No data.

TABLE 5.—*Summarized attendance and health records for each classroom (arranged in order of average room temperatures)*

School or classroom designation	Total pupil sessions	Pupil sessions attended		Absences	
		Total	With respiratory illness	Total	Due to respiratory illness
Allegany 9	1,591	1,402	310	189	29
Portville 4	2,654	2,134	1,371	520	134
Yorkshire 4, downstairs	3,862	3,113	882	749	369
Yorkshire 2	1,176	1,086	10	90	18
Portville 8	1,728	1,542	347	186	53
Humphrey 3	1,209	752	194	457	107
Franklinville 3, south room	1,992	1,754	295	238	45
Freedom 4	608	522	131	86	34
Freedom 2, north room	1,600	1,415	388	185	102
Hinsdale 10, west room	2,070	1,930	116	140	43
Freedom 5	2,244	1,926	195	318	67
Hinsdale 10, east room	2,378	2,110	142	268	145
Olean 2	2,768	2,489	115	279	73
Portville 6, northwest room	2,966	2,409	896	557	264
Hinsdale 7	1,482	1,140	143	342	49
Freedom 2, south room	1,734	1,500	862	234	118
Portville 6, southeast room	3,016	2,780	952	236	132
Portville 1	3,711	3,018	607	693	360
Portville 9	1,080	848	284	232	60
Franklinville 6	1,638	1,492	48	146	44
Allegany 11–A, south room	2,704	2,541	424	163	48
Carrollton 6	1,228	998	312	230	113
Ischua 1, west room	1,844	1,677	504	167	26
Portville 7	2,420	1,977	98	443	201
Yorkshire 4, upstairs	3,071	2,679	37	392	67
Franklinville 3, north room	1,078	962	260	116	39
Farmersville 7	2,422	2,115	199	307	179
Lyndon 3	892	758	179	134	35
Freedom 1, east room	2,426	2,179	110	247	74
Yorkshire 3	2,172	2,020	7	152	72
Allegany 10	1,320	1,104	87	216	57
Lyndon 7	1,344	1,168	56	176	74
Portville 3	2,448	2,050	832	398	160
Allegany 7	978	849	192	129	19
Ischua 8	1,172	842	577	330	21
Allegany 11–B, south room	1,928	1,733	131	195	23
Allegany 5	2,128	1,717	460	411	152
Allegany 11–B, north room	2,185	1,929	162	256	36
Franklinville 2	1,008	816	33	192	32
Allegany 6	2,722	2,276	1,360	446	149
Franklinville 9	2,846	2,414	486	432	180
Ischua 1, east room	2,568	2,280	886	288	62
Yorkshire 5	844	706	3	138	63
Allegany 4	2,062	1,806	302	256	56
Humphrey 5	2,732	2,373	856	359	64
Hinsdale 6	1,078	832	34	246	62
Machias 3	1,876	1,645	134	231	26
Hinsdale 4	1,511	1,370	294	141	71
Totals	94,514	81,178	17,303	13,336	4,407
Rate per 100-pupil sessions		85.9	18.3	14.1	4.7

TABLE 6.—*Attendance and health records for all classrooms, summarized by weeks*

Week ended—	Total pupil sessions	Pupil sessions attended		Absences	
		Total	With respiratory illness	Total	Due to respiratory illness
1926					
Dec. 17	780	669	176	111	56
Dec. 24	1,275	1,128	398	147	50
1927					
Jan. 7	3,124	2,563	705	561	219
Jan. 14	4,310	3,911	883	399	152
Jan. 21	4,592	3,233	589	1,359	187
Jan. 28	6,361	5,231	1,308	1,127	393
Feb. 4	7,185	6,353	1,231	832	323
Feb. 11	7,997	7,075	1,500	922	326
Feb. 18	8,056	7,057	1,498	999	395
Feb. 25	7,113	5,969	1,237	1,144	433
Mar. 4	8,065	6,881	1,605	1,184	443
Mar. 11	8,150	7,044	1,774	1,106	400
Mar. 18	7,338	6,436	1,319	902	210
Mar. 25	5,337	4,615	769	722	190
Apr. 1	5,345	4,658	830	687	257
Apr. 8	5,457	4,744	882	713	230
Apr. 15	4,029	3,608	599	421	143
Total	94,514	81,178	17,303	13,336	4,407
Per cent of total pupil sessions		85.9	18.3	14.1	4.7

PUBLIC HEALTH SERVICE PUBLICATIONS

A List of Publications Issued During the Period July, 1928–June, 1929

Below is printed a list of publications of the United States Public Health Service issued during the period July, 1928–June, 1929.

The most important articles that appear each week in the Public Health Reports are reprinted in pamphlet form, making possible a wider and more economical distribution of information that is of especial value and interest to public-health workers and the general public.

All of the publications listed below except those marked with an asterisk (*) are available for free distribution and, as long as the supply lasts, may be obtained by addressing the Surgeon General, United States Public Health Service, Washington, D. C. Those publications marked with an asterisk are not available for free distribution but may be purchased from the SUPERINTENDENT OF DOCUMENTS, Government Printing Office, Washington, D. C., *at the prices noted.* (No remittances should be sent to the Public Health Service.)

Reprints from the Public Health Reports

1235. A special study of the vision of school children. By Grover A. Kempf, Bernard L. Jarman, and Selwyn D. Collins. July 6, 1928. 27 pages.

1236. International sanitary convention of Paris of June 22, 1926. July 13, 1928. 70 pages.

1237. Benzol poisoning as a possible hazard in chemical laboratories. By J. J. Bloomfield. July 20, 1928. 4 pages.

1238. Public Health Service publications. A list of publications issued during the period July, 1927–June, 1928. July 20, 1928. 6 pages.
1239. Trend of disabling sickness among employees of a public utility. By Dean K. Brundage. July 27, 1928. 28 pages.
1240. Regulating the production, handling, and distribution of milk. By Harvey Walker. August 10, 1928. 14 pages.
1241. Biological products. Establishments licensed for the propagation and sale of viruses, serums, toxins, and analogous products. August 10, 1928. 5 pages.
1242. Trachoma studies. I. The origin and nature of the von Prowazek-Halberstaedter inclusion bodies in trachoma. II. The experimental production in laboratory animals of forms resembling the "elementary bodies" of von Prowazek and the "initial bodies" of Lindner. By Ida A. Bengtson. August 24, 1928. 11 pages.
1243. Marine hospital patients and other beneficiaries of the Public Health Service. By F. C. Smith. August 31, 1928. 10 pages.
1244. Microscopic pathology attending exposure of guinea pigs to vapors of ethyl bromide. By C. P. Waite and W. P. Yant. August 31, 1928. 6 pages.
1245. Health hazards in chromium plating. By J. J. Bloomfield and William Blum. September 7, 1928. 22 pages.
1246. An outbreak of typhoid fever and gastroenteritis attributed to the consumption of raw oysters. By George H. Ramsey, G. F. McGinnes, and Paul R. Neal. September 14, 1928. 11 pages.
1247. The epidemiology of undulant (malta) fever in Iowa. By A. V. Hardy. September 21, 1928. 11 pages.
1248. The treatment of sewage by stream-flow aeration. By Harry N. Jenks and Max Levine. September 28, 1928. 16 pages.
1249. Sewage treatment plant at the Grand Canyon National Park. By H. B. Hommon. October 5, 1928. 16 pages.
1250. Fumigation with cyanogen products. Report of experiments conducted with cyanogen products used in the fumigation of vessels for quarantine purposes at the New York quarantine station, Rosebank, Staten Island, N. Y. By C. V. Akin and G. C. Sherrard. October 12, 1928. 24 pages.
1251. Health studies of negro children. II. The physical status of the urban negro child: A study of 5,170 negro school children in Atlanta, Ga. By E. Blanche Sterling. October 19, 1928. 62 pages.
1252. The increased susceptibility of the albino rat infected with the tubercle bacillus to tuberculin. By Maurice I. Smith. October 26, 1928. 12 pages.
1253. The oral administration of derivatives of chaulmoogra oil in leprosy. By N. E. Wayson and L. F. Badger. November 2, 1928. 2 pages.
1254. State and insular health authorities, 1928. Directory, with data as to appropriations and publications. November 2, 1928. 22 pages.
1255. Milk consumption in eighteen small Alabama communities. By Charles M. Leach and Leslie C. Frank. November 9, 1928. 4 pages.
1256. The thyroid gland and communicable diseases. Immediate and remote effects of communicable diseases upon the thyroid glands of elementary school children in Cincinnati. By Robert Olesen. November 16, 1928. 12 pages.
1257. City health officers, 1928. Directory of those in cities of 10,000 or more population. November 16, 1928. 12 pages.

1258. Distribution of endemic typhus (Brill's disease) in the United States. By Kenneth F. Maxcy. November 23, 1928. 12 pages.
1259. Cooperative rural health work of the Public Health Service in the fiscal year 1928. By L. L. Lumsden. November 30, 1928. 59 pages.
1260. Changes in the regulations proposed for tetraethyl lead gasoline. November 30, 1928. 2 pages.
1261. A review of the current practice of the lighting of school buildings in the United States. By James E. Ives. December 14, 1928. 8 pages.
1262. Tularaemia in sheep in nature. By R. R. Parker and J. S. Dade. January 18, 1929. 5 pages.
1263. Rocky mountain spotted fever. A preliminary report on the Weil-Felix reaction. By A. L. Kerlee and R. R. Spencer. January 25, 1929. 4 pages.
1264. A study of the relationship between type of school ventilation and respiratory illness in certain schools of New Haven, Conn. By Leonard Greenburg. February 8, 1929. 17 pages.
1265. The nature of the effect of a high-frequency electric field upon paramœcium. By H. Kahler, H. W. Chalkley, and Carl Voegtlin. February 15, 1929. 8 pages.
1266. Sickness among industrial employees. Frequency of disability lasting longer than one week from important causes among 165,000 persons in industry in 1927 and a summary of the morbidity experience from 1920 to 1927. By Dean K. Brundage. February 22, 1929. 17 pages.
1267. A rat and a rat-flea survey of ships at the port of New York. A study of ships' rats and fleas as they are concerned in the transfer of bubonic plague with particular reference to maritime quarantine. By C. L. Williams. March 1, 1929. 34 pages.
1268. Some notes on the limitations of screens in the prevention of malaria. By M. A. Barber and C. H. King. March 8, 1929. 6 pages.
1269. The national leper home (United States Marine Hospital), Carville, La. Review of the more important activities during the fiscal year ended June 30, 1928. By O. E. Denney. March 8, 1929. 8 pages.
1270. Rat-flea survey of the port of Norfolk, Va. By H. E. Hasseltine. March 15, 1929. 11 pages.
1271. Endemic typhus fever of the southeastern United States: Reaction of the guinea pig. By Kenneth F. Maxcy. March 15, 1929. 12 pages.
1272. A trachoma survey of 29 public schools on or near Indian reservations in Montana. By J. H. Crouch. March 22, 1929. 9 pages.
1273. Sanitary engineering courses of engineering colleges of the United States. By Isador W. Mendelsohn. March 22, 1929. 11 pages.
1274. Leprosy in the United States. A statistical study of seven hundred cases in the national leprosarium. By Ralph Hopkins and Oswald E. Denney. March 29, 1929. 16 pages.
1275. Age incidence of the common communicable diseases of children. A study of case rates among all children and among children not previously attacked and of death rates and the estimated case fatality. By Selwyn D. Collins. April 5, 1929. 64 pages.
1276. Endemic goiter in Tennessee. By Robert Olesen. April 12, 1929. 33 pages.
1277. The health of the American Indian. By M. C. Guthrie. April 19, 1929. 13 pages.
1278. The milk feeding of children. By E. Blanche Sterling. April 19, 1929. 8 pages.

1279. Quail as a possible source of tularaemia infection in man. By R. R. Parker. April 26, 1929. 2 pages.
1280. Development of a power dusting device for applying Paris green as an anopheline larvicide. By J. A. LePrince and H. A. Johnson. April 26, 1929. 17 pages.
1281. Physical measurements of boys and girls of native white race stock (third generation native born) in the United States. Physical measurement studies No. 1. By Selwyn D. Collins and Taliaferro Clark. May 3, 1929. 25 pages.
1282. Morbidity in the influenza epidemic of 1928–29. Preliminary report on surveys in certain cities. By M. V. Veldee. May 10, 1929. 5 pages.
1283. The selection of a heat-resistant strain of vaccine virus (rabbit testicular). By Charles Armstrong. May 17, 1929. 9 pages.
1284. Extent of rural health service in the United States, 1925–1929. By L. L. Lumsden. May 17, 1929. 16 pages.
1285. The action of irradiated ergosterol in the rabbit. By Maurice I. Smith and E. Elvove. May 24, 1929. 12 pages.
1286. Act establishing narcotic farms and a narcotics division in the Public Health Service. May 24, 1929. 5 pages.
1287. The occurrence of bacterium tularense in the wood tick (dermacentor occidentalis) in California. By R. R. Parker, C. S. Brooks, and Hadleigh Marsh. May 31, 1929. 2 pages.
1288. Malaria and the malaria danger in certain irrigated regions of southwestern United States. By M. A. Barber, W. H. W. Komp, and C. H. King. May 31, 1929. 16 pages.
1289. The influenza epidemic at the University of Oregon in the fall of 1928. By Fred N. Miller. June 7, 1929. 9 pages.
1290. The effect of small doses of plasmochin on the viability of gametocytes of malaria as measured by mosquito infection experiments. By M. A. Barber, W. H. W. Komp, and B. M. Newman. June 14, 1929. 12 pages.
1291. Studies on the biochemistry of sulphur. II. Further studies on the distinctive reaction for cysteine and cystine. By M. X. Sullivan. June 14, 1929. 8 pages.
1292. Distribution of endemic goiter in the United States as shown by thyroid surveys. By Robert Olesen. June 21, 1929. 25 pages.
1293. Acute rheumatism in childhood and its sequelae. By E. Blanche Sterling. June 21, 1929. 5 pages.
1294. Completeness of reporting of measles, whooping cough, and chicken pox at different ages. Hagerstown morbidity studies: Supplement to Study No. II. By Edgar Sydenstricker and A. W. Hedrich. June 28, 1929. 7 pages.
1295. Some biochemical relationships in a polluted stream. By H. Heukelekian. June 28, 1929. 12 pages.

Supplements to the Public Health Reports

69. Studies on oxidation-reduction. XIII. Preparation of indophenols which may be used as oxidation-reduction indicators. By H. D. Gibbs, W. L. Hall, and W. M. Clark. 1928. 35 pages.
70. The notifiable diseases. Prevalence during 1927 in cities of over 100,000 population 1928. 33 pages.

71. Studies on oxidation-reduction. XIV. Equilibrium potentials of 2,6-dibromobenzenone indophenols-2-sodium sulphonate, 2,6-dibromobenzenone indophenol-3-sodium sulphonate, 2,6-dichlorobenzenone indo-2-chlorophenol, and 2,6-dimethylbenzenone indophenol. By Wallace L. Hall, Paul W. Preisler, and Barnett Cohen. 1928. 26 pages.
72. The notifiable diseases. Prevalence during 1927 in cities of 10,000 to 100,000 population. 1929. 94 pages.
73. The notifiable diseases. Prevalence in States, 1927. 1929. 68 pages.
74. Studies on oxidation-reduction. XV. Potentiometric studies of the amino indophenols: Phenol blue, m-toluylene diamine indophenol, and o-toluidine indophenol. By Barnett Cohen and Max Phillips. 1929. 33 pages.

Public Health Bulletins

179. Studies on physical development and posture. By Louis Schwartz, Rollo Britten, and L. R. Thompson. June, 1928. 124 pages.
180. The rat. Arguments for its elimination and methods for its destruction. By R. H. Creel and C. V. Akin. August, 1928. 10 pages.
181. Studies in illumination. II. Relationship of illumination to ocular efficiency and ocular fatigue among the letter separators in the Chicago post office. By L. R. White, Rollo Britten, and L. R. Thompson. December, 1928. 58 pages.
182. Refractive errors in the eyes of children as determined with a cycloplegic. Results of eye examinations of 1,860 white school children in Washington, D. C. By G. A. Kempf, Selwyn D. Collins, and Bernard L. Jarman. December, 1928. 56 pages.
183. Transactions of the Eighth Annual Conference of State Sanitary Engineers, held at Chicago, Ill., June 4 and 6, 1927. October, 1928. 133 pages.
184. Health departments of States and Provinces of the United States and Canada. Compilation by John A. Ferrell, Wilson G. Smillie, Platt W. Covington, and Pauline A. Mead. April 1, 1929. 727 pages.
185. Physiological response attending exposure to vapors of methyl bromide, methyl chloride, ethyl bromide, and ethyl chloride. By R. R. Sayers, W. P. Yant, and B. G. H. Thomas. March, 1929. 56 pages.
186. Effect of repeated daily exposure of several hours to small amounts of automobile exhaust gas. By R. R. Sayers, W. P. Yant, Edward Levy, and W. B. Fulton. March, 1929. 58 pages.

Hygienic Laboratory Bulletins

153. A study of endemic pellagra in some cotton-mill villages of South Carolina. By Joseph Goldberger, Edgar Sydenstricker, William S. Bean, jr., R. E Dyer, J. D. Reichard, P. M. Stewart, M. C. Edmonds, R. E. Tarbett, Dorothy Wiehl, and Jennie Goddard. January, 1929. 85 pages.

Annual Report

Annual report of the Surgeon General of the United States Public Health Service for the fiscal year 1928. 346 pages.

Miscellaneous Publications

9. The ship's medicine chest and first aid at sea. Compiled and edited by medical officers of the Public Health Service. 1929. 207 pages.[1]

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[1] The edition of this publication for free distribution was sufficient only to supply masters of vessels of the American merchant marine having no physician on board and ships and stations of the Coast Guard, Coast and Geodetic Survey, and the Lighthouse Service where no medical officer is available.

Unnumbered Publications

*National negro health week program. Fifteenth annual observance. 1929. 17 pages. (Out of print.)

*National negro health week poster. Fifteenth annual observance. 1929. (Out of print.)

Venereal Disease Bulletins

No. 87. Status of sex education in the senior high schools of the United States. A survey of sex education in the senior highs of the United States in 1927. 15 pages.

No. 88. Placard—The prevention of venereal diseases.

Reprints from Venereal Disease Information

No. 10. Venereal disease prevalence in Tennessee. By Lida J. Usilton and W. D. Riley. From Venereal Disease Information, Vol. IX, No. 10. 25 pages.

No. 11. Symposium on research in syphilis. By William F. Snow, M. D., Joseph Earle Moore, M. D., Wade H. Brown, M. D., and Thomas Parran, jr., M. D. From Venereal Disease Information, Vol. IX, No. 12. 18 pages.

No. 12. The diagnosis and treatment of chancroid. By H. N. Cole, M. D. From Venereal Disease Information, Vol. X, No. 1. 5 pages.

No. 13. The management of syphilis in general practice. By Joseph Earle Moore, M. D., in collaboration with Harold N. Cole, M. D., J. F. Schamberg, M. D., H. C. Solomon, M. D., Udo J. Wile, M. D., and John H. Stokes, M. D. From Venereal Disease Information, Vol. X, No. 2. 37 pages.

DEATHS DURING WEEK ENDED SEPTEMBER 21, 1929

Summary of information received by telegraph from industrial insurance companies for the week ended September 21, 1929, and corresponding week of 1928. (From the Weekly Health Index, September 25, 1929, issued by the Bureau of the Census, Department of Commerce)

	Week ended Sept. 21, 1929	Corresponding week, 1928
Policies in force	72, 793, 526	71, 693, 704
Number of death claims	12, 589	12, 130
Death claims per 1,000 policies in force, annual rate	9. 0	8. 8

Deaths from all causes in certain large cities of the United States during the week ended September 21, 1929, infant mortality, annual death rate, and comparison with corresponding week of 1928. (From the Weekly Health Index, September 25, 1929, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Sept. 21, 1929		Annual death rate per 1,000, corresponding week, 1928	Deaths under 1 year		Infant mortality rate, week ended Sept. 21, 1929 [2]
	Total deaths	Death rate [1]		Week ended Sept. 21, 1929	Corresponding week, 1928	
Total (64 cities)	5,718	10.2	11.1	649	710	[3] 58
Akron	34			11	2	113
Albany [4]	34	14.8	17.8	0	4	0
Atlanta	64	13.1	15.0	12	7	125
White	37			10	4	
Colored	27	(5)	(5)	2	3	
Baltimore [4]	170	10.7	13.0	29	27	93
White	129			22	19	89
Colored	41	(5)	(5)	7	8	111
Birmingham	56	13.2	15.5	9	11	81
White	29			5	1	75
Colored	27	(5)	(5)	4	10	92
Boston	138	9.0	12.4	13	29	36
Bridgeport	22			5	3	86
Buffalo	102	9.6	12.3	10	16	43
Cambridge	15	6.2	9.6	3	0	54
Camden	27	10.4	7.3	2	2	35
Canton	20	9.0	10.3	3	3	71
Chicago [4]	565	9.4	9.8	46	63	41
Cincinnati	104			12	20	70
Cleveland	149	7.7	8.8	10	12	29
Columbus	76	13.3	12.4	5	9	47
Dallas	40	9.6	12.7	5	4	
White	30			5	4	
Colored	10	(5)	(5)	0	0	
Dayton	40	11.3	14.2	5	11	79
Denver	79	14.0	15.6	7	11	68
Des Moines	23	7.9	7.6	2	2	36
Detroit	261	9.9	9.5	45	39	72
Duluth	28	12.5	9.8	4	1	97
El Paso	37	16.4	15.1	6	13	
Erie	26			2	1	41
Fall River [5]	20	7.8	11.3	0	8	0
Flint	49	17.2	13.7	17	20	207
Fort Worth	27	8.3	10.1	2	4	
White	24			2	4	
Colored	3	(5)	(5)	0	0	
Grand Rapids	23	7.3	10.5	5	5	76
Houston	48			5	4	
White	29			3	4	
Colored	19	(5)	(5)	2	0	
Indianapolis	93	12.7	14.6	17	12	136
White	77			13	7	121
Colored	16	(5)	(5)	4	5	239
Jersey City	49	7.9	9.5	10	8	77
Kansas City, Kans	22	9.7	14.6	0	5	0
White	15			0	4	0
Colored	7	(5)	(5)	0	1	0
Knoxville	26	12.9	19.8	4	7	87
White	17			4	7	98
Colored	9	(5)	(5)	0	0	0
Los Angeles	221			17	18	50
Louisville	71	11.3	10.3	3	5	24
White	52			3	4	28
Colored	19	(5)	(5)	0	1	0
Lowell	19			6	5	136
Lynn	15	7.4	7.9	2	1	55
Memphis	72	19.8	17.6	12	4	141
White	38			6	3	114
Colored	34	(5)	(5)	6	1	188
Milwaukee	112	10.8	9.0	16	6	70
Minneapolis	69	7.9	9.7	4	10	25
Nashville	41	15.4	19.9	4	5	65
White	29			4	2	87
Colored	12	(5)	(5)	0	3	0
New Bedford	17			2	0	43
New Haven	28	7.8	5.8	1	1	15

(Footnotes at end of table)

Deaths from all causes in certain large cities of the United States during the week ended September 21, 1929, infant mortality, annual death rate, and comparison with corresponding week of 1928—Continued

City	Week ended Sept. 21, 1929		Annual death rate per 1,000, corresponding week, 1928	Deaths under 1 year		Infant mortality rate, week ended Sept. 21, 1929
	Total deaths	Death rate		Week ended Sept. 21, 1929	Corresponding week, 1928	
New Orleans	120	14.6	17.9	11	17	55
White	75			4	11	28
Colored	45	(3)	(3)	7	6	118
New York	1,139	9.9	10.4	137	136	56
Bronx Borough	134	7.4	9.1	13	16	38
Brooklyn Borough	378	8.6	8.6	57	44	58
Manhattan Borough	475	14.2	14.4	58	59	71
Queens Borough	106	6.5	7.1	5	9	20
Richmond Borough	46	16.0	16.7	4	8	72
Newark, N. J	92	10.2	9.1	8	4	42
Oakland	59	11.3	13.5	5	3	55
Oklahoma City	26			6	5	120
Omaha	40	9.4	10.8	8	6	94
Paterson	27	9.7	11.2	4	1	71
Philadelphia	384	9.7	11.1	35	49	50
Pittsburgh	140	10.9	11.2	14	17	48
Portland, Oreg	62			4	3	46
Providence	49	8.9	11.7	6	8	53
Richmond	38	10.2	11.3	4	6	56
White	28			3	3	64
Colored	10	(3)	(3)	1	3	41
Rochester	43	6.9	8.1	6	3	51
St. Louis	175	10.8	10.3	20	23	67
St. Paul	48			2	1	21
Salt Lake City [5]	37	14.0	9.9	2	1	31
San Antonio	40	9.6	12.2	6	12	
San Diego	45			4	2	77
San Francisco	121	10.8	14.7	6	5	38
Schenectady	18	10.1	12.9	2	3	64
Seattle	65	8.9	9.3	4	6	42
Somerville	16	8.1	6.6	0	2	0
Spokane	22	10.5	14.9	2	0	52
Springfield, Mass	35	12.2	12.2	4	6	66
Syracuse	48	12.6	14.4	3	2	36
Tacoma	18	8.5	10.9	0	1	0
Toledo	66	11.0	10.4	4	5	37
Trenton	37	13.9	11.3	5	2	91
Utica	25	12.5	19.1	1	0	25
Washington, D. C	122	11.6	10.8	20	16	117
White	75			10	8	85
Colored	47	(5)	(5)	10	8	189
Waterbury	10			1	2	25
Wilmington, Del	25	10.2	10.2	6	1	156
Worcester	44	11.6	11.9	7	3	88
Yonkers	16	6.9	12.1	2	3	47
Youngstown	16	4.8	12.6	4	4	57

[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 72 cities.
[4] Deaths for week ended Friday.
[5] 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.

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Reports for Weeks Ended September 21, 1929, and September 22, 1928

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended September 21, 1929, and September 22, 1928

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928
New England States:								
Maine	2	3	----	8	6	21	0	0
New Hampshire	3	4	----	----	----	18	0	0
Vermont	----	----	----	----	8	1	0	0
Massachusetts	48	53	----	11	20	43	3	4
Rhode Island	4	4	1	----	1	5	0	2
Connecticut	18	26	1	8	4	4	0	1
Middle Atlantic States:								
New York	78	88	[1] 6	[1] 8	46	72	12	24
New Jersey	69	56	1	3	8	18	5	2
Pennsylvania	73	87	----	----	45	102	4	5
East North Central States:								
Ohio	23	28	3	2	46	22	0	0
Indiana	15	16	----	7	5	2	3	0
Illinois	114	95	19	11	19	43	5	2
Michigan	75	56	1	----	50	14	14	4
Wisconsin	17	12	22	35	34	21	0	1
West North Central States:								
Minnesota	12	33	----	3	4	9	0	0
Iowa	5	9	----	----	2	----	0	0
Missouri [2]	6	22	3	3	7	3	1	0
North Dakota	5	4	----	1	5	1	1	0
South Dakota	3	1	----	----	----	----	0	1
Nebraska	5	7	----	----	6	2	0	0
Kansas	21	9	----	3	18	5	4	2
South Atlantic States:								
Delaware	----	----	----	----	1	1	0	0
Maryland [2]	14	29	3	9	2	8	0	0
District of Columbia	7	12	----	1	1	4	0	0
Virginia	----	----	----	----	----	----	----	----
West Virginia	16	12	7	8	1	8	0	0
North Carolina	211	85	----	----	5	11	1	0
South Carolina	54	44	----	342	----	----	0	0
Georgia	39	28	16	164	4	2	3	1
Florida	20	20	1	----	1	----	0	0

[1] New York City only.
[2] Figures for 1929 are exclusive of St. Louis.
[3] Week ended Friday.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended September 21, 1929, and September 22, 1928—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928
East South Central States:								
Kentucky		38					1	1
Tennessee	17	32	36	16	2	1	0	2
Alabama	63	75	7	38	5	5	1	0
Mississippi	57	31		3			1	0
West South Central States:								
Arkansas	7	16	4	13	4	2	1	0
Louisiana	24	17		14	16	2	1	1
Oklahoma [4]	46	67	20	24	6		0	0
Texas	30	19	19	24	1	3	0	0
Mountain States:								
Montana	4	5			5	1	2	2
Idaho	2				2		1	1
Wyoming		10			1		2	0
Colorado	7	5		3	2		0	5
New Mexico	5	6					0	0
Arizona		1			2	3	0	2
Utah [3]	2	3			1		2	1
Pacific States:								
Washington	6	8			2	10	11	1
Oregon	3	9	5	2	3	3	1	1
California	37	64	10	21	32	13	6	1

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928
New England States:								
Maine	1	2	12	14	0	0	2	8
New Hampshire	1	0	5	8	0	0	0	0
Vermont	5	3	9	3	0	0	0	0
Massachusetts	3	25	63	54	0	0	12	12
Rhode Island	0	0	4	6	0	0	2	2
Connecticut	0	2	9	15	0	0	25	3
Middle Atlantic States:								
New York	33	70	70	65	3	0	39	42
New Jersey	3	9	34	24	0	0	13	33
Pennsylvania	12	11	75	101	0	0	42	60
East North Central States:								
Ohio	5	15	62	71	20	3	32	32
Indiana	0	0	30	32	19	8	12	19
Illinois	4	6	177	87	17	5	32	55
Michigan	13	5	89	68	19	6	10	15
Wisconsin	1	2	38	41	9	4	6	10
West North Central States:								
Minnesota	1	34	57	55	2	0	4	10
Iowa	5	3	18	11	4	0	10	5
Missouri [2]	0	2	35	41	24	8	12	36
North Dakota	1	11	4	21	1	0	4	0
South Dakota	0	3		6	0	2	1	1
Nebraska	0	3	13	36	1	3	0	1
Kansas	1	6	35	41	6	4	11	17
South Atlantic States:								
Delaware	0	0		2	0	0	4	1
Maryland [2]	0	28	30	10	0	0	19	41
District of Columbia	0	2	3	4	0	0	2	4
Virginia	10	1						
West Virginia	2	14	44	36	5	4	48	43
North Carolina	4	2	105	59	9	5	27	29
South Carolina	3	0	21	10	1	0	30	53
Georgia	0	1	18	19	0	0	44	51
Florida	0	1	4		0	0	2	4

[2] Figures for 1929 are exclusive of St. Louis.
[3] Week ended Friday.
[4] Figures for 1929 are exclusive of Oklahoma City and Tulsa and for 1928 are exclusive of Tulsa only.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended September 21, 1929, and September 22, 1928—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928	Week ended Sept. 21, 1929	Week ended Sept. 22, 1928
East South Central States:								
Kentucky	0	3	14	55	0	0	15	38
Tennessee	1	2	33	30	0	0	41	60
Alabama	3	3	36	27	0	4	38	35
Mississippi	0	5	21	5	0	1	25	26
West South Central States:								
Arkansas	0	0	10	9	0	1	26	33
Louisiana	0	1	16	2	0	0	10	30
Oklahoma [4]	2	0	8	19	1	0	35	66
Texas	0	1	13	14	3	1	20	4
Mountain States:								
Montana	0	3	7	5	5	2	46	9
Idaho	0	2	6	5	3	0	3	0
Wyoming	0	0		14	0	0	0	1
Colorado	0	2	10	10	2	0	5	8
New Mexico	1	1	3	6	3	0	15	8
Arizona	0	0			0	1	2	1
Utah [3]	3	1	7	6	2	0	3	2
Pacific States:								
Washington	1	16	21	17	7	25	9	9
Oregon	3	0	5	16	2	10	4	3
California	5	4	71	76	22	19	7	18

[3] Week ended Friday.
[4] Figures for 1929 are exclusive of Oklahoma City and Tulsa and for 1928 are exclusive of Tulsa only.

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
July, 1929										
Colorado	4	20			25		1	21	49	21
Massachusetts	15	240	10	3	897		4	303	1	32
August, 1929										
California	30	142	34	13	101	10	29	266	83	87
Georgia	7	88	59	1,474	31	92	1	68	0	226
Illinois	31	391	35	76	342	1	10	346	58	131
Indiana	5	63	29		91		2	190	114	43
Louisiana	0	84	21	285	6	44	1	23	0	102
Maine	1	6	4		46		0	42	0	12
Maryland	3	54	9	4	16	1	2	85	0	101
Minnesota	8	48	8	1	40		4	124	10	20
Missouri	30	68	3	211	44	1	5	91	20	84
New York	78	453		12	385		111	231	16	242
Oklahoma [1]	2	69	57	1,156	39	124	5	69	16	302
Rhode Island	0	17			7		2	16	0	7
Tennessee	4	97	60	1,097	19	32	44	70	7	464
West Virginia	9	53	19		66		17	91	5	131

[1] Exclusive of Oklahoma City and Tulsa.

July, 1929	Cases
Chicken pox:	
Colorado	82
Massachusetts	412
Dysentery:	
Massachusetts	6
German measles:	
Massachusetts	30
Lead poisoning:	
Massachusetts	3
Lethargic encephalitis:	
Massachusetts	2
Mumps:	
Colorado	51
Massachusetts	227
Ophthalmia neonatorum:	
Massachusetts	83
Paratyphoid fever:	
Colorado	1
Rabies in man:	
Massachusetts	1
Rocky Mountain spotted or tick fever:	
Colorado	1
Septic sore throat:	
Massachusetts	20
Tetanus:	
Massachusetts	1
Trachoma:	
Massachusetts	1
Trichinosis:	
Massachusetts	2
Whooping cough:	
Colorado	66
Massachusetts	649

August, 1929	Cases
Actinomycosis:	
California	1
Anthrax:	
Louisiana	1
New York	1
Oklahoma [1]	1
Chicken pox:	
California	148
Georgia	8
Illinois	119
Indiana	19
Maine	9
Maryland	24
Minnesota	35
Missouri	18
New York	232
Oklahoma [1]	5
Rhode Island	8
Tennessee	5
West Virginia	21
Conjunctivitis:	
Georgia	1
Oklahoma [1]	6
Dengue:	
California	1
Georgia	8
Diarrhea:	
Maryland	137
Dysentery:	
California (amebic)	10
California (bacillary)	566
Georgia	35
Illinois	35
Louisiana	11
Maryland	65
Minnesota (amebic)	6
Missouri	1
New York	19
Oklahoma [1]	95
Tennessee	80
Food poisoning:	
California	37
German measles:	
California	16
Illinois	5
Maine	2
Maryland	3
New York	95
Granuloma, coccidiodal:	
California	1
Hookworm disease:	
Georgia	29
Louisiana	4
Oklahoma [1]	1
Impetigo contagiosa:	
Maryland	4
Oklahoma [1]	3
Jaundice (epidemic):	
California	1
Lead poisoning:	
Illinois	10
Leprosy:	
Louisiana	1
Missouri	1
Lethargic encephalitis:	
California	3
Illinois	12
Louisiana	1
Maryland	2
Minnesota	1
New York	19
Tennessee	3
Mumps:	
California	412
Georgia	21
Illinois	94
Indiana	10
Louisiana	1
Maine	28
Maryland	58
Missouri	22
New York	282
Oklahoma [1]	17
Rhode Island	1
Tennessee	15
Ophthalmia neonatorum:	
California	1
Illinois	46
Maryland	1
Missouri	4
New York	7
Oklahoma [1]	1
Rhode Island	1

[1] Exclusive of Oklahoma City and Tulsa.

Paratyphoid fever:	Cases
California	62
Georgia	8
Illinois	6
Maine	2
New York	7
Tennessee	2
Puerperal septicemia:	
Illinois	4
New York	9
Tennessee	1
Rabies in animals:	
California	36
Illinois	2
Louisiana	3
Maryland	3
Missouri	8
New York [2]	8
Rhode Island	10
Rabies in man:	
California	1
Illinois	1
New York	1
Remittent fever:	
Illinois	1
Rocky Mountain spotted or tick fever:	
Oklahoma [1]	1
Septic sore throat:	
Georgia	28
Illinois	2
Maine	4
Maryland	2
Missouri	8
New York	20
Oklahoma, Tennessee	21
Tetanus:	
California	7
Illinois	25
Louisiana	9
Maine	2
Maryland	2
Missouri	7
New York	13
Oklahoma, Tennessee	1
	4

Trachoma:	Cases
California	5
Illinois	6
Minnesota	48
Missouri	36
New York	3
Oklahoma, Tennessee	10
	16
Tularaemia:	
California	4
Georgia	2
Louisiana	1
Minnesota	1
Typhus fever:	
Georgia	12
Maryland	2
Undulant fever:	
California	9
Georgia	1
Illinois	4
Louisiana	1
Maine	1
Maryland	1
Minnesota	3
Missouri	1
New York [2]	10
Oklahoma [1]	1
Vincent's angina:	
Illinois	1
Maryland	12
Maine	6
New York [2]	63
Oklahoma [1]	1
Whooping cough:	
California	557
Georgia	131
Illinois	1,244
Indiana	179
Louisiana	42
Maine	33
Maryland	249
Minnesota	210
Missouri	304
New York	1,225
Oklahoma [1]	51
Rhode Island	16
Tennessee	125
West Virginia	203

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the months of July and August, 1929, by departments of health of certain States to other State health departments

JULY, 1929

Disease	California	Illinois	Kansas	Massachusetts	Minnesota	New Jersey	New York
Chicken pox							1
Diphtheria		2					
Dysentery (amebic)					2		
Gonorrhea					4		
Malaria	2				1		1
Measles							1
Poliomyelitis							1
Scarlet fever							1
Smallpox		4		1			1
Syphilis			5		5		
Tuberculosis	3	4			39		
Typhoid fever	3	2			1	2	2
Undulant fever					1		
Whooping cough							4

[1] Exclusive of Oklahoma City and Tulsa.

[2] Exclusive of New York City.

Notifications regarding communicable diseases sent during the months of July and August, 1929, by departments of health of certain States to other State health departments—Continued

AUGUST, 1929

Disease	California	Illinois	Kansas	Minnesota	New York	Ohio	Vermont
Diphtheria		[1] 2			2		
Gonorrhea				4			
Malaria				1			
Meningitis	1						
Poliomyelitis					4		1
Scarlet fever				1	1		
Smallpox		2		1	1		
Syphilis			8	7			
Trachoma				1			
Tuberculosis	1	4		41		1	
Typhoid fever	2	3		5	1		
Undulant fever	1						
Whooping cough					1		

[1] 1 carrier; 1 suspect.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 95 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 30,555,000. The estimated population of the 89 cities reporting deaths is more than 29,850,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended September 14, 1929, and September 15, 1928

	1929	1928	Estimated expectancy
Cases reported			
Diphtheria:			
46 States	1,246	1,130	
95 cities	382	416	555
Measles:			
45 States	473	574	
95 cities	97	108	
Meningococcus meningitis:			
45 States	111	92	
95 cities	51	55	
Poliomyelitis:			
46 States	153	334	
Scarlet fever:			
46 States	1,238	1,173	
95 cities	323	332	349
Smallpox:			
46 States	180	108	
95 cities	15	5	6
Typhoid fever:			
46 States	883	1,074	
95 cities	129	151	181
Deaths reported			
Influenza and pneumonia:			
89 cities	332	398	
Smallpox:			
89 cities	0	1	
Kansas City, Mo.	0	1	

City reports for week ended September 14, 1929

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

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1920 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population, July 1, 1928, 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	78,600	0	0	0		0	0	0	0
New Hampshire:									
Concord	(1)	0	0	2		0	0	0	0
Nashua	(1)	0	0	0		0	0	0	0
Vermont:									
Barre	(1)	0	0	0		0	0	0	0
Massachusetts:									
Boston	799,200	5	23	8		0	4	0	2
Fall River	134,300	0	2	3		0	0	0	0
Springfield	149,800	4	1	0		0	1	0	1
Worcester	197,600	4	4	0		0	1	1	0
Rhode Island:									
Pawtucket	73,100	0	0	0		0	0	0	0
Providence	286,300	1	4	7		0	0	0	6
Connecticut:									
Bridgeport	(1)	0	4	1		0	0	0	1
Hartford	172,300	0	2	0		0	1	1	4
New Haven	187,900	0	1	0		0	0	0	2
MIDDLE ATLANTIC									
New York:									
Buffalo	555,800	3	11	4		0	4	0	8
New York	6,017,500	15	90	35	2	4	17	19	67
Rochester	328,200	0	4	3		0	1	0	1
Syracuse	199,300	6	3	0		0	0	6	1
New Jersey:									
Camden	135,400	0	2	7		0	1	0	2
Newark	473,600	3	7	19		0	1	9	6
Trenton	139,000	0	2	0		0	0	0	1
Pennsylvania:									
Philadelphia	2,064,200	7	34	10	1	1	1	5	30
Pittsburgh	673,800	13	14	8		0	0	1	21
Reading	115,400	0	2	0		0	0	1	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	413,700	1	6	5		1	0	0	2
Cleveland	1,010,300	12	24	10	1	0	2	1	9
Columbus	299,000	0	3	0		0	3	1	3
Toledo	313,200	0	5	0		0	9	0	2
Indiana:									
Fort Wayne	105,300	0	1	1		0	0	0	0
Indianapolis	382,100	0	5	3		0	1	0	8
South Bend	86,100	0	1	0		0	0	0	1
Terre Haute	73,500	1	1	0		0	0	0	2
Illinois:									
Chicago	3,157,400	20	51	85	1	0	13	7	32
Springfield	67,200	0	0	0		0	2	0	0
Michigan:									
Detroit	1,378,900	7	33	40		2	7	7	12
Flint	148,800	1	3	1		0	0	1	0
Grand Rapids	164,200	1	2	0		0	0	0	2

[1] No estimate of population made.

City reports for week ended September 14, 1929—Continued

Division, State, and city	Population, July 1, 1928, 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	56,500	0	0	0		0	0	0	1
Madison	50,500	1	1	0		0	2	1	0
Milwaukee	544,200	2	8	4		0	3	2	2
Racine	74,400	1	1	0		0	0	0	0
Superior	(1)	0	1	0		0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	116,800	2	0	0		0	1	1	0
Minneapolis	455,900	5	16	2		0	0	5	2
St. Paul	(1)	4	10	2		2	0	1	1
Iowa:									
Davenport	(1)	0	0	0			0	3	
Des Moines	151,900	0	2	0			0	0	
Sioux City	80,000	0	1	4			0	1	
Waterloo	37,100	1	0	0			0	0	
Missouri:									
Kansas City	391,000	1	3	3		0	1	0	8
St. Joseph	78,500	0	1	0		0	0	0	1
St. Louis	848,100		21						
North Dakota:									
Fargo	(1)	1	0	0		0	0	0	0
Grand Forks	(1)	0	0	0			1	0	
South Dakota:									
Aberdeen	(1)	0	0	0			0	0	
Sioux Falls	(1)	0	0	0			0	0	
Nebraska:									
Omaha	222,800	3	10	3		0	0	0	0
Kansas:									
Topeka	62,800	0	1	0		0	0	3	1
Wichita	99,300	0	2	0		0	1	1	2
SOUTH ATLANTIC									
Delaware:									
Wilmington	128,500	0	1	1		0	0	0	3
Maryland:									
Baltimore	830,400	2	17	2		1	1	5	10
Cumberland	(1)	0	0	1		0	0	1	0
Frederick	(1)	0	0	0		0	0	0	0
District of Columbia:									
Washington	552,000	0	8	16		0	0	0	6
Virginia:									
Lynchburg	38,600	0	2	3		0	0	5	1
Norfolk	184,200	0	1	1		0	0	1	2
Richmond	194,400	0	14	13		0	2	0	0
Roanoke	64,600	0	4	0		0	0	0	0
West Virginia:									
Charleston	55,200	0	1	0		0	0	0	0
Wheeling	(1)	1	1	0		0	0	1	1
North Carolina:									
Raleigh	(1)	0	3	6		0	0	0	1
Wilmington	39,100	1	0	12		0	0	1	0
Winston-Salem	80,000	1	2	4		0	0	1	1
South Carolina:									
Charleston	75,900	0	1	0	2	0	0	0	1
Columbia	50,600	0	1	1		0	1	0	2
Georgia:									
Atlanta	255,100	0	5	7	2	0	0	1	0
Brunswick	(1)	0	0	0		0	0	0	0
Savannah	99,900	0	1	3	3	0	0	0	0
Florida:									
Miami	156,700	0	2	3		0	0	2	1
St. Petersburg	53,300								
Tampa	113,400	0	1	2		0	0	0	2

[1] No estimate of population made.

City reports for week ended September 14, 1929—Continued

Division, State, and city	Population, July 1, 1928, 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 SOUTH CENTRAL									
Kentucky:									
Covington	59,000	0	0	1		0	1	0	0
Tennessee:									
Memphis	190,200	0	3	6		0	0	0	8
Nashville	139,600	0	4	0		0	0	0	1
Alabama:									
Birmingham	222,400	1	4	6		0	0	0	2
Mobile	69,600	0	1	1	1	1	0	0	1
Montgomery	63,100	0	2	3			0	0	
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	(1)	0	0	1			0	0	
Little Rock	79,200	0	1	0		0	0	0	0
Louisiana:									
New Orleans	429,400	0	7	3	2	2	2	0	5
Shreveport	81,300	0	1	0		0	0	0	3
Texas:									
Dallas	217,800	0	5	6		0	1	0	2
Fort Worth	170,600	0	2	1		0	1	0	1
Galveston	50,600	0	0	0		0	0	0	0
Houston	(1)	0	4	3		1	0	0	2
San Antonio	218,100	0	2	3		0	0	0	2
MOUNTAIN									
Montana:									
Billings	(1)	0	1	0		0	1	2	1
Great Falls	(1)	2	0	0		0	0	3	0
Helena	(1)	0	0	0		0	0	1	0
Missoula	(1)	0	0	0		0	0	0	0
Idaho:									
Boise	(1)	0	0	0		0	0	0	1
Colorado:									
Denver	294,200	2	15	2		0	6	1	3
Pueblo	44,200	0	1	1		0	0	0	2
New Mexico:									
Albuquerque	(1)	0	0	0		0	0	0	0
Utah:									
Salt Lake City	138,000	3	3	0		1	0	5	1
Nevada:									
Reno	(1)	0	0	0		0	0	0	0
PACIFIC									
Washington:									
Seattle	383,200	5	3	2			1	4	
Spokane	109,100	2	1	0			0	0	
Tacoma	110,500		3						
Oregon:									
Portland	(1)	2	5	1		0	1	3	3
Salem	(1)	2	0	0		0	0	0	0
California:									
Los Angeles	(1)	2	28	4	8	0	3	4	9
Sacramento	75,700	2	2	0		0	0	8	3
San Francisco	585,300	7	13	2		0	12	5	1

[1] No estimate of population made.

City reports for week ended September 14, 1929—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	1	1	0	0	0	0	1	0	0	5	9
New Hampshire:											
Concord	0	1	0	0	0	1	0	0	0	0	4
Nashua	0	0	0	0	0	0	0	0	0	0	8
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	5
Massachusetts:											
Boston	16	18	0	0	0	5	3	5	0	18	157
Fall River	1	1	0	0	0	1	1	0	0	0	13
Springfield	2	0	0	0	0	1	0	0	0	0	30
Worcester	3	0	0	0	0	1	1	0	0	8	35
Rhode Island:											
Pawtucket	0	0	0	0	0	0	0	0	0	0	9
Providence	2	1	0	0	0	4	2	1	1	0	61
Connecticut:											
Bridgeport	2	0	0	0	0	1	0	0	0	0	31
Hartford	1	0	0	0	0	1	1	0	0	0	31
New Haven	1	1	0	0	0	0	2	1	0	2	30
MIDDLE ATLANTIC											
New York:											
Buffalo	6	5	0	0	0	2	2	4	0	19	110
New York	33	11	0	0	0	81	43	24	0	52	1,132
Rochester	2	2	0	0	0	1	1	1	0	4	58
Syracuse	2	0	0	0	0	0	1	0	0	29	42
New Jersey:											
Camden	1	0	0	0	0	1	1	0	0	2	32
Newark	5	2	0	0	0	7	2	0	0	24	74
Trenton	0	0	0	0	0	3	1	0	0	8	31
Pennsylvania:											
Philadelphia	22	7	0	0	0	25	12	8	0	50	419
Pittsburgh	15	6	0	0	0	5	4	1	1	19	161
Reading	1	0	0	0	0	0	1	0	0	2	24
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	5	10	0	0	0	6	2	3	0	9	111
Cleveland	14	13	0	0	0	8	3	1	0	33	170
Columbus	4	1	0	0	0	6	0	2	0	4	78
Toledo	4	0	0	0	0	1	2	1	0	2	66
Indiana:											
Fort Wayne	1	2	0	2	0	0	2	0	0	0	21
Indianapolis	4	0	0	0	0	8	2	0	0	8	71
South Bend	1	0	1	0	0	1	1	0	0	1	16
Terre Haute	1	1	0	0	0	0	0	0	0	0	20
Illinois:											
Chicago	33	65	0	1	0	35	8	7	0	112	576
Springfield	1	0	0	0	0	0	1	1	0	1	18
Michigan:											
Detroit	30	27	0	0	0	29	5	0	0	56	258
Flint	6	8	0	3	0	2	1	0	0	1	20
Grand Rapids	4	1	0	0	0	1	1	0	0	14	29
Wisconsin:											
Kenosha	0	0	0	0	0	0	0	0	0	3	4
Madison	1	0	0	1	0	0	0	0	0	13	----
Milwaukee	11	8	0	0	0	9	0	2	0	69	95
Racine	2	3	0	0	0	1	0	0	0	7	9
Superior	1	2	0	0	0	0	0	0	0	1	11
WEST NORTH CENTRAL											
Minnesota:											
Duluth	5	0	0	0	0	1	0	0	0	5	11
Minneapolis	20	1	0	0	0	4	2	0	0	12	77
St. Paul	7	7	0	0	0	5	1	2	0	24	38
Iowa:											
Davenport	0	1	0	1	----	----	0	0	----	0	----
Des Moines	2	3	0	0	----	----	0	0	----	0	38
Sioux City	0	0	0	0	----	----	0	0	----	3	----
Waterloo	0	3	0	2	----	----	0	0	----	2	----

City reports for week ended September 14, 1929—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.											
Missouri:											
Kansas City	4	7	1	0	0	7	2	7	0	9	86
St. Joseph	0	1	0	1	0	4	0	0	0	0	25
St. Louis	13	------	0	------	------	------	7	------	------	------	------
North Dakota:											
Fargo	1	2	0	0	0	0	0	0	0	1	10
Grand Forks	0	0	0	2	------	------	0	0	------	0	------
South Dakota:											
Aberdeen	1	0	0	0	------	------	0	0	------	4	------
Sioux Falls	1	0	0	1	------	------	0	1	------	0	3
Nebraska:											
Omaha	2	0	0	0	0	0	1	0	0	0	41
Kansas:											
Topeka	1	3	0	1	0	2	0	0	0	3	14
Wichita	2	3	0	0	0	0	1	0	0	0	25
SOUTH ATLANTIC											
Delaware:											
Wilmington	1	0	0	0	0	1	0	0	0	0	34
Maryland:											
Baltimore	6	3	0	0	0	16	10	5	1	26	157
Cumberland	1	0	0	0	0	0	1	0	0	0	2
Frederick	0	0	0	0	0	0	0	0	0	0	6
District of Columbia:											
Washington	6	1	0	0	0	8	4	1	1	4	103
Virginia:											
Lynchburg	0	0	0	0	0	1	1	1	0	23	13
Norfolk	1	0	0	0	0	1	1	0	0	1	------
Richmond	4	3	0	0	0	1	2	0	0	5	41
Roanoke	1	0	0	0	0	1	1	0	0	0	17
West Virginia:											
Charleston	1	1	0	0	0	1	2	1	0	4	28
Wheeling	2	0	0	0	0	0	1	1	0	2	17
North Carolina:											
Raleigh	0	4	0	0	0	0	0	0	1	1	21
Wilmington	0	0	0	0	0	0	0	0	0	1	9
Winston-Salem	2	2	1	1	0	0	1	2	1	7	19
South Carolina:											
Charleston	1	0	0	0	0	0	3	0	0	4	23
Columbia	0	0	0	0	0	0	1	0	0	5	13
Georgia:											
Atlanta	5	8	0	0	0	4	4	7	1	4	99
Brunswick	0	0	0	0	0	1	0	0	0	0	4
Savannah	0	1	0	0	0	3	0	0	0	0	21
Florida:											
Miami	0	2	0	0	0	1	0	2	0	1	23
Tampa	0	2	0	0	0	0	0	0	0	0	26
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	1	0	0	0	2	0	0	0	0	16
Tennessee:											
Memphis	1	5	0	0	0	5	6	4	0	11	76
Nashville	2	1	0	0	0	2	5	5	0	6	28
Alabama:											
Birmingham	4	5	0	0	0	2	5	2	0	2	56
Mobile	0	1	0	0	0	1	0	2	0	0	30
Montgomery	0	1	0	0	------	------	0	0	------	0	------
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	1	0	0	------	------	0	0	------	0	------
Little Rock	2	0	0	0	0	0	2	1	0	0	------
Louisiana:											
New Orleans	2	14	0	0	0	11	4	3	3	1	126
Shreveport	1	1	0	0	0	0	1	0	0	0	26

City reports for week ended September 14, 1929—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL—continued											
Texas:											
Dallas	2	3	1	0	0	3	2	2	1	6	41
Fort Worth	1	2	0	0	0	0	1	1	0	0	25
Galveston	0	0	0	0	0	1	0	1	0	0	13
Houston	1	2	0	0	0	2	0	4	0	0	66
San Antonio	0	3	0	0	0	10	0	2	0	0	44
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	1	8
Great Falls	0	0	1	0	0	0	0	4	0	0	5
Helena	0	0	0	0	0	0	0	1	0	0	5
Missoula	0	2	0	1	0	0	1	1	0	0	1
Idaho:											
Boise	0	0	0	0	0	0	0	0	0	0	5
Colorado:											
Denver	4	1	1	0	0	10	2	0	0	10	59
Pueblo	0	0	0	0	0	0	1	1	1	0	15
New Mexico:											
Albuquerque	0	0	0	0	0	2	1	1	0	2	5
Utah:											
Salt Lake City	1	5	0	0	0	1	2	1	0	6	29
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	9
PACIFIC											
Washington:											
Seattle	4	10	0	0	-------	-------	2	0	--------	9	--------
Spokane	3	2	0	0	-------	-------	1	0	--------	7	--------
Tacoma	1	-------	1	-------	-------	-------	0	-------	--------	--------	--------
Oregon:											
Portland	4	0	4	0	0	3	2	0	0	0	50
Salem	0	0	0	2	0	0	0	0	0	2	--------
California:											
Los Angeles	9	6	1	3	0	17	3	2	0	26	204
Sacramento	1	0	0	0	0	3	0	2	1	0	31
San Francisco	6	10	1	0	0	8	1	4	0	10	133

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	0	0	0	0	0	4	4	0
Worcester	1	0	0	0	0	0	1	0	0
Rhode Island:									
Providence	0	0	0	0	0	0	0	2	0
MIDDLE ATLANTIC									
New York:									
Buffalo	1	0	0	0	0	0	1	7	1
New York	12	4	1	2	0	0	18	5	6
Rochester	0	0	0	0	0	0	0	1	0
Syracuse	0	0	0	0	0	0	1	0	1
New Jersey:									
Newark	1	0	0	0	0	0	0	0	0
Pennsylvania:									
Philadelphia	2	3	2	1	0	0	1	2	0
Pittsburgh	0	1	0	1	0	0	0	2	0

City reports for week ended September 14, 1929—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	1	0	0	0	0	2	1	0
Indiana:									
Indianapolis	0	0	0	0	0	0	0	3	0
South Bend	0	0	0	0	0	0	0	1	0
Illinois:									
Chicago	5	2	0	0	1	0	4	0	0
Michigan:									
Detroit	5	6	1	1	0	0	3	6	2
Wisconsin:									
Milwaukee	1	1	0	0	0	0	1	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	1	0	0	0	0	0	1	0	0
Iowa:									
Des Moines	0	0	0	0	0	0	0	3	0
Missouri:									
Kansas City	0	1	0	0	0	0	1	0	0
St. Joseph	1	0	0	0	0	0	0	0	0
North Dakota:									
Fargo	4	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	1	1	1	3	0	0	2	1	0
Virginia:									
Richmond	0	0	0	0	0	2	0	2	0
North Carolina:									
Raleigh	0	0	0	0	3	1	0	0	0
South Carolina:									
Charleston	0	0	0	0	0	1	0	0	0
Columbia	0	0	0	0	0	1	0	0	0
Georgia:									
Atlanta	0	0	0	0	2	1	0	0	0
Savannah [1]	0	0	0	0	1	1	0	1	0
Florida: [1]									
Miami	0	0	0	0	1	2	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Covington	0	2	0	0	0	0	0	0	0
Tennessee:									
Memphis	1	0	0	0	0	0	0	0	0
Nashville	2	0	1	0	0	0	0	0	0
Alabama:									
Birmingham	0	0	0	1	0	0	0	0	0
Mobile	0	0	0	0	0	1	0	0	0
Montgomery	0	0	0	0	0	0	0	1	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	0	0	0	0	1	1	0	0	0
Shreveport	0	0	0	0	0	1	0	0	0
Texas:									
Galveston	0	0	0	0	0	1	0	0	0
Houston	0	0	0	0	0	1	0	0	0
MOUNTAIN									
Montana:									
Helena	1	1	0	0	0	0	0	0	0
Colorado:									
Denver	1	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	6	2	0	0	0	0	1	0	0
PACIFIC									
Washington:									
Seattle	1	0	0	0	0	0	0	0	0
California:									
Los Angeles	0	1	0	1	0	0	1	2	1
Sacramento	2	0	0	0	0	0	1	0	0
San Francisco	1	0	0	0	1	0	1	0	0

[1] Typhus fever: 3 cases; 2 cases at Savannah, Ga., and 1 case at Tampa, Fla.

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended September 14, 1929, compared with those for a like period ended September 15, 1928. The population figures used in computing the rates are approximate estimates, authoritative figures for many of the cities not being available. The 98 cities reporting cases have an estimated aggregate population of more than 31,000,000. The 91 cities reporting deaths have nearly 30,000,000 estimated population. 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, August 11 to September 14, 1929—Annual rates per 100,000 population, compared with rates for the corresponding period of 1928 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Aug. 17, 1929	Aug. 18, 1928	Aug. 24, 1929	Aug. 25, 1928	Aug. 31, 1929	Sept. 1, 1928	Sept. 7, 1929	Sept. 8, 1928	Sept. 14, 1929	Sept. 15, 1928
98 cities	62	55	61	65	62	[2] 57	[3] 64	51	[4] 66	[5] 75
New England	38	48	63	62	45	37	[6] 51	34	48	87
Middle Atlantic	59	55	58	66	54	59	45	49	41	58
East North Central	86	59	69	67	75	[2] 61	85	51	95	67
West North Central	23	57	25	65	25	51	[7] 39	70	[8] 39	98
South Atlantic	47	67	75	86	90	73	[9] 92	48	133	[5] 113
East South Central	81	49	54	49	115	35	75	42	115	154
West South Central	126	45	146	65	142	101	138	77	63	142
Mountain	44	27	26	44	17	44	70	53	26	35
Pacific	32	46	30	41	27	20	35	49	[10] 21	49

MEASLES CASE RATES

98 cities	24	37	20	29	14	[2] 22	[3] 13	20	[4] 17	[5] 18
New England	29	64	38	85	20	90	[6] 24	55	16	39
Middle Atlantic	15	40	13	21	8	16	7	18	12	15
East North Central	35	39	33	31	22	[2] 28	16	24	20	24
West North Central	13	22	8	16	8	4	[7] 2	2	[8] 8	14
South Atlantic	15	33	0	34	13	4	[9] 2	6	7	[5] 12
East South Central	0	28	14	14	7	14	14	0	7	14
West South Central	24	28	4	0	8	0	4	4	12	0
Mountain	52	44	52	9	44	18	26	35	61	44
Pacific	47	8	40	31	20	13	47	28	[10] 42	13

SCARLET FEVER CASE RATES

98 cities	39	30	41	34	41	[2] 32	[3] 52	37	[4] 55	[5] 57
New England	50	39	45	30	38	64	[6] 94	46	52	78
Middle Atlantic	17	21	15	18	16	14	25	18	16	28
East North Central	50	37	62	44	63	[2] 32	69	44	90	88
West North Central	40	61	56	49	44	55	[7] 63	39	[8] 76	68
South Atlantic	73	17	34	34	45	33	[9] 64	50	47	[5] 45
East South Central	14	14	68	63	34	91	41	70	95	105
West South Central	40	16	67	53	75	45	36	57	95	45
Mountain	78	27	44	62	61	35	17	27	70	27
Pacific	55	36	52	33	47	31	80	59	[10] 74	64

[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, 1929 and 1928, respectively.
[2] South Bend, Ind., not included.
[3] Pawtucket and Providence, R. I., Topeka, Kans., and Brunswick, Ga., not included.
[4] St. Louis, Mo., and Tacoma, Wash., not included.
[5] Lynchburg, Va., not included.
[6] Pawtucket, and Providence, R. I., not included.
[7] Topeka, Kans., not included.
[8] St. Louis, Mo., not included.
[9] Brunswick, Ga., not included.
[10] Tacoma, Wash., not included.

Summary of weekly reports from cities, August 11 to September 14, 1929—Annual rates per 100,000 population, compared with rates for the corresponding period of 1928—Continued

SMALLPOX CASE RATES

	Week ended—									
	Aug. 17, 1929	Aug. 18, 1928	Aug. 24, 1929	Aug. 25, 1928	Aug. 31, 1929	Sept. 1, 1928	Sept. 7, 1929	Sept. 8, 1928	Sept. 14, 1929	Sept. 15, 1928
98 cities	7	1	3	2	4	[2] 1	[3] 4	1	[4] 3	[5] 1
New England	0	0	0	0	0	0	[6] 0	0	0	0
Middle Atlantic	3	0	0	0	0	0	0	0	0	0
East North Central	16	1	4	5	10	[2] 1	10	1	4	0
West North Central	4	0	6	0	4	0	[7] 2	4	[8] 11	4
South Atlantic	0	0	0	0	0	0	[9] 0	0	2	[5] 0
East South Central	7	0	0	0	0	0	0	0	0	0
West South Central	0	0	8	0	4	0	0	0	0	4
Mountain	9	0	26	9	0	0	9	9	9	9
Pacific	12	3	17	0	15	5	15	8	[10] 8	3

TYPHOID FEVER CASE RATES

98 cities	20	27	30	31	27	[2] 29	[3] 18	24	[4] 22	[5] 28
New England	11	16	27	16	29	23	[6] 3	16	16	14
Middle Atlantic	19	17	34	23	27	18	20	25	18	29
East North Central	5	18	12	18	13	[2] 15	13	13	10	14
West North Central	6	41	13	25	23	39	[7] 12	20	[8] 25	25
South Atlantic	39	36	51	52	52	46	[9] 34	36	34	[5] 39
East South Central	122	98	102	231	102	175	54	105	88	140
West South Central	47	97	91	53	51	73	16	28	51	28
Mountain	61	35	70	62	17	44	44	80	70	18
Pacific	17	26	5	26	12	26	15	13	[10] 21	38

INFLUENZA DEATH RATES

91 cities	3	3	3	4	2	[2] 3	[3] 3	3	[10] 3	[5] 5
New England	0	2	2	2	0	0	[6] 0	0	0	0
Middle Atlantic	2	0	3	3	2	3	2	2	2	4
East North Central	2	4	4	3	2	[2] 3	6	2	2	5
West North Central	3	0	0	0	0	3	[7] 0	3	6	15
South Atlantic	0	0	2	10	2	4	[9] 4	8	2	[5] 8
East South Central	22	0	0	0	0	8	7	23	7	23
West South Central	12	29	8	17	4	4	0	8	12	8
Mountain	17	0	9	0	9	18	0	0	9	0
Pacific	3	10	0	3	0	3	3	7	[10] 0	3

PNEUMONIA DEATH RATES

91 cities	57	55	54	58	55	[2] 56	[3] 58	58	[10] 55	[5] 65
New England	52	37	25	44	50	30	[6] 46	48	36	62
Middle Atlantic	71	66	60	68	61	61	75	56	66	69
East North Central	35	42	47	41	51	[2] 50	44	60	47	64
West North Central	33	46	48	52	33	46	[7] 53	34	45	64
South Atlantic	62	59	73	61	56	75	[9] 64	71	52	[5] 70
East South Central	89	77	37	115	52	100	74	69	89	38
West South Central	81	58	69	87	101	67	32	58	57	71
Mountain	35	62	52	44	44	53	52	44	70	44
Pacific	75	61	52	51	30	40	33	78	[10] 46	61

[2] South Bend, Ind., not included.
[3] Pawtucket and Providence, R. I., Topeka, Kans., and Brunswick, Ga., not included.
[4] St. Louis, Mo., and Tacoma, Wash., not included.
[5] Lynchburg, Va., not included.
[6] Pawtucket and Providence, R. I., not included.
[7] Topeka, Kans., not included.
[8] St. Louis, Mo., not included.
[9] Brunswick, Ga., not included.
[10] Tacoma, Wash., not included.

Number of cities included in summary of weekly reports and aggregate population of cities of each group, approximated as of July 1, 1929 and 1928, 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	
			1929	1928	1929	1928
Total	98	91	31, 568, 400	31, 052, 700	29, 995, 100	29, 498, 600
New England	12	12	2, 305, 100	2, 273, 900	2, 305, 100	2, 273, 900
Middle Atlantic	10	10	10, 809, 700	10, 702, 200	10, 809, 700	10, 702, 200
East North Central	16	16	8, 181, 900	8, 001, 350	8, 181, 900	8, 001, 300
West North Central	12	9	2, 712, 100	2, 673, 300	1, 736, 900	1, 708, 100
South Atlantic	19	19	2, 783, 200	2, 732, 900	2, 783, 200	2, 732, 900
East South Central	6	5	767, 900	745, 500	704, 200	682, 400
West South Central	8	7	1, 319, 100	1, 289, 900	1, 285, 000	1, 256, 400
Mountain	9	9	598, 800	590, 200	598, 800	590, 200
Pacific	6	4	2, 090, 600	2, 043, 500	1, 590, 300	1, 551, 200

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended September 7, 1929.—The Department of Pensions and National Health reports cases of certain communicable diseases in Canada for the week ended September 7, 1929, as follows:

Province	Cerebro-spinal fever	Influenza	Polio-myelitis	Small-pox	Typhoid fever
Prince Edward Island					
Nova Scotia					
New Brunswick					10
Quebec		1			35
Ontario	3		49	4	33
Manitoba			1		3
Saskatchewan				3	6
Alberta	1		1		3
British Columbia			2	2	1
Total	4	1	53	9	91

Quebec Province—Communicable diseases—Week ended September 14, 1929.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended September 14, 1929, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Poliomyelitis	12
Chicken pox	2	Scarlet fever	48
Diphtheria	35	Tuberculosis	27
German measles	2	Typhoid fever	8
Lethargic encephalitis	1	Whooping cough	89
Measles	13		

CZECHOSLOVAKIA

Communicable diseases—July, 1929.—During the month of July, 1929, certain communicable diseases were reported in Czechoslovakia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	17	1	Puerperal fever	27	13
Cerebrospinal meningitis	13	5	Rabies	1	1
Diphtheria	824	49	Scarlet fever	1,185	23
Dysentery	33	1	Trachoma	209	
Malaria	125		Typhoid fever	517	43
Paratyphoid fever	35	2	Typhus fever	2	

GIBRALTAR

Vital statistics—Year 1928.—During the year 1928, 366 births were reported in Gibraltar, giving a rate per 1,000 population of 23.3. There were 293 deaths, the rate per 1,000 being 17.4. The infant mortality rate was 122.9 per 1,000 births.

Cases of certain communicable diseases, with deaths from these diseases, were reported for the year 1928 as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis	1		Measles	961	11
Chicken pox	29		Pneumonia	134	30
Diphtheria	20	1	Puerperal fever	1	
Dysentery	5		Scarlet fever	3	
Erysipelas	30	2	Tuberculosis (pulmonary)	30	26
Gastro-enteritis	14	11	Typhoid fever	6	1
German measles	1		Venereal disease	7	
Influenzal pneumonia	10	1			

ITALY

Communicable diseases—Four weeks ended July 7, 1929.—During the four weeks ended July 7, 1929, communicable diseases were reported in the Kingdom of Italy as follows:

Disease	June 10–16		June 17–23		June 24–30		July 1–7	
	Cases	Communes affected	Cases	Communes affected	Cases	Communes affected	Cases	Communes affected
Anthrax	22	21	35	28	58	44	48	35
Cerebrospinal meningitis	19	18	20	20	6	6	9	9
Chicken pox	165	119	223	107	190	92	148	72
Diphtheria	263	169	261	149	273	156	273	168
Dysentery	11	8	11	8	14	11	18	14
Lethargic encephalitis			4	4	2	2	6	6
Measles	2,000	321	2,019	353	1,818	333	1,651	342
Poliomyelitis	12	10	21	15	42	18	42	32
Scarlet fever	335	123	286	123	282	102	314	117
Smallpox			2	2				
Typhoid fever	296	165	446	246	424	241	631	324

MEXICO

Tampico—Communicable diseases—August, 1929.—During the month of August, 1929, certain communicable diseases were reported in Tampico, Mexico, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria	4	2	Scarlet fever	1	
Enteritis		43	Tuberculosis	94	23
Malaria	94	19	Typhoid fever	12	2

NEW ZEALAND

Vital statistics—Years 1928 and 1927.—During the year 1928, 27,000 births were registered in New Zealand, as compared with 27,681 in 1927. The birth rate for 1928 was 19.6 per 1,000 population. There were 11,811 deaths reported during the year 1928, which was an increase of 198 over the number for 1927.

Deaths from the following causes were reported during the year 1928:

Cause of death	Number	Cause of death	Number
Accidents (all)	744	Hernia and intestinal obstruction	100
Apoplexy	643	Influenza	242
Appendicitis	107	Maternal mortality	134
Bright's disease	455	Measles	12
Cancer	1,374	Pneumonia	1,027
Diabetes	167	Scarlet fever	55
Diarrhea and enteritis	110	Senility	544
Diphtheria	72	Tuberculosis	699
Diseases of the arteries	394	Typhoid fever	16
Epilepsy	60	Violence	956
Heart disease	2,315	Whooping cough	26

The numbers of deaths due to automobile accidents, excluding those caused by collisions between street cars or railroad trains and automobiles, for the years 1924 to 1928, are as follows:

	Deaths		Deaths
1924	94	1927	138
1925	108	1928	176
1926	149		

PORTO RICO

San Juan—Communicable diseases—Five weeks ended August 24, 1929.—During the five weeks ended August 24, 1929, cases of certain communicable diseases were reported in San Juan, P. R., as follows:

Disease	Cases	Disease	Cases
Diphtheria	3	Tetanus	2
Dysentery	1	Tuberculosis	71
Malaria	8	Typhoid fever	3
Puerperal fever	3	Whooping cough	1
Syphilis	17		

TRINIDAD (BRITISH WEST INDIES)

Port of Spain—Vital statistics (comparative)—July, 1929.—The following statistics for the month of July for the years 1925 to 1929 are taken from a report issued by the Public Health Department of Port of Spain, Trinidad:

Month of July

	1925	1926	1927	1928	1929
Number of births	150	171	110	163	178
Birth rate per 1,000 population	27.6	31.2	19.9	29.4	31.6
Number of deaths	120	135	150	140	150
Death rate per 1,000 population	22.1	24.6	27.2	25.2	26.6
Deaths under 1 year	31	24	16	30	30
Infant mortality rate per 1,000 births	206.7	140.4	145.4	184.1	168.5

VIRGIN ISLANDS

Communicable diseases—August, 1929.—During the month of August, 1929, cases of certain communicable diseases were reported in the Virgin Islands, as follows:

St. Thomas and St. John:	Cases
Chancroid	3
Gonorrhea	6
Sprue	2
Syphilis	4
Tuberculosis	3
Uncinariasis	46

St. Croix:	Cases
Gonorrhea	1
Leprosy	1
Syphilis	3
Tuberculosis	2

YUGOSLAVIA

Communicable diseases—August, 1929.—During the month of August, 1929, certain communicable diseases were reported in Yugoslavia, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	142	17	Rabies	3	3
Cerebrospinal meningitis	7	8	Scarlet fever	1,029	178
Diphtheria	341	36	Tetanus	37	16
Dysentery	325	33	Typhoid fever	352	26
Measles	137	10	Typhus fever	7	2
Poliomyelitis	2				

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

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

CHOLERA

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

Place		Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	Week ended— July, 1929 6	13	20	27	August, 1929 3	10	17	24	31	September, 1929 7	14
Ceylon	C	4			3												
	D	4			3												
Colombo	C			1	3	1											
	D				3	1											
China:																	
Amoy	C					4	1	2	4		1						
Canton	C		3	3	2	10	3	1		2	1	2	2			1	
	D			3	1	5	3	1		1	1		2			1	
Manchuria:																	
Kwantung—Dairen	C											1					
Newchwang	C															P	
Shanghai	C						1		1				797	500	483	360	139
	D								1	2	4	24	41	29	30	23	
Swatow	C					P											
	D					4	2	1	3	1	2	5	3	2	1		
India	C	7,627	9,046	18,521	30,616	29,449	7,315	6,946	8,271	9,549							
	D	4,425	4,997	11,069	20,311	19,910	4,783	4,431	5,166	4,963							
Bassein	D	6	45	118	38	2					3		3				
Bombay	C		6	3		2					1	1					
	D	1	2		2	2					1						
Calcutta	C	261	552	788	924	354	82	69	59	65	65		64				
	D	144	307	461	605	176	41	29	59	28	24	28	36	18	13	15	
Karachi	C											1	3	6	1	4	
Madras	C	9			1				1								
	D	4							1	1							
Moulmein	D	1	7	6	31	5			1								
Negapatam	C	3				1			1								
Rangoon	C	13	15	8	13	8			1		1						
	D	6	37	10	7	8			1		1						
Tuticorin	C	6				34	4	2									
	D	4				30		2									
Vizagapatam	D								1								

India (French):																	
Chandernagor	C		3	3	3	3	1	1				1					
	D		3	1	3	3	1			1							
Karikal	C	88	20	3								1					
	D	71	15	3													
Pondicherry Province	C	86	46		3	3											
	D	74	38		3	3											
India: Portuguese	C												1				
	D												1				
Indo-China (see also table below):																	
Pnompenh	C	42	13	15	14	11	2	2	3				1	2		2	
	D	36	10	9	10	4	1	1	2	1			1	2		2	
Saigon and Cholon	C		12	13	71	188	0	6	1	2	2						
	D		2	8	37	139	8	4	1	1	2						
Japan:																	
Kobe	C												P	2	4		
Osaka	C												1	4	18		
Shimonoseki	C													P	2		
Siam	C	165	397	619	619	469	214	49	54	54	123	29	13		12		
	D	117	260	404	436	285	112	38	26	26	80	17	10		11		
Anthoang	C	3								4				10			
	D	2								4				3			
Ayudhaya	C	4	1	29	2	25			6	11		2					
	D	4	1	19		11			3	8							
Bangkok	C	61	38	111	131	30	2	2	1	2		2		4	1		
	D	36	21	74	77	13		1						1	1		
Chaxoengsao	C	1			1												
	D	1			1												
Dhannapuri	C	3		17													
	D	1		7													
Lobpuri	C	3		1										2	3		
	D	1		1										2	3		
Nagara Pathom	C	2		36	13												
	D	2		20	10												
Singhapuri	C	1															
	D	1															
Smud Prakar	C	1															
Smud Songram	C								2	1							
	D								2	1							
Sridharmaraj Province [1]	C										2	13					
	D										2	11					

[1] There were 98 cases of cholera with 16 deaths in Nagara Sridharmaraj Province, Siam, from May 16 to July 7, 1929.

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

CHOLERA—Continued

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

Place		Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	Week ended— July, 1929 6	13	20	27	August, 1929 3	10	17	24	31	September, 1929 7	14
On vessel:																	
S. S. Angby, at Saigon-Cholon	C					1											
	D					1											
S. S. Cap. St. Jacques, at Singapore, from Saigon-Cholon	C						P										
S. S. Ekma, at Penang, from Singapore	C	P															
S. S. Elephanta, at Penang, from Calcutta	C		P														
S. S. Erinpura, at Madras	C				2												
S. S. Media, at Colombo, from Calcutta	C				1												
S. S. Saka Maru, at Calcutta	C				6												
S. S. Shinsei	D															3	
S. S. Tilawa, at Penang, from Singapore	C		P														
S. S. Tokushima, at Hong Kong	C					2											
	D					2											
S. S. Texas Maru, at Nagasaki from Shanghai	C												1				

Place		February, 1929	March, 1929	April, 1929	May, 1929	June, 1929 1–10	11–20	21–30	July, 1929 1–10	11–20	21–31	August, 1929 1–10	11–20	21–31
Indo-China (French) (see also table above):														
Annam	C		6	20	[1] 20				2	5	2		3	14
Cambodia	C	69	29	84	[1] 215				55	71	60		21	14
Cochin-China	C	223	183	88	[1] 123				146	123	46		45	15
Laos	C								1		12			
Tonkin	C				5	4								

[1] Reports incomplete.

PLAGUE

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

Place		Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	Week ended— July, 1929 6	July, 1929 13	July, 1929 20	August, 1929 27	August, 1929 3	August, 1929 10	August, 1929 17	August, 1929 24	September, 1929 31	September, 1929 7	September, 1929 14	September, 1929 21
Algeria:																		
Algiers	C															1	1	
Philippeville	C									3	3							
Argentina:																		
Buenos Aires	C		2	1														
	D		2															
Rosario	C		31	5														
Azores: St. Michaels Island	C		1						1									
Belgian Congo:																		
Blukwa	C					3												
	D					3												
Buki	C						1	1										
	D						1	1										
Djugu	C	4			2	3				5			1					
	D	1			3	3				5			1					
Rekwa	C						2											
	D						2											
Brazil: Porto Alegre	C			1														
British East Africa (see also table below): Uganda	C	112	130	231	450	1,437	255	357	393	432	296	270						
	D	108	124	219	409	1,072	220	359	301	319	263	235						
Canary Islands: Tenerife	D							1										
Laguna	C				1													
Ceylon:																		
Colombo	C	4	4	5	7	2		P	P							1		
	D	3	1	4	6	3										1		
Plague-infected rats		2		1				1		5				1	7			
Galle	C							1	1	1					1			
	D							1	1	1					1			
Kandy	C													1	1			
	D													1	1			
Matara	C							7	4	1								
	D							3	3	5								

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

PLAGUE—Continued

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

Place		Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	Week ended— July, 1929: 6	13	20	August, 1929: 27	3	10	17	24	September, 1929: 31	7	14	21
China:																		
Amoy	C										P							
Foochow	C									P		P						
Hainan	C	1														1		
Hong Kong	C													1		1		
	D													1				
Plague-infected rats														3		1		
Manchuria—Tungliao District	C									P	13	3						
Suyuan Province	C	1																
Dutch East Indies:																		
Java—																		
Batavia and West Java	C	70	64	63	58	47		12	15	42	33	33						
	D	69	65	63	56	47		11	16	41	33	32						
Plague-infected rats		4	5	8														
East Java and Madura	C		3															
	D		3															
Surabaya	C					3	2	5	4									
	D					3	2	5	4									
Ecuador (see table below).																		
Egypt:																		
Alexandria	C				1	1	2		3	2	1		1	3	3	2	4	2
	D					1	1		1	1		1			1	1	2	1
Assuan	C							1	1	2							1	
	D							1	1	2								
Beheira	C									2								
	D									2								
Beni Suef	C	4	2	7		6	1	1	1	1	1						1	
	D	1	2	2		2												
Dakahlieh	C				9	1				1							2	
	D				1								1				2	
Gharbieh	C						1	5	1	2			1					
	D							1					1					
Girga	C						2	1										
Kena	C						1	1										
	D						1	1										

Menufieh Province	C									3								
Miniah	C								4	3			1					
Port Said	C			2	3	2	1	1	1		2	1	2	1	2			
	D			1	2	1	1			1	1		3		3			
Suez	C	1	2							1								
Greece (see also table below):																		
Patras	C														1		1	
Piraeus	C														1	1	1	
Hawaii: Hamakua—Kukuihaele—Plague-infected rats					6	1												
India	C	16,570	16,011	6,884	1,394	677	222	366	507	717								
	D	12,064	12,592	5,623	1,205	414	120	236	312	391								
Bassein	C			1				3		6	4	3	2	4	2	1		
	D	3	6	2	2	4	1				5	3	2	4	1	1		
Bombay	C	4	8	8	1						1				1			
	D	4	6	6	1	4					1							
Plague-infected rats		38	57	81	44	35	6	7	4	6	7			3	9			
Madras Presidency	C	333	132	38	64	85	43		54		62							
	D	189	80	14	40	38	26		26		27							
Rangoon	C	4	12	11	2		2			4	5	4						
	D	4	9	15	3	9	3	3	8	4	5	2		2	4	2		
Plague-infected rats		11	15	10	5	6	4	2	3					10	7	6		
Indo-China (see also table below):																		
Pnompenh	C	5	10	8	5	4	5		2		1	5	2		1	1		
	D	3	10	8	3	3	5			3	1	5	2		1	1		
Saigon and Cholon	C	1				1	5			1	2	1		1		1		
	D									1	2	1		1				
Tourane	C	5																
Iraq:																		
Baghdad	C	10	11	8	14	12		1				1	1					
	D	3	3	7	5	2												
Plague-infected rats		22	14	2	1													
Diyalah Liwa	C			7	12	1	1											
	D			7	7													
Naudham	C					1		1										
Japan: Osaka—Plague-infected rats					2													
Madagascar (see also table below):																		
Tamatave	C				P	2	2	2		1								
	D	2	1	1		2												
Plague-infected rats						4												
Morocco	C		106	31	42	16	3	21	15					4	1			
	D		73	16	4	5		11	6									
Nigeria: Lagos	C	11	4	8	5	2			1			1	2	6		4		
	D	11	4	8	4	1			1			1	2	5		4		
Plague-infected rats		50	18	6	8	4	2	2	5	4	3	8						
Peru (see table below).																		
Senegal (see table below).																		
Siam	C	9	9	10	9	1			4									
	D	9	8	8	5	1			3									
Bangkok	C	1			2				1			3				1		
	D	1			1				1			3				1		
Nagara Pathom	C	3	4	2	3													
	D	2	4	2	2													

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

PLAGUE—Continued

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

Place		Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	Week ended— July, 1929			August, 1929					September, 1929			
							6	13	20	27	3	10	17	24	31	7	14	21
Straits Settlements: Singapore	C	1		1													1	
	D	1		1	1												1	
Tunisia: Tunis	C							P	P	P					4	4	2	
Turkey:																		
Adalia	C											1						
Constantinople	C					P			2									
Union of Socialist Soviet Republics:																		
Caucasia	C					1	3	1		3		2						
	D					1	3					1						
Ural–Kirghiz	C					4												
	D					4												
Union of South Africa:																		
Cape Province	C		1	2					3									
	D		1	1					2									
Orange Free State	C	2	3	4														
	D		2	1														
Transvaal	C		8															
	D		8															
Uruguay: Montevideo	C		4															
On vessel:																		
S. S. Chaban, at Port Said, from Jaffa	C													1				
	D													1				
S. S. Chenonceaux, at Singapore, from Colombo	C		1															
	D		1															
S. S. Tokio, at Shanghai, from Singapore	C									1								
	D									1								
S. S. Ganzan Maru, at Osaka, from Haipong	C				1													
S. S. Seigo Maru, at Osaka, from Bombay—Plague-infected rats					1													
S. S. Soudades, at Hamburg, from Rosario, Argentina—Plague-infected rats				2														
S. S. Sumatra, at Osaka, from Bombay	C			1	1													

Place		March, 1929	April, 1929	May, 1929	June, 1929	July, 1929	August, 1929
British East Africa (see also table above):							
Kenya	C	10	4	22	69	------	------
Uganda	C	121	282	------	1,215	1,203	------
	D	113	264	------	932	973	------
Ecuador: Guayaquil	C	26	19	2	------	1	6
	D	4	5	1	------	------	1
Plague-infected rats		14	13	3	1	------	4
Greece	C	------	1	------	------	3	------
	D	------	------	------	------	1	------
Indo-China (see also table above)	C	3	13	------	------	42	------
Madagascar (see also table above)	C	196	92	------	------	14	------
	D	194	88	------	------	14	------
Ambositra Province	C	90	8	------	------	------	------
	D	90	8	------	------	------	------
Antisirabe Province	C	13	------	------	------	2	------
	D	13	------	------	------	2	------
Itasy Province	C	8	2	------	------	------	------
	D	7	2	------	------	------	------
Moramanga Province	C	5	3	------	------	------	------
	D	5	3	------	------	------	------
Tananarive Province	C	120	78	------	11	13	------
	D	119	74	------	11	13	------
Peru	C	35	------	10	16	11	------
	D	13	------	5	8	3	------
Senegal:							
Baol [1]	C	6	1	21	43	22	14
	D	3	1	6	18	9	3
Dakar [1]	C	------	6	17	67	62	45
	D	------	4	11	45	45	39
Louga [1]	C	------	------	------	------	59	95
	D	------	------	------	------	39	49
Rufisque [1]	C	------	------	------	------	22	------
	D	------	------	------	------	7	------
Thies [1]	C	4	20	6	10	61	30
	D	3	20	3	6	34	21
Tivaouane [1]	C	------	------	22	93	161	116
	D	------	------	10	50	96	77

[1] Incomplete reports.

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

SMALLPOX

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

Place		Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	Week ended— July, 1929 6	13	20	27	August, 1929 3	10	17	24	31	September, 1929 7	14	21
Algeria:																		
Algiers	C		3	5	5	6	1	2	2	2		1						
Cherchell	C	21	42	1		1												
Oran	C	1	1	2	5	1				1								
Angola (see table below).																		
Arabia: Aden	C		30	69	40	110	18	21	42	22	11	17	6	4	1	2		
	D		8	20	20	20	18	4	17	17	20	10	4	3	1			
Australia: Fremantle Quarantine Station	C									1								
Bermuda: Hamilton	C					1												
Brazil:																		
Porto Alegre	C				1										3			
Rio de Janeiro	C				3													
British East Africa (see also table below):																		
Tanganyika	C	3		3	4	7	2	2	2	4		2						
British South Africa:																		
Northern Rhodesia	C								73									
	D								4									
Southern Rhodesia	C	17	69	13	12				5									
Canada:																		
Alberta	C	5	7	8		12					1	2	1					
Calgary	C	1		2							1	1						
Edmonton	C	2	12	5		4							1					
British Columbia—Vancouver	C	70	64	46	23	13	4	8	2		5		2	1		2	3	
Manitoba	C	15	3	12	6	6			1									
Winnipeg and vicinity	C					2												
New Brunswick	C		3															
Nova Scotia	C			1							2							
Ontario	C	83	57	113	40	84	25	5	13	14		2	5		5	4	3	
Niagara Falls	C		1		3													
North Bay	C	4		3	8	2	2	2	2	1				3				
Ottawa	C	1				1				1		1						
Toronto	C		2	1		5	5		1	1					1	1		1
Windsor	C			3	3	2	1	1										
Prince Edward Island	C	2									1	1						
Quebec	C	28	14	34	12	10	2				1	1	1					
Montreal	C	16	4	4	1	1												

Quebec	C		3	1	1	2					1							
Riviere du Loup	C			1														
Saskatchewan	C	70	13	13	14								1		1	3		
Moose Jaw	C		1															
Saskatoon	C		1															
China:																		
Amoy	C	5	3	4	2													
Canton	C	86	135	85	46	16	5	3	3	1	2							
	D	15	15	12	4	1	1	1										
Chefoo	C			P	P													
Foochow	C	P	P	P						P		P						
Hong Kong	C	189	92	53	29	10		1			1		3	1		1		
	D	246	137	97	25	6	3	2				1	2	1		1		
Manchuria—																		
Changshun	C	2		1														
Harbin	C		1	4								1						
Kwangtung—																		
Dairen	C	9	1	11	21	11	4	6	4									
	D	3		4	8	3	4	2	3									
Port Arthur	C				3													
Mukden	C		1															
Nanking	C								P	P	P	P	P	P				
Shanghai—																		
Foreigners only	C	11	4	1	6	7	1	1	1									
Including natives	D	41	25	16	16	5			1									
Swatow	D	9	33	93	62	24	2	6	5	2	2							
Tientsin	C	2	8	6	12													
Tsingtao	C	P	P	P	P	P												
Yunnanfu	C		P	P														
Chosen (see table below).																		
Colombia:																		
Barranquilla	D								2									
Cartagena	D	7																
Curacao (alastrim)	C			1														
Dutch East Indies:																		
Balikpapan	C	1	5	3	4	1												
Belawan Deli	C	9	7	4		1		1		1				1	1			
	D	6	2							1								
Borneo	C	26																
Samarinda	C	47	2	1		3	9	2	2		7							
	D		3			1												
Celebes—Makassar	C		6	39	43	20	6	4	5	6	2	1		1	1	5		
	D		2	25	33	15	3	3	3	2	1	1		1	1	1		
Java—Batavia and West Java	C				1	6		6	1	1	1	2				1		
	D					1			2		1	2				1		
Sumatra—																		
Baros	C	36	16															
	D	5	2															
Medan	C	9	7	2	1	1		1	1	1	1							
	D	6	3		1				1									
Palembang	C	9																
	D	2																

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

SMALLPOX—Continued

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

Place		Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	Week ended— July, 1929 6	13	20	27	August, 1929 3	10	17	24	31	September, 1929 7	14	21
Ecuador (see table below).																		
Egypt:																		
Gharbieh	C	1																
Port Said	C			1		1												
Suez	C			5											3			
France (see table below).																		
Great Britain:																		
England and Wales	C	1,083	1,156	1,423	1,179	789	153	115	144	129	120	114	120	139	131	150		
Ashton under Lyne	C									7		2	1					
Birmingham	C			1	1													
Bradford	C	2	3	1	4	4			2	1					1	1		
Bristol	C							1										
Cardiff	C		1	1	4									1				
Castleford	C	85	56	31	12	3		1										
Leeds	C	6	8	3		1				1				1		2		
Liverpool	C		1															
London	C	54	58	201	193	167	43	16	30	18	31	19		28	37	41		
London and Great Towns	C	425	598	888	656	496	103	64	109	87	73	60	74	90	79	81		
	D		3	6	3	1	1	2		1								
Newcastle-on-Tyne	C	6	10	3	37	20	9	4		2	1	2		1	2			
Nottingham	C		2															
Stoke-on-Trent	C	18	72	133	86	62	5	7	11	9	1	10	1	6	2	2		
West Ham	C									26	22	17	20					
Scotland—																		
Aberdeen	C			2														
Glasgow	C		1	19	1													
Greece (see table below).																		
Hedjaz	C	108	84	77	40	83	27	8	7	11	4	2		5	17			
	D	40	52	52	24	53	21	2	4	8	3	2		14	3			
Honduras: Puerto Castilla	C				1													
India	C	14,890	19,120	22,556	17,011	11,549	2,249	1,966	1,669	1,954								
	D	3,285	3,983	5,060	4,185	3,006	533	534	479	516								
Bombay	C	397	441	315	208	147	28	21	22	21	18	18	16	11	18	5		
	D	188	206	175	131	99	13	15	12	15	7	9	12	3	10	3		

Calcutta	C	104	127	101	39	27	6	3	2	5	13	2	9	7	2	7		
	D	29	77	74	36	24	4	3	1	3	11	2	3	6		7		
Karachi	C	147	206	144	84	35	6	3	12	4	6	1	2	6	5	6		
	D	14	70	59	59	25	6	1	6		1	1	1	4	1	6		
Madras	C	260	392	327	174	88	25	39	24	34	28	16	33	12	19	14		
	D	61	83	84	61	20	6	12	10	4	8	6	2	6	3	4		
Moulmein	C	14	18	7	8	6	1	4		5	2	8	1		2	1		
	D	4	4	6	6	5	1	3		1	1	3	1		1	1		
Negapatam	C	5	9	7	2	6	1	1	2					1	1			
	D	4	1															
Rangoon	C	17	13	7	1		1	2			1							
	D	6	6	3	1		1											
Tuticorin	C	1		1		1												
Vizagapatam	C	52	26	28	2	4	2			1		1						
	D	9	5	8		2				2								
India (French):																		
Karikal	C		2	2	3	5			1		2	10						
	D		2	2	3	5			1		2							
Pondicherry Province	C	79	70	60	32	18	5	4	8	4	6	3	2	1		2		
	D	61	60	51	30	15	5	4	3	4	1	3	2	1		2		
India (Portuguese)	C				3	9		1	1	2								
Indo-China (see also table below):																		
Pnompenh	C	62	68	40	22	8	5	1	3			2	1		1			
	D	36	33	24	12	2	1	1	1		1	1	1		1			
Saigon and Cholon	C	2	2	2	1					1								
	D				1	1												
Iraq:																		
Baghdad	C	7	6	6	3	1			1									
	D	5	1															
Basra	C	7	9	8	8	9			1									
	D	5	2	6	8	1												
Diyalah Liwa	C				48		8							13				
	D				13		2							12				
Kirkuk Liwa	C	18																
	D	4																
Mossoul	C	28				20	12				21			60	35			
	D	4									1			12	12			
Italy: Turin	C	1																
Ivory Coast (see table below).																		
Jamaica (outside Kingston) (alastrim)	C			1	1			7										
Japan:																		
Kobe	C	1																
Niigata	C				12	2												
Osaka	C	1			1													
Shimane Province	C		16	3														
Tokyo	C				2	1												
Macao	D	75	32	20	5	2												

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

SMALLPOX—Continued

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

Place		Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	Week ended— July, 1929 6	13	20	27	August, 1929 3	10	17	24	31	September, 1929 7	14	21
Mexico:																		
Acapulco	C			1	1	2		3			1	2						
	D			1	1	2		3			1	2						
Aguascalientes	D	3	5	9	6	17	3	5	2	1	2	3	1	1	2	1	2	
Chiapas Province	C		P															
Coahuila	D					1												
Jalisco (State): Guadalajara	D	8	13	12	15	11	5		1		1	2		2	5	1	2	
Juarez	D	1	3											3	P			
Mexico City and surrounding territory	C	2	1		1	9	3	2	3	5	5	5	7	4	1			
Oaxaca—Zacatepec	C			P		10	1			2		3	3					
Palomas	C	1																
Tampico	C	1	2															
Vera Cruz	D		2															
Moroceo (see table below).																		
Netherlands: Rotterdam	C									40	30	53	58		23	31		
Nicaragua: Managua	C			P														
Nigeria: Lagos	C		1	1	2					1								
Norway: Stavanger	C			2														
Palestine	C				1													
Panama [1]	C						7		7			1		4	4	14		77
Panama Canal Zone	C		P		1	1												
Persia (see table below).																		
Poland	C			6	2	66							1	1				
	D					2												
Portugal:																		
Lisbon	C		3	4	1	6	3			1		1						
Oporto	C		1	2		2		2										
Senegal (see table below).																		
Siam	C	4		55	32	27	23	43	3	2	1	19						
	D			8	9	7	2	11	1		2	1						
Somaliland, British: Boales	C					11		1	3								3	
	D					4												

Somaliland, French: Jibuti	C				3	16	8	7	25	83	8	10	6	7	5	1		
	D				1	8	2	1	2	16	11	1	6	3	5	3	1	
Spain: Valencia	C	2	5			1												
Straits Settlements: Singapore	C	3	1															
Sudan (Anglo-Egyptian)	C	188	245	377	1,570	1,172	323	25	724	49	55	11	12	9	10	580		
	D	54	29	26	132	195	28	9	115	12	51	1	5	16	16	79		
Sudan (French) (see table below).																		
Syria (see table below).																		
Tunisia: Tunis	C	5		2		2	1											
Turkey (see table below).																		
Union of Socialist Soviet Republics: Vladivostok	C				2													
Union of South Africa:																		
Cape Province	C			P	P	P												
Transvaal	C		P	P	P	P												
Upper Volta	C	4	4	15	2	10												
On vessel:																		
S. S. Aorangi, at Sydney	C					1												
S. S. Assyria, at Suez, from Bombay	C				1													
S. S. City of Hereford, at Brisbane, from Culcutta	C								1									
S. S. City of Venice, at Suez, from Calcutta	C				1													
S. S. Fern, at Port Said, from Abadan	C				P													
S. S. British Birch, at Suez, from Abadan	C					1												
S. S. Keneh, at Suakim, from Jeddah	C					4												
S. S. Le Panto, at Suez, Egypt	C				4													
S. S. Lopez-Lopez, at Suez	C			1														
S. S. Malwa, at Suez	C			1														
S. S. Mancar, at Suez, from Calcutta	C			1														
Tantalus (motor ship), at Amsterdam	C		3															
S. S. Tuscania, at Glasgow, from Bombay	C			P														

[1] 106 cases of smallpox were reported from June 16 to Sept. 14, 1929, in Panama City, Panama.

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

SMALLPOX—Continued

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

Place		February, 1929	March, 1929	April, 1929	May, 1929	June, 1929			July, 1929			August, 1929			Sept. 7, 1929
						1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-31	
Indo-China (see also table above)	C	364	561	755	410				87	72			123	140	
Ivory Coast	C		4								22		2		
Senegal	C	80	70	57	1										
	D	8	11	15											
Sudan (French)	C		26	83	2			57	2	13					
	D		3					15							
Syria: Beirut	C	48	12	18	12	18	12	6	26	1		16	6	7	4

Place		February, 1929	March, 1929	April, 1929	May, 1929	June, 1929	July, 1929
British East Africa (see also table above):							
Kenya	C		23	91	38	45	
Chosen	C	34	121	127	97		
	D	2	12	41	29		
Chinampo	C	1					
Costa Rica: San Jose	C	1					
Ecuador: Guayaquil	C	4	2	2	1		
	D	1					

Place		February, 1929	March, 1929	April, 1929	May, 1929	June, 1929	July, 1929
France	C	3	5	5	11	15	
Greece	C	5	2	4	5	2	
	D	1					
Morocco	C	11	8	12	39	2	9
Persia	D	23	8				
Turkey	C	7		1		11	

TYPHUS FEVER

(C indicates cases; D, deaths; P, Present)

Place		Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	Week ended— July, 1929 6	13	20	27	August, 1929 3	10	17	24	31	September, 1929 7	14
Algeria:																	
Algiers	C		6	11	1	1		1	6	2		8	1				
Constantine Department	C	13	3			11						2					
Oran	C	2		8	14	5	3		6			2					
British South Africa: Northern Rhodesia	C				3												
	D				3												
Bulgaria	C	39	40	28	21	4	1	2	2	7					7		
	D	2	5	2	1	1		1	1								
Sofia	C								1								
Chile:																	
Concepcion	C		2		1												
Valparaiso	C						1				1						
China:																	
Manchuria	C		1														
Tientsin	C												1				
Chosen (see table below).																	
Czechoslovakia (see table below).																	
Egypt:																	
Alexandria	C		1	1													
	D		1		1												
Assouan Province	C	2															
	D	2															
Behcira Province	C	13	67	50	159	13	5			3	25		6				
	D		9	9	24	6	2			2							
Cairo	C				2		1		1					4	1	1	
Dakahlieh Province	C		34														
Gharbieh	C	2															
	D	1															
Menoufieh Province	C			85													
Port Said	C				2	2	3	1			1	1					
Suez	C												1	1			
Greece (see table below).																	
Hungary	C				1												
Indo-China (see table below).																	

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

TYPHUS FEVER—Continued

(C indicates cases; D, deaths; P, Present)

Place		Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	Week ended— July, 1929 6	13	20	27	August, 1929 3	10	17	24	31	September, 1929 7	14
Ireland (Irish Free State):																	
Cavan County—Carrickmacross	C				1												
Cork County	C	1															
Donegal County—																	
Inishower	C			1													
Stranorlar	C					1											
Kerry County—																	
Dingle	C		2	2													
Killarney	C	1		2													
Tyrone County—Strabane.[1]																	
Latvia (see table below).																	
Lithuania (see table below).																	
Mexico:																	
Aguascalientes	D		5				1							1			
Mexico City, including municipalities in Federal District	C	7	4	4	8	14	4	2		5		7	2	2	3		
	D	2		1	2	1								1	2		
Morocco	C	17	19	28	5	12		27			3		3				
	D			4				11									
Norway: Oslo	C			12	2												
Palestine	C		2		2	2	1	1	1	1				1	1	3	1
Persia	C					5	18										
	D					4	6										
Poland	C	202	295	314	264	177	25	24	25	16	16	12	12	8	2		
	D	18	20	25	19	7	1	1	2		3	1	3		1		
Portugal:																	
Lisbon	C					1											
Oporto	C					1							1				
Rumania	C	211	220	135	179	91	7	19	2	5		5		4			
	D	28	30	16	31	13	1	1				1					
Tunisia	C	3	20	19	22	23	1	2				4					
Turkey (see table below).																	
Union of South Africa:																	
Cape Province	C	P	P	P	P	P	P	P	P	P	1	1					
Natal	C	2	P	P	P	P											
Orange Free State	C	P		P	P	P	P			P							
Transvaal	C		P	P	P	P				P							
Yugoslavia (see table below).																	

[1] During the period from Apr. 14 to May 21, 1929, 18 cases of typhus fever with 4 deaths were reported in Strabane, Tyrone County, Ireland.

Place		February, 1929	March, 1929	April, 1929	May, 1929	June, 1929	July, 1929
Canada: Ontario	C					1	
Chosen	C	81	177	153	272		
	D	15	22	9	15		
Seoul	C		3	2	1	2	
Czechoslovakia	C	7	41	25	18	2	
	D	1	1		1		
Greece: Athens	C	4	4	2		3	
Indo-China: Tonkin	C					2	
Latvia	C		1	10	7	5	
Lithuania	C	24	62	101	63	27	10
	D	3	1	7	5	4	1
Turkey	C	3	11	3	7	10	
	D	1			1	3	
Yugoslavia	C	13	7		19		
	D	2			1		3
							1

YELLOW FEVER

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

Place		Feb. 10–Mar. 9, 1929	Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	Week ended— July, 1929: 6	13	20	27	August, 1929: 3	10	17	24	31	September, 1929: 7	14	21
Belgian Congo: Tumba	C			1														
Brazil:																		
Bahia	C		1				1											
	D		1				1											
Guaratingueta	C	[1] 1																
	D	[1] 1																
Nictheroy	C														1			
Para	D		5															
Pernambuco	C		4															
Porto Alegre	D				[1] 1													
Rio de Janeiro	C	92	252	180	70	7	0	1	0	0	0	0	0				1	0
	D	67	132	94	38	5		1										
Colombia:																		
Simacota	C									4								
Socorro [2]	C						6			6								
Liberia: Monrovia	C	7	10	2		4	4											
	D	4	4			3	1											
On vessel:																		
S. S. Skogland, at Porto Alegre, from Rio de Janeiro	C				1													

[1] Imported.

[2] From June 19 to July 8, 1929, 41 cases of yellow fever with 23 deaths were reported in Socorro, Colombia.