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A STUDY OF THE EFFICIENCY OF DUST-REMOVAL SYSTEMS IN GRANITE-CUTTING PLANTS

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INTRODUCTION

In its investigations concerning the effect of the inhalation of industrial dusts upon the health of the worker (1) (2) the Office of Industrial Hygiene and Sanitation has been greatly impressed with the need of knowledge of the efficiency of ventilating devices under practical working conditions with reference to the average and maximum amount of dust to which employees are subjected. Special surveys are therefore being carried out to secure this information in a number of dusty trades. The present paper deals with such a study of certain plants in the granite-cutting industry employing local exhaust ventilation for the removal of dust created by the use of hand-pneumatic tools and in other dusty processes.

This study is the outgrowth of an extended investigation into the effects of silica dust of a known composition upon the health of the worker. Granite dust was chosen as being representative of such dusts, and the study was therefore carried out in the granite-cutting industry. It should be noted that none of the plants included in that study employed artificial ventilation devices for the removal of dust except those universally used for inside surface cutters and sand blasters. The investigation, which was rather comprehensive in its scope, included morbidity records over a period of two and one-quarter years (i. e., information as to the cause of each absence from work), complete physical examinations with particular reference to silicosis and tuberculosis, sputum analyses, X-ray pictures, and determinations of the amount of dust present in the air and of its chemical and mineralogical nature. A complete report of this study is found in Public Health Bulletin No. 187 (2).

Description of occupations.—The processes involved in granite stone cutting may be divided roughly into two parts, namely, those occupations dealing with the actual cutting of the stone and the additional labor necessary for the conduct of the former processes. Examination of Table 1 shows that under the heading of granite cutters there are five general occupations. Hand pneumatic tool

workers are those men employing a hand tool actuated by compressed air. There are two types of such workers, "liners" and "finishers."

A "liner" is the first person to handle a stone when it is brought from the quarry. It is his task to put a coarse edge on the stone and work out the dimensions. His chief tools are a pneumatically operated chisel, and a pointed chisel and hammer for knocking off rough edges where it is not practicable to use a pneumatic chisel. The "finishers" use all sorts of pneumatically driven tools, such as a small four-pronged pick, known as a "diamond point," and various sizes of chisels. They also employ a bush hammer worked without compressed air, this hammer being composed of several thin steel blades packed side by side. A "finisher" also does some work with a pointed chisel and mallet, similar to that used by a "liner."

The next classification in Table 1 takes in surface cutting, the purpose of this operation being to change the surface of the stone from a coarse to a fine one. To do this, the cutter uses first a large four-pronged pick hammer and then four grades of bush hammers. An indoor surface cutting machine is always equipped with a suction device for the removal of dust, whereas, as a rule, an outdoor surface cutting machine is not so equipped. During the summer months, when the shed doors and windows are open, much of the dust generated by the outdoor surfacers is at times blown into the sheds.

TABLE 1.—*Analysis by occupation of certain granite-cutting sheds*

Occupation	Number of men	Occupation	Number of men
Granite cutters:		Sawyers	
Pneumatic-tool workers	565	Engineers	
Surfacing-machine operators	68	Firemen	
Sand-blast operators	4	Draftsmen	
Carvers and letterers	24	Foremen	
Lathe operators and others	41	Blacksmiths	
Tool grinders	20	Carpenters	86
Lumpers		Night watchmen	
Boxers		Clerks	
Cranemen		Salesmen	
Polishers		Superintendents	
Bed setters	164	Manufacturers	
Tool carriers			
Machinists		Total	972
Laborers			
Stone washers			

The other occupations involving the use of hand pneumatic tools are carving and lettering. Carvers employ finely pointed pneumatically actuated chisels for producing ornamental designs and statues, while letterers employ the same means for placing inscriptions on stones. These two types of men do no other kind of work.

Other occupations coming under the head of granite cutting are sand-blast operators, drillers, and lathe workers.

The above-mentioned occupations include all the men listed as granite cutters. These process workers spend about 5½ hours a day

at their respective occupations, the remaining time being consumed in other activities about the shed; and so from 5 to 6 hours a day, a process worker is exposed to the amount of dust created by his occupation, while the remaining 2 hours he is exposed to the dust suspended in the general shed atmosphere.

There are several other occupations connected with granite cutting which require description. Workers known as "lumpers" are those who handle a stone, turn it over for surface cutters and finishers, and occasionally pick up the waste rock known as "grout." These men are exposed to the dust suspended in the shed atmosphere. "Boxers" are those men who are engaged in packing stone for shipment. They are exposed to as much dust as are the "lumpers." Other workers who breathe the general plant atmosphere are cranemen, employed in operating the boom derricks and traveling cranes, and bed setters, whose duty it is to place stones in position for the polishers. The polishers apply a fine polish on a stone by hand or machine. This work is done by means of rubbing a heavy steel disk over the stone, using lead shot and wet carborundum grit as a polishing medium. The sawyers operate large vertical or circular saws in cutting large slabs of stone. Tool grinders are employed in some plants, while in others each process worker grinds his own tools. These grinders sharpen tools on wet sandstone wheels and are exposed to a considerable amount of dust of a highly siliceous nature. Several boys are employed to pick up tools that become scattered over the shed floor. These boys also deliver the sharpened tools to the various process workers. Other occupations connected with the granite-cutting industry are listed in Table 1. Due to the fact that the various processes are not segregated, all employees are exposed to a certain amount of dust that is always suspended in the atmosphere.

Description of granite cutting.—In order to amplify some of the diverse processes outlined above, a brief description of granite cutting will be given. The stone from the quarry goes first to the "liner" or "scuffer," who marks the dimensions on the stone and puts an edge on the face of the stone with a pneumatic chisel, hand hammer, and pointed chisel. The "lumper" then delivers the stone to the surface cutter. The latter first knocks off rough edges with a large sledge hammer and then uses a pick hammer on the face of the stone. After the pick hammer has taken off the rough portions of the stone, four grades of bush hammers are used to give a fine finish. Next the stone goes to the "finisher," who first works the ends of the stone, then the back, and lastly the top. The surface cutter receives the stone again, in order to work the top of the granite. The stone is then again given to the "finisher," who works on the panel, and, lastly, if the work demands it, the stone is turned over to carvers and letterers for

ornamental designs and inscriptions. Sometimes this latter work is done in part, or entirely, by the sand-blasting process.

PLANTS WITHOUT LOCAL EXHAUST VENTILATION

Before taking up the results of our survey of the efficiency of ventilating devices in certain plants employing local exhaust ventilation, it has been found advisable to review the findings obtained in those plants without local exhaust ventilation.

Nature of granite dust and exposure to it.—In Public Health Bulletin No. 187 (2), considerable space was given to a discussion of the chemical and mineralogical characteristics of granite dust and their relationship to the pathology caused by exposure to varying amounts of this dust. In a general way, the most important of these considerations were as follows:

(1) Since the South African (3) and other investigators have conclusively demonstrated that only particles under 10 microns in longest diameter are found in lungs on autopsy, particular attention has been given to express the magnitude of exposure in terms of size of particles. It should be noted that, in this study, only 1 or 2 per cent of the total dust particles examined were found to be larger than 10 microns.

(2) The chemical analyses showed that silica amounted to about 70 per cent of the total dust. The other constituents were alumina, 15 per cent; soda, 5 per cent; potash, 4 to 5 per cent; lime, 2 to 3 per cent; and iron oxide, 1 to 2 per cent. The petrographic analysis of this dust showed that free silica in the form of quartz made up from 31 to 38 per cent of the total. Other silicates and minerals found were biotite (abundant), muscovite (common), chlorite (rare), microlene (abundant), orthoclase (abundant), and zircon (very rare). The chemical and petrographic analysis would therefore place granite dust in that class of dusts which are considered by all authorities as the most dangerous to health.

(3) The length of time over which the occupational exposure had taken place and the magnitude or amount of dust to which the workers were subjected were found to be determining factors in the development of silicosis and complicating tuberculosis.

Results of dust analyses.—From the foregoing discussion concerning the chemical and physical properties of the dust suspended in the atmosphere of the granite-cutting sheds, it is obvious that we are dealing with a dust recognized as highly injurious and of a potentially dangerous size. In studying the extent of atmospheric pollution of the granite-cutting plants, the same technical procedure was used as in the cement study previously cited (1). In all, 220 dust determinations were made in plants without local exhaust ventilation, some during the winter months and others during the summer,

in order to obtain an average index of atmospheric dust pollution. The analyses included a microscopic count of the large and small particles, the weight of these particles, and the amount of organic and inorganic matter present in the dust. The results of these determinations show that most of the workers are exposed to an extremely high concentration of dust. The tables and figures that follow summarize the results of all the dust determinations.

Table 2 presents an analysis of the dust content of the air associated with various occupations irrespective of the plants in which these occupations are pursued. These occupations are listed in descending order of the average dust counts. The minimum and

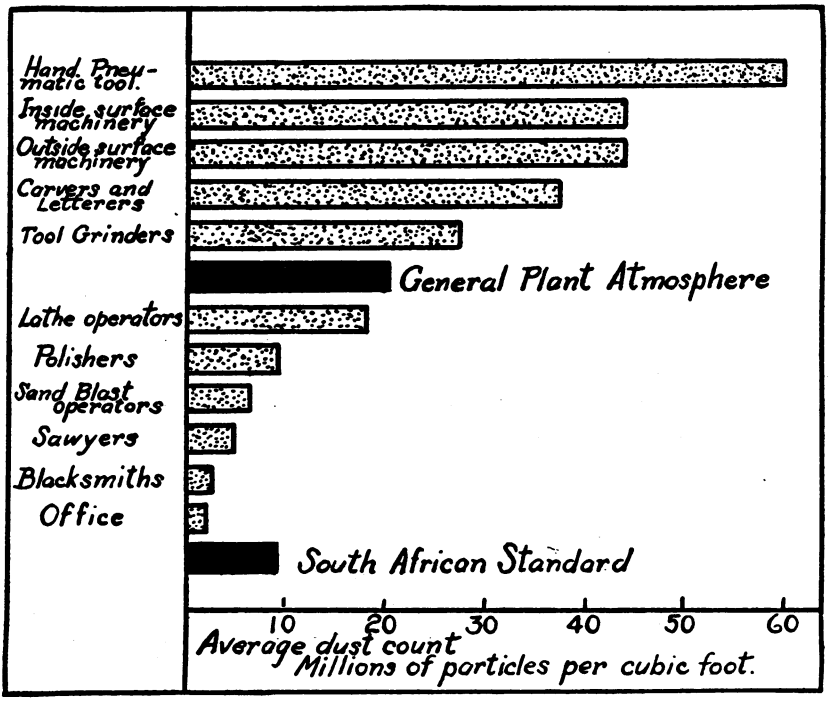

FIGURE 1.—Ranking of occupations in the granite industry according to quantity of dust exposure

maximum dust counts are also given, as well as the number of men exposed and the number of determinations made for each occupation. Figure 1 presents graphically the dust content of the air associated with various occupations, and discloses the fact that the only workers not exposed to a dust count higher than that found in the general plant atmosphere (20.2 millions of particles per cubic foot of air) are sand-blast operators, sawyers, blacksmiths, lathe operators, polishers, and office employees (12.5 per cent of the total employed). Those occupations creating dust exceeding 20 millions of particles per cubic foot of air are mostly the ones making use of the pneumatic tool.

TABLE 2.—*Ranking the various occupations in the granite-cutting industry according to the number of millions of dust particles per cubic foot of air*

Occupation	Number of men exposed	Number of observations	Minimum dust count (in millions)	Maximum dust count (in millions)	Average dust count (in millions)
All pneumatic hand tool operators	565	56	2.4	201.0	59.2
Surface cutters, inside	58	34	.6	165.7	44.0
Surface cutters, outside	10	10	14.0	102.2	43.9
Carvers and letterers	24	20	11.7	99.8	37.0
Tool grinders	20	14	6.3	62.0	27.1
General plant atmosphere	121	42	2.5	64.0	20.2
Lathe operators	4	4	6.0	25.7	17.9
Polishers	43	16	1.3	26.8	9.0
Sand-blast operators	4	6	1.9	13.4	6.2
Sawyers	10	4	4.0	4.9	4.6
Blacksmiths and others	103	5	.9	8.2	2.5
Office employees	10	4	1.5	2.4	1.9

Perusal of the columns of Table 2, devoted to the minimum and maximum dust counts, at once indicates the enormous variation that exists from time to time in the dust content of the air associated with the granite-cutting industry. The lowest counts in most instances were obtained when the worker used some degree of care in his operation. By keeping a stone constantly wetted with water the amount of dust may be reduced in some cases 50 per cent. In one instance an operator, using a diamond-point pneumatic tool, worked the stone wet. The resulting dust amounted to 22 million particles per cubic foot of air. The same operator was then instructed to work the stone dry; as a result, the amount of dust reached the high figure of 45 million particles per cubic foot. Other instances of carelessness on the part of the workers will be discussed in more detail in a later portion of this paper.

Relation of magnitude of dust exposure to resulting silicosis and tuberculosis.—For a long time evidence has been submitted by various workers bearing on the relationship between exposure to a dust containing free silica and silicosis and tuberculosis. The work of Collis in England, of the South African investigators, of the United States Public Health Service, of the United States Bureau of Mines, and of others in this country has conclusively proved that where there is extended exposure to a siliceous dust in which the silica is present in the form of quartz, silicosis will inevitably occur and frequently tuberculosis will be the end result.

In recent years further investigations have added to our knowledge of the factors concerning the development of silicosis. It has been found (*a*) that the percentage of free silica as quartz and (*b*) the magnitude of exposure largely determine the rapidity with which the silicosis develops.

The South African investigators (4), using the Kotze konimeter for dust sampling and dealing with a dust found to contain free silica as quartz in excess of 85 per cent, set a tentative standard of 300

particles per cubic centimeter of air (i. e., 8.5 million particles per cubic foot) as the upper limit of dustiness to be regarded as allowable. On the other hand, the Australian investigators (5), dealing with a sandstone dust in the Sydney mines, found that the quartz content of this dust was from 86 to 95 per cent, and advocated a standard of dustiness not to exceed 200 particles per cubic centimeter as determined by the Owens jet dust sampler. These investigators also found that the Owens dust counts correlated very well with the weight of the dust determined by the Impinger apparatus, the instrument used in all our studies.

In this country the investigation in certain plants of the granite-cutting industry discussed above has shown the dust to contain from 31 to 38 per cent of free silica in the form of quartz. At the outset, then, we might expect to arrive at a less severe dust standard than advocated by the South Africans and Australians. Of particular importance in our study was the fact that it was possible to divide the workers into four groups, depending upon the average exposure in terms of the amount of dust in the air.

In group A, which included hand-pneumatic tool operators and in which the exposure averaged about 59 million particles per cubic foot of air, it was found that practically 100 per cent developed an established silicosis within 10 years from the time of beginning employment. Also, in this group the highest rate was found for cases diagnosed on physical examination as having active tuberculosis. Furthermore, a definite relation was established between length of service in the industry and the prevalence of tuberculosis. All of the statistical data obtained indicated definitely that hand-pneumatic tool operators in these plants suffered from an occupational hazard.

In group B were included those workers other than hand-pneumatic tool operators who were also exposed to more than the average plant dustiness. Taking the group as a whole, the average dust concentration was nearly 45 million particles per cubic foot of air. This group showed the same reflection of a dust hazard as group A.

In group C, consisting of those occupational groups exposed to the average plant dustiness (about 20 million particles per cubic foot of air), silicosis developed much more slowly than in the groups just discussed and there appeared to be very little excess in the rate for tuberculosis, with no tendency for an increase according to length of service. Analysis of occupational mortality over a period of 25 years, however, indicated that some of the occupations in this group may have been exposed to a real dust hazard.

Group D was made up of those occupations in which the dustiness was less than that of the average plant atmosphere. The average exposure for the group was less than 10 million particles per cubic foot of air. Although a certain amount of silicosis was found even

in this group, there was no indication of serious results, even when the workers had been employed for many years.

From the results of this study it was found practicable to suggest a tentative standard for the upper limit of allowable dustiness between 10 and 20 million particles per cubic foot of air for workers exposed to dust resulting from granite cutting. The same limit would presumably be applicable in the case of other dusts with the same physical characteristics, particularly with a quartz content of about 35 per cent.

PLANTS WITH LOCAL EXHAUST VENTILATION

The findings summarized in this paper in regard to the average conditions in the granite plants studied indicate an excessive amount of dust in the air, especially in those occupations which are the primary source of the dust. It would seem logical, since the excessive dustiness is intimately connected with certain occupations, that the solution would lie in the removal of dust at its source. The only effective means of accomplishing this end is by the installation of local exhaust ventilation in connection with those processes productive of dust, and by housing in separate quarters, when possible, other activities not associated with dusty conditions, such as polishing, sawing, and boxing.

A study of the efficiency of such ventilating systems in practical operation was made in several of the newer granite plants, and two such systems (in two plants which have been designated X and Y) are described herewith in detail. The surveys were made in the wintertime, when only artificial ventilation was available.

Description of ventilation system used in plant X.—Granite cutting was carried on at this plant in two sheds, known as shed No. 1 (south shed) and shed No. 2 (north shed). These sheds were made of match boards, building paper, and clap boards, and are of the same height and width (32 feet 8 inches × 50 feet), shed No. 1 being 228 feet long, while shed No. 2 is 345 feet long. It is quite obvious that we are dealing here with sheds of large cubic capacity, the cubic contents of No. 1 shed being 323,000 cubic feet, and of No. 2 shed, 489,000 cubic feet. The window area of the two sheds is 2,866 square feet for No. 1 shed and 4,600 square feet for No. 2 shed. These windows serve as a means of natural ventilation during the summer months.

Shed No. 1 is equipped with a double No. 60 steel plate fan, directly connected to a 30-h. p. motor, operating at 720 r. p. m. The pipes leading from the fans are 28 inches in diameter at the inlet side and taper to 6 inches in diameter at the extreme end. At equally spaced intervals branch ducts supply suction both to surface cutting machines and to hand tools. The flexible pipes used to remove dust from the surface cutting machines are 5 inches in diameter. Other branch ducts supply suction to two flexible pieces of hose, each 2

inches in diameter. These flexible hose connections are about 17 feet in length and run through a pulley suspended on a weighted arm, thus allowing the hose to be moved about over a considerable area. These 2-inch pipes are used to remove dust from hand-tool operations. Dust traps are placed in the main pipe line directly after each branch duct. These traps are of the automatic dumping type and serve to remove most of the coarse dust from the air before it enters the fan. A 38-inch discharge pipe at the pressure side of the double fan leads to a cyclone dust catcher, in which most of the medium-sized dust is caught. A small portion of very fine dust is allowed to escape through the cyclone stack, which is several feet above the roof of the shed. This system of dust removal, briefly outlined herein, furnishes suction to 36 pneumatic hand-tool devices, one Lewis drill gun, and six surface-cutting machines. In addition to these devices, suction is also furnished intermittently to four sandstone grinding wheels located in the grinding room compartment in this shed. This suction is turned onto one stone at a time whenever a wheel is "turned down." At the time this study was made only 23 men were employed in this shed, 18 of whom used pneumatically operated tools.

Shed No. 2, the larger of the two buildings, is equipped with three large single fans, one double fan, and a small fan for the grinding room. At the east end of the shed a single No. 55 Sturtevant fan, actuated by a 10-h. p. motor at 720 r. p. m., supplied suction to two lathes and one sand-blast cabinet. Sand blasting in this shed is carried on with the operator standing outside the sand-blast cabinet. The dust caught by this system is led to a cyclone separator and the very fine dust not trapped in the cyclone is led to a bag house close by. On the north side of the shed are two No. 60 Sturtevant fans, each driven by a 15-h. p. motor at 720 r. p. m. The discharge side of each fan is connected to a cyclone separator of the same type as described for No. 1 shed. One fan furnishes suction to 6 surfacing machines and 9 hand-tool devices, while the other fan supplies suction to 6 surfacing machines and 15 hand-tool devices. On the south side of the shed is a double No. 55 fan, driven by a 29-h. p. motor at 720 r. p. m., furnishing suction to 7 surface-cutting machines, 20 hand-tool devices, and 1 Lewis driller. This double fan is also connected to a cyclone dust catcher. Six grindstones in the grinding room are equipped with a small fan and motor for removing dust created when these wheels are "turned down" or dressed. This dust is allowed to discharge directly into the outdoor air, since no cyclone separator is attached to this fan. During the time of this inquiry 53 men were employed in this shed, 38 of whom were using pneumatic tools.

Between the two sheds are located six surface-cutting machines equipped with a dust-removal system. This system is of the same

design as those found in the sheds, with the exception that the duct diameter of the branch pipe leading to the nozzle, or hood, is 6 inches instead of 5. A single No. 60 fan, driven by a 15-h. p. motor at 720 r. p. m., supplied suction to these machines. In this case, also, the dust is trapped in a cyclone separator located near the platform housing the fan. In all there are six of these cyclone separators used in connection with the trapping of dust removed from the devices in use in the sheds and outdoors. It must be noted, however, that no provision is made to catch the fine dust escaping from the separators.

With the aid of a vane anemometer numerous exhaust velocity observations were obtained for the various dust-removal devices in use at this plant. These observations showed that for the devices used in connection with the removal of dust from hand pneumatic tool operations the minimum air velocity was 800 feet per minute, the maximum 1,960 feet per minute, with an average air velocity of 1,412 feet per minute. Observations made on the exhaust pipes used in connection with dust removal from surface-cutting machines yielded an average air velocity of 3,300 feet per minute. These latter readings were obtained with the hoods removed from the circular branch pipes.

Results of dust analyses in plant X.—Although exhaust velocity observations are valuable from the standpoint of proper maintenance, they do not indicate accurately to the sanitarian the actual protection afforded the workmen using the dust-removal devices. It is necessary that certain suction heads and air velocities should be maintained; but, as stated earlier, the final test is whether or not a satisfactory reduction in the dust content of the air has been secured and maintained, as determined by the actual number of dust particles in the air breathed by the worker. Twenty-four atmospheric dust determinations were made at this plant in order to evaluate more accurately the protection given the workers by the dust-removal devices in use.

TABLE 3.—*Results of dust determinations made at plant X*

Sampling location	Average dust count in millions of particles per cubic foot of air	Sampling location	Average dust count in millions of particles per cubic foot of air
Hand pneumatic tool workers	21.7	Carborundum machine	3.7
Inside surface cutters	21.6	Sand blaster's station	3.5
Outdoor surface cutters	9.0	Outdoor air near plant	1.3
Tool grinders	5.9	Outdoor air about 100 yards away from plant	0.9
General plant atmosphere	5.1		
Crane operator's station	4.9		

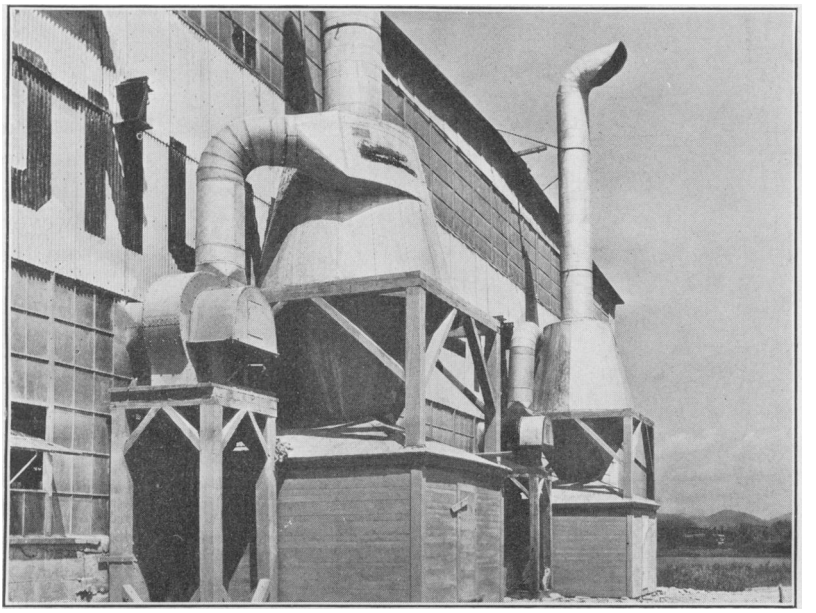

Figure 2.—View of exhaust fans and dust catchers, Plant Y

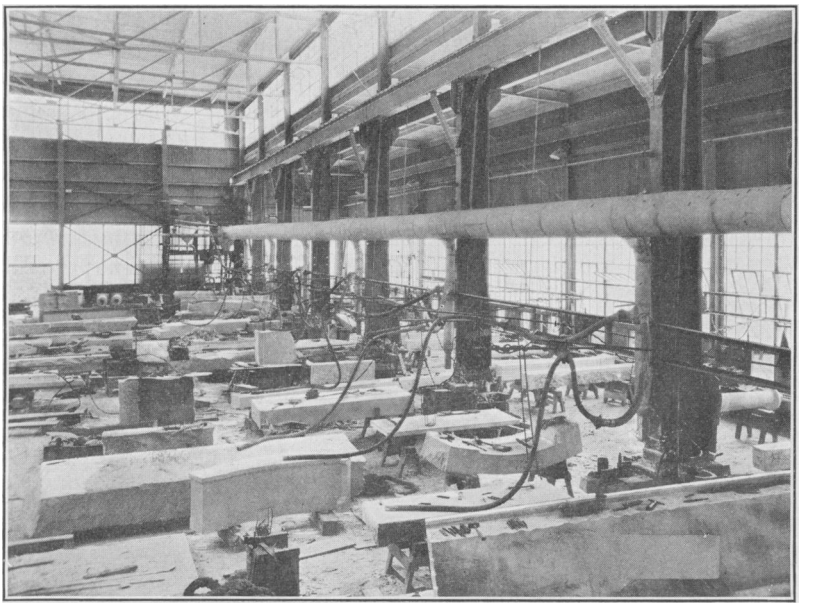

Figure 3.—Devices used to remove dust from hand pneumatic tool work, Plant Y

Figure 4.—Sand blast operator at work in Plant Y

Table 3 presents in detail the results of the dust samples obtained with the impinger apparatus. This table shows that the general air in both sheds contains a low amount of dust as judged by present-day standards. In both sheds the amount of dust in the general air averaged about 5 million particles per cubic foot of air. The only occupations averaging over 10 million particles of dust per cubic foot of air were those of inside surface cutting and all hand pneumatic tool operations. The higher dust exposure for these two occupations was due chiefly to improper use and lack of maintenance of the system of ventilation, a subject to be dealt with in a later portion of this paper.

Description of ventilation system used in plant Y.—As a second example of a granite-cutting shed utilizing exhaust ventilation for the removal of dust we have conducted a study in another modern plant which will be designated as plant Y.

The shed of plant Y is of very modern design and is very conspicuous because of the large number of windows extending from the roof to the floor. These windows are all opened in warm weather, thus giving some additional means of dust removal by natural ventilation. The dimensions of this shed are 263 feet by 127 feet, yielding a floor space of 33,401 square feet. The mean height of the roof is about 28 feet, so that the cubic content of this shed is 935,228 cubic feet, very nearly a million. Besides the natural ventilation afforded this shed by the numerous windows, two Sturtevant fans, located on platforms outside the building, supply suction for the various dust-creating processes in use at this plant. (See fig. 2.) These fans are of the No. 60 steel-plate type, actuated by a 15-h. p. motor at 720 r. p. m., and each one exhausts about 5,000 cubic feet of air per minute.

The fan on the south side of the building supplies suction to 1 lathe, 2 small surface cutters, and 20 hand pneumatic tool operatives. The fan on the north side of the shed supplies suction to 6 large surface cutting machines and 20 pneumatic tool operatives. The pipes leading from the fans are 30 inches in diameter at the fan inlet and taper to 6 inches in diameter at the extreme end, 200 feet away. There are two such ducts in the shed, each running parallel with the length of the building and located about 20 feet from the wall. At intervals of 20 feet a branch duct supplies suction to two flexible pieces of hose, each 2 inches in diameter. These flexible hose connections are about 17 feet in length and run through a pulley suspended on a weighted arm, thus allowing the hose to be moved about over a considerable area. (See fig. 3.)

Numerous velocity observations made on the 2-inch flexible hose pipes used for the removal of dust from hand pneumatic tools yielded an average air velocity of about 700 feet per minute. The average velocity for the surface cutting machine exhausts as measured in the circular branch pipes was found to be about 4,000 feet per minute.

Results of dust analyses in plant Y.—In Table 4 the results of 20 atmospheric dust samples obtained at this plant are presented in summarized form. These results indicate that tool grinders, surface cutters, and hand pneumatic tool operators are exposed to an amount of dust in the range of 10 million particles per cubic foot of air, and that the general plant atmosphere is slightly less than this amount, namely, 8.9 million particles per cubic foot.

TABLE 4.—*Results of dust determinations made in plant Y*

Sampling location	Average dust count in millions of particles per cubic foot of air	Sampling location	Average dust count in millions of particles per cubic foot of air
Tool grinders	12.1	General plant atmosphere	8.9
Surface cutters	10.6	Lathe operator	6.3
Hand pneumatic tool operators	9.5	Sand blaster	5.5

COMPARISON OF PLANTS X AND Y WITH PLANTS NOT HAVING LOCAL EXHAUST VENTILATION

In Table 5 a striking comparison is presented between the atmospheric dust conditions in the older plants not equipped with efficient dust-removal devices and plants X and Y, which contained a modern system of exhaust ventilation.

In an earlier portion of this paper it was shown that persons in occupations in which the exposure was less than 20 millions of granite dust particles per cubic foot of air experienced no excess incidence of tuberculosis, even after many years in this industry. It is quite obvious that the dust-removal systems in use at plants X and Y are capable, if maintained and used properly, of keeping the atmospheric dust concentration in a granite-cutting shed well below the proposed standard of from 10 to 20 million particles per cubic foot of air.

TABLE 5.—*Comparison of atmospheric dust conditions between two granite-cutting plants equipped with local exhaust ventilation and plants not so equipped*

Occupation	Average dust count in millions of particles per cubic foot of air; winter observations		
	Plants without efficient local exhaust system	Plants with efficient local exhaust system	
		Plant X	Plant Y
All pneumatic hand-tool operations	55.2	23.5	9.5
Surface cutting	45.0	15.3	10.6
Tool grinding	30.0	5.9	12.1
Sand blasting	6.9	3.5	5.5
General plant atmosphere	22.6	5.6	8.9

CERTAIN IMPERFECTIONS IN THE METHODS EMPLOYED IN THE CONDUCT OF GRANITE CUTTING

Examination of Table 5 indicates that certain occupations in the granite-cutting plants X and Y were associated with a dust exposure in excess of 10 million particles per cubic foot of air. Experimental evidence at hand shows that the systems of dust removal in use at these plants are capable, if maintained and used properly, of keeping the dust concentration in the air below the level of 10 million particles per cubic foot of air. It was the writer's observation during the course of his investigation at these plants that many of the hand-pneumatic tool operators did not avail themselves of the exhaust pipes furnished them. In many instances the suction hose was allowed to hang close to the ground in such a manner that pieces of granite were picked up by the exhaust and soon clogged the trap located next to the metal duct. Such practice obviously results in a diminution of the exhaust velocity at the working surface and results in an increase in the amount of dust in the air of the plant.

It was also noticed that the suction devices in use with the surface-cutting machines were oftentimes not used to their fullest efficiency. For example, it was observed that the adjustable hoods were lifted too high from the stone, so that much of the dust generated in surface-cutting escaped into the room instead of being removed through the exhaust hood. It was also observed that many of the surface cutters either blew dust off with the compressed air supply or brushed the dust off the stone without first wetting the stone with water.

One of the most common abuses practiced by granite workers is that of blowing dust off a stone with the exhaust port of the hand pneumatic hammer. Especially is this true among carvers and letterers, who claim that it is necessary to resort to such means in order to remove the fine dust from the small crevices in the design being carved on the stone. In order to show just how much additional dust was being created unnecessarily by such practice the following test was carried out. A carver, using a finely-pointed chisel, was asked to work for a specified period of time making use of the suction device furnished him. This man blew the dust off the stone twice every minute. The dust count on the sample obtained during this test yielded 39 million particles per cubic foot of air. This carver was next requested to repeat his work exactly in the same manner for the same duration of time, but was instructed not to resort to the removal of dust by blowing off with compressed air. As a result of the elimination of this practice of blowing dust off the exposure was reduced from 39 million to 29 million particles per cubic foot of air.

Besides practicing certain precautions concerning the use of the suction devices, it is felt that considerable improvement in the maintenance of these systems is indicated by the results obtained in the

present study. A good practice would be for each plant to delegate some man familiar with the ventilation system to inspect the various dust-removal devices once a week, in order to determine whether or not any pipes are clogged by granite chips, to see that all dust traps are kept free from excessive material, and that all leaks and imperfections in the ventilating pipes are repaired. By the use of a vane anemometer the air velocities at the surface of the exhaust hoods could be determined, thereby indicating whether or not each dust-removal device is functioning properly.

EXPERIMENTAL STUDIES ON GRANITE-DUST REMOVAL

The results of the studies made in the two plants equipped with local exhaust ventilation (plants X and Y) indicated that it is possible, with the system of dust removal in use at these plants, to keep the dust concentrations in most instances below 10,000,000 particles per cubic foot. However, it was felt that certain experimental evidence was necessary, in order to establish definitely the exhaust velocity needed to keep the dust concentration within the limits considered safe. This experimental study was conducted during the winter season in the south shed at plant X. A full description of this shed was presented in an earlier portion of this paper.

An unused section of this shed was selected in order that the dust generated by other workers would not interfere with the present tests. A granite cutter was detailed for this work and was instructed to maintain, if possible, the same working conditions for all tests. This experimental study consisted primarily in determining the amount of dust in the air at the breathing level of the worker under varying conditions of air velocity at the exhaust ducts. At the beginning and end of each test the exhaust velocity at the duct was measured by means of a calibrated vane anemometer of 2-inch diameter placed within a half inch of the opening of the exhaust duct. For the surface-cutting machines the exhaust velocities were determined with the adjustable hoods in place. By introducing a sliding damper in the branch ducts of both the hand-tool and surface-cutting dust-removal devices, it was possible to vary the exhaust velocity from zero to the maximum that the device was capable of producing under normal operating conditions. Each sample of dust was taken at the breathing level of the operator and several minutes after the operator had commenced cutting granite. Four types of pneumatic tools were studied, these being the 4-point hammer and the various bush hammers used in surface cutting, while the hand pneumatic tools studied were the diamond point and the various sizes and types of chisels. The distance of the surface-cutting hammers from the exhaust hood was kept the same for all tests.

Figure 5 presents a curve which clearly defines the relation between the degree of air velocity at the exhaust ducts and the amount of dust exposure for granite cutters using various pneumatic tools. This curve plainly indicates the extremely heavy dust concentration to which granite cutters are exposed when not provided with efficient dust-removal devices. However, with an exhaust velocity at the ducts of 1,500 linear feet per minute, no determinations exceeded 10 million particles per cubic foot of air. Increasing the velocity above 1,500 feet per minute does not materially reduce the dust concentration, since there is always a certain small quantity of dust in the general

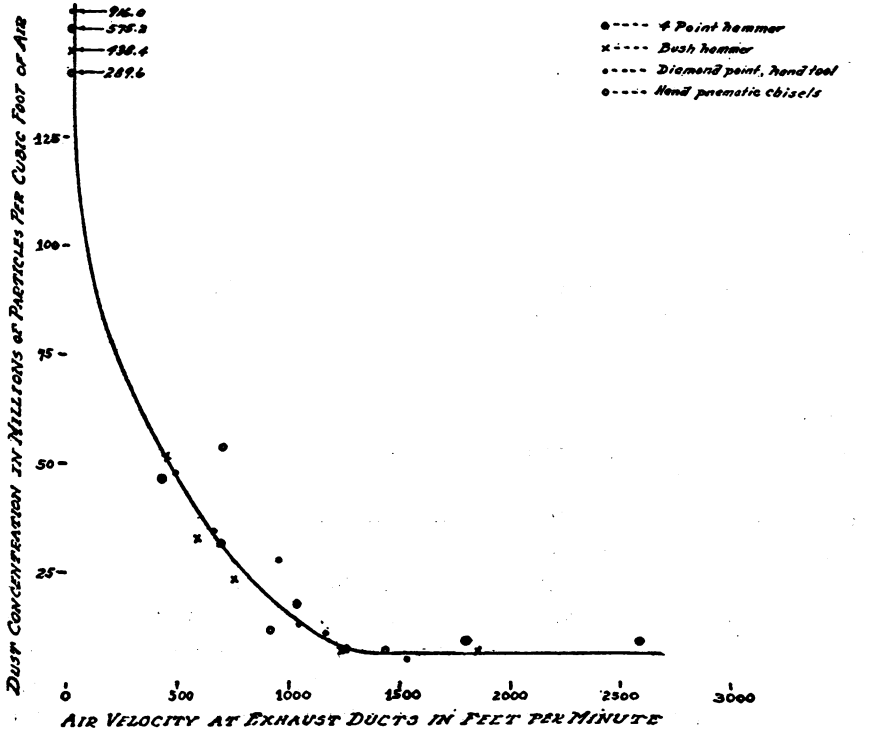

FIGURE 5.—Graph showing the relation between the degree of air velocity at exhaust ducts and the amount of dust inhaled by granite cutters using various pneumatic tools

plant atmosphere. It is felt that sufficient samples were obtained to establish the general trend of this curve, as may be noted from an examination of Figure 5. Hence, as a result of this additional study, one may conclude that, by maintaining exhaust velocities at 1,500 linear feet per minute, in connection with a dust-removal system of the type described in this paper, there will be no difficulty in keeping the dust concentration in granite-cutting plants below 10 million particles per cubic foot of air. This proposed standard for exhaust velocity is very easily attained with such a system, since, upon testing the air velocity at the exhaust ducts in plant X, the average velocities for both hand-tool and surface-cutting devices were found to be

around 1,500 feet per minute. Therefore, in proposing a velocity rate of 1,500 feet per minute, it is felt that no additional burden is being placed on the shoulders of granite manufacturers.

It is very interesting to note, at this point, that Winslow, Greenburg, and Angermyer, in a study to establish standards for measuring the efficiency of exhaust systems in polishing shops (6) found that good conditions were maintained in a polishing shop when the exhaust velocity at the opening of the exhaust pipes averaged about 2,500 feet per minute, with a minimum of 1,500 feet per minute.

In nearly every granite-cutting plant sand blasting is now a common procedure. Practically all the older plants that make use of the sand blast house this process in a room partitioned off from the other workers in the same shed. The sand blaster stays in this room while engaged in his work and receives some protection from dust by a helmet covering his entire head. In the more modern plants the sand blaster stands outside the room in which the object is being cleaned, as shown in Figure 4.

TABLE 6.—*Dust content of air of sand-blast rooms, showing the protection afforded by the use of helmets with and without positive air pressure*

	Average dust content	
	Millions of particles per cubic foot	Total dust, milligrams per cubic foot
Air of sand-blast room	157.1	20.63
Air under helmet using positive pressure	1.9	.40
Air under helmet not using positive pressure	11.7	1.04

Table 6 presents some figures concerning the advantage of using helmets supplied with positive air pressure over those not using positive air pressure in sand-blasting operations in which the operator stands inside the sand-blast room. The figures presented in Table 6 show that the amount of dust breathed by the operator using a helmet supplied with positive air pressure is only approximately one-sixth of that of the operator using a helmet without positive air pressure. These results are similar to those found by Winslow, Greenburg, and Reeves (7) in their study of the efficiency of certain devices used for the protection of sand blasters against the dust hazard.

SUMMARY

As a result of the dust studies conducted by the Public Health Service concerning the effect of the inhalation of industrial dusts upon the health of the worker, one is impressed with the need of knowledge of the efficiency of ventilation devices under practical operating conditions in various dusty industries. In this paper data have been

presented concerning the efficiency of certain ventilating devices in use in two modern granite-cutting plants, as well as certain experimental results obtained in one of these plants.

Prior to discussing the studies conducted in the plants using local exhaust ventilation, certain data were presented concerning the conditions existing in those plants not using modern dust removal devices. The older granite-cutting plants were those included in the extended investigation into the effects of silica dust of a known composition upon the health of the worker. This comprehensive investigation revealed the fact that granite workers are exposed to a dust recognized as highly injurious (containing about 35 per cent quartz) and of a potentially dangerous size, since practically all the dust examined was found to be less than 10 microns in diameter. Two hundred and twenty dust determinations made in the plants not using local exhaust ventilation, except in connection with indoor surface-cutting machines, revealed the fact that the majority of the workers were exposed to a large quantity of granite dust. A definite relationship was found between the magnitude of the dust exposure and the rapidity with which silicosis developed among the granite cutters. It also developed that an upper limit of allowable dustiness could be established, somewhere between 10 and 20 million particles per cubic foot of air. Hence, the next logical step was in the direction of the development of dust-removal devices of an efficiency and design that would keep the dust below this proposed standard.

Since excessive dustiness was found to be intimately connected with certain occupations, it was apparent that the remedial measure would depend upon the removal of dust at its source. Studies were made in certain granite-cutting plants that had made an attempt to remove the dust by the use of local exhaust ventilation, and the results of such investigations in two plants are presented in this paper. The system of ventilation in use at these plants is described in detail and the results of numerous exhaust velocity readings made at the working surface of the exhaust ducts are also given. The 44 dust determinations made in these two plants under normal operating conditions showed that in most instances it is possible to keep the dust concentration in the air of the sheds below 10 million particles per cubic foot. Those instances in which the dust concentration was found to be greatly in excess of 10 million particles were usually due to improper use of the dust-removal devices and to the lack of maintenance of the ventilating system.

Since the studies made in the plants, using local exhaust ventilation in connection with dust-creating occupations, indicated that there was need of further knowledge concerning the proper maintenance and use of the present type of ventilation system, a brief experi-

mental study was carried out in one of these plants. This experimental study was conducted chiefly for the purpose of determining the exhaust velocity necessary at the ventilating ducts to keep the dust down to a safe limit. These experimental tests were carried out in an unused portion of the shed, the same granite cutter creating dust for all tests by means of the various pneumatic tools in use in the industry. By means of an improvised blast gate inserted in the ventilating duct, it was possible to vary the exhaust velocity at the dust-removal hoods. Dust determinations were made at the breathing level of the operator and it was found, that irrespective of the type of pneumatic tool used, an exhaust velocity at the surface of the ventilating hood of 1,500 feet per minute (as measured by a calibrated vane anemometer) served to keep the dust exposure of the operator below 10 million particles per cubic foot of air. It was previously established that by proper maintenance of the system of ventilation in use at these plants, it is possible to maintain exhaust velocities at the dust removal hoods that will average 1,500 feet per minute. So that in proposing a velocity rate of 1,500 feet per minute it is felt that no additional burden is being placed on the shoulders of granite-cutting employers.

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RECENT STATE MORTALITY STATISTICS[a]

For the information of public health officials and others interested, the rates in the following tables have been computed from monthly mortality data furnished by the State health departments for the latest month for which records are available. For purposes of comparison, the mortality records for a few preceding years are given, the rates being those for the month corresponding to the latest month for which the 1928 or 1929 rate is available.

Monthly State mortality rates

[All rates are on an annual basis, and, with the exception of mortality from all causes, infant mortality and congenital malformations and diseases of early infancy, are per 100,000 population]

State	1928		1929							Corresponding month for—			
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	1928	1927	1926	1925
ALL CAUSES, ANNUAL RATE PER 1,000 POPULATION													
Alabama (total)	11.9	13.4	19.6	12.6	11.4	11.2	11.9	11.8	11.1	11.7	10.6	11.8	10.6
White	9.3	11.1	17.3	11.2	10.0	9.0	9.2	9.2	8.7	9.3	8.5	9.4	-----
Colored	16.6	17.5	26.9	17.2	15.7	15.3	16.9	16.8	15.7	16.3	14.4	16.0	-----
California	16.6	21.2	16.8	15.7	15.4	15.2	13.8	14.2	-----	12.9	-----	-----	-----
Connecticut	10.2	11.4	15.9	14.8	12.2	10.4	11.1	9.0	-----	10.5	9.3	10.3	10.9
Hawaii Territory	11.0	12.9	13.3	15.2	14.6	14.6	14.5	12.7	12.1	11.0	-----	-----	-----
Indiana	11.2	16.7	17.7	14.0	13.4	12.4	12.2	10.8	-----	10.8	11.4	11.1	10.8
Iowa	9.4	14.4	14.6	12.2	11.0	10.7	10.4	-----	-----	10.9	-----	-----	-----
Kansas	10.8	18.0	13.1	12.7	12.1	11.0	9.8	-----	-----	10.9	-----	-----	-----
Kentucky	10.4	11.7	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	11.9	15.7	18.8	13.4	12.1	11.5	11.2	11.6	-----	11.1	-----	-----	-----
White	9.4	13.0	16.0	10.9	9.7	8.8	8.2	8.2	-----	8.2	-----	-----	-----
Colored	16.7	20.6	24.1	18.0	16.3	16.5	16.7	16.9	-----	16.6	-----	-----	-----
Maryland	-----	-----	-----	-----	-----	-----	-----	-----	11.7	-----	-----	-----	-----
White	-----	-----	-----	-----	-----	-----	-----	-----	10.4	-----	-----	-----	-----
Colored	-----	-----	-----	-----	-----	-----	-----	-----	18.4	-----	-----	-----	-----
Michigan	11.3	16.2	17.0	12.9	13.2	12.7	13.2	11.7	10.8	10.0	-----	-----	-----
Minnesota	8.8	12.5	13.6	9.1	9.7	9.3	9.2	8.6	8.3	8.1	-----	-----	-----
Mississippi	11.4	16.7	23.1	14.0	13.0	11.8	11.1	12.6	11.7	10.1	-----	-----	-----
White	9.1	14.9	19.8	11.9	10.5	8.8	8.4	9.0	8.6	15.7	-----	-----	-----
Colored	13.5	18.4	26.1	15.9	15.3	14.6	13.7	15.9	14.5	13.0	-----	-----	-----
Nebraska	8.8	14.8	12.3	11.9	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	10.8	13.2	17.3	14.0	13.2	12.1	11.3	10.5	10.4	9.9	9.9	11.2	10.7
New York [1]	12.4	13.8	20.3	15.6	14.1	13.5	13.0	16.0	-----	12.8	12.6	12.9	13.9
North Carolina	11.1	17.5	16.2	15.7	12.6	11.7	11.9	-----	-----	11.7	-----	-----	-----
Pennsylvania	11.5	15.8	19.4	14.0	12.9	11.7	11.2	9.8	9.6	10.3	9.8	10.6	10.0
Rhode Island	-----	-----	19.1	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
South Dakota	8.1	14.1	10.8	9.6	8.9	-----	-----	-----	-----	9.8	-----	-----	-----
Tennessee	11.3	16.1	19.2	14.4	13.8	11.3	10.7	10.9	11.9	12.7	12.4	-----	-----
White	-----	-----	17.2	12.7	11.9	9.6	9.1	9.3	10.1	-----	-----	-----	-----
Colored	-----	-----	28.4	22.6	22.8	19.8	18.2	18.9	20.9	-----	-----	-----	-----
Virginia	-----	13.1	19.1	13.5	12.0	10.3	9.8	9.7	10.2	-----	-----	-----	-----
White	-----	11.5	17.3	11.3	10.0	8.8	7.8	8.0	8.8	-----	-----	-----	-----
Colored	-----	17.3	23.9	19.1	17.1	14.4	15.1	14.4	14.0	-----	-----	-----	-----
Wisconsin	-----	-----	14.5	11.8	11.2	11.1	10.6	10.0	-----	-----	-----	-----	-----

[1] Exclusive of New York City.

[a] From the Office of Statistical Investigations, United States Public Health Service.

Monthly State mortality rates—Continued

State	1928		1929							Corresponding month for—			
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	1928	1927	1926	1925
INFANT MORTALITY, PER 1,000 LIVE BIRTHS													
Alabama (total)	61	72	125	92	86	69	78	73	70	75	69	84	
White	49	60	100	79	79	62	66	69	67	65	65	79	
Colored	85	95	171	117	97	80	99	81	75	93	77	93	
California	69	76	66	73	74	69	65	63		60			
Connecticut	39	56	74	85	69	61	79	50		56	46	62	52
Hawaii Territory	80	113	100	120	129	117	109	108	89				
Indiana	54	81	97	83	70	60	63	48	52	52	50	59	62
Iowa	53	44	103	75	37	61	48			54			
Kansas	56	60	94	73	77	69	53			53			
Louisiana	68	73	94	75	76	86	91	95		81			
Maryland									70				
White									60				
Colored									105				
Michigan	69	86	112	71	71	67	69	57	53	49			
Minnesota	41	56	83	66	48	51	49	36	39				
Nebraska	45	80	79	81									
New Jersey	67	68	93	70	71	70	59	43		52			
New York [1]	63	70	87	81	77	70	64	52		67	61	71	58
Pennsylvania	65	90	118	95	81	69	65	51	49	54	50	62	57
Rhode Island			100										
South Dakota	70	59	85	99	66					72			
Tennessee			145	98	89	61	86	63	83				
Virginia	56	72	140	91	78	61		67	75				
Wisconsin	59	72	105	68	69	89	60	51	50	53			
CONGENITAL MALFORMATIONS AND DISEASES OF EARLY INFANCY (159-163), PER 1,000 LIVE BIRTHS													
Alabama (total)	21	23	37	27	31	27	34	29	27	26	35	30	
White	20	27	39	28	32	29	34	34	30	26	37	32	
Colored	25	18	39	26	28	24	34	20	21	26	31	28	
California	31	24	35	33	31	33	32	30		27			
Iowa	35	35	48	34	36	35	31			33			
Kansas	34	27	37	32	26	39	33			27			
Louisiana	25	25	26	21	29	31	32	34		28			
Maryland									36				
White									36				
Colored									36				
Michigan	37	39	45	37	34	35	38	33	36	20			
Minnesota	25	20	37	35	30	33	32	26	28				
Nebraska	37	34	30	33									
New York [1]	39	40	43	43	41	38	41	35		41	41	41	34
Pennsylvania	34	37	41	38	33	34	35	32	30	31	29	35	30
Rhode Island			45										
South Dakota	38	28	36	43	29					41			
Tennessee			36	28	27	20	26	28	29				
TYPHOID FEVER (1)													
Alabama	9.5	6.0	1.3	1.4	2.2	5.7	5.5	11.4	12.4	15.1	21.1	21.8	29.1
California	1.1	1.0	1.0	2.6	2.1	1.6	1.6	1.9		4.0			
Connecticut			.7				1.4	1.5					
Hawaii Territory	3.5			3.7	13.5	3.5	3.4	3.5	6.6	6.8			
Indiana	7.7	3.0	1.5	.4	.4	3.4	1.5	2.3	7.0	1.5	4.1	5.7	
Iowa	2.5	3.4	1.5	1.1	.5	2.6	1.0			.5			
Kansas	2.0	1.3	1.3	1.4	1.9	1.3	1.3						
Kentucky	29.1	13.4	6.5	5.1	3.7								
Louisiana	12.5	7.8	6.0	4.0	3.6	11.2	14.5	10.0		15.6			
Maryland									5.1				
Michigan	1.6	1.3	1.5	.9	.3	1.9	2.1	1.9	1.5	2.6			
Minnesota		.4		.4		.5	.4	1.3	2.6				
Mississippi	10.9	7.9	6.6	2.9	6.6	4.1	7.2	15.6	19.7	15.2			
Nebraska	1.7	3.3	3.3	.9									
New Jersey	2.9	.9	.6	1.0	.3	.3	1.9	.3	1.9	2.5	1.3		
New York [1]	3.1	1.7	1.0	.9	.4	.6	.6	2.1		1.1	.7	1.8	3.3
North Carolina	5.8	7.2	2.4	1.8	2.4	2.1	3.2			2.4			
Pennsylvania	2.1	1.3	1.4	2.0	.8	.4	1.8	2.3	2.5	2.0	3.0	3.1	3.3
South Carolina	14.4	12.6	3.2	9.1	3.2	3.9	10.1	22.8	25.3	45.5	38.9		
South Dakota		6.7	3.3	3.7						1.7			
Tennessee	21.4	8.9	2.4	2.1	2.8	2.9	5.2	7.3	19.3	21.2			
Virginia	6.1	2.3	2.7	.5	.9	.9	5.9	3.8	7.8				
Wisconsin	1.2	.8	.4	1.3	2.0	1.2	.4	.8	.8				

[1] Exclusive of New York City.

Monthly State mortality rates—Continued

State	1928		1929							Corresponding month for—			
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	1928	1927	1926	1925
MEASLES (7)													
Alabama	0.9	3.2	3.9	3.4	3.9	5.7	3.2	2.8	1.4	8.3	5.6	8.5	----
California	----	.3	----	.6	1.3	----	.5	----	----	.3	----	----	----
Connecticut	.7	2.2	3.6	4.8	7.2	7.4	6.5	3.7	----	8.3	----	----	----
Hawaii Territory	----	3.4	3.4	3.7	3.4	----	16.9	17.4	13.2	----	----	----	----
Indiana	.8	1.1	3.0	4.9	10.4	13.4	7.0	5.0	.4	1.5	1.1	5.3	----
Iowa	----	----	1.0	.5	1.9	2.5	1.9	----	----	.5	----	----	----
Kansas	----	----	----	.7	3.8	5.3	7.1	----	----	2.6	----	----	----
Kentucky	1.4	.9	1.4	4.1	3.7	----	----	----	----	----	----	----	----
Louisiana	.6	1.8	4.8	5.3	6.0	4.4	4.2	----	----	7.5	----	----	----
Michigan	1.1	1.3	1.3	1.1	5.1	7.7	9.2	5.0	2.3	3.6	----	----	----
Minnesota	----	1.3	5.2	2.6	5.2	5.8	4.3	4.9	1.3	.4	----	----	----
Mississippi	4.8	4.6	5.3	12.4	18.4	7.5	5.3	2.0	2.0	2.8	----	----	----
Nebraska	----	.8	----	1.9	----	----	----	----	----	----	----	----	----
New Jersey	1.0	.9	.9	2.4	1.8	2.2	.6	1.0	.3	4.6	.6	----	----
New York [1]	1.3	1.5	5.8	4.4	5.0	3.6	4.1	2.1	----	7.4	3.3	6.5	7.5
North Carolina	1.2	2.0	1.2	2.7	.4	.8	.8	----	----	21.2	----	----	----
Pennsylvania	2.3	2.8	7.4	7.0	6.5	6.0	5.9	3.8	1.8	2.8	1.1	4.3	2.8
Rhode Island	----	----	18.1	----	----	----	----	----	----	----	----	----	----
South Carolina	.7	----	----	----	----	----	.6	----	----	5.7	3.2	----	----
South Dakota	----	----	----	----	10.0	----	----	----	----	1.7	----	----	----
Tennessee	.5	.5	----	----	.9	1.0	.5	.5	1.5	4.2	----	----	----
Virginia	.9	2.7	2.7	1.0	3.2	2.4	3.7	.9	.5	----	----	----	----
Wisconsin	1.2	.4	2.0	2.2	2.4	7.0	6.0	4.5	2.0	.9	----	----	----
SCARLET FEVER (8)													
Alabama	1.4	----	1.7	1.4	1.7	----	----	0.9	1.4	----	----	----	----
California	1.9	2.1	1.8	2.6	2.6	3.7	4.4	2.9	----	.8	----	----	----
Connecticut	----	----	2.2	----	2.9	.7	.7	.7	----	3.8	----	----	----
Indiana	1.9	2.6	6.3	5.7	4.4	3.8	4.4	3.4	1.5	1.5	1.5	0.7	----
Iowa	2.0	7.3	2.4	4.3	2.9	3.5	1.9	----	----	.5	----	----	----
Kansas	5.3	2.6	5.8	5.0	6.4	6.0	2.6	----	----	7.1	----	----	----
Kentucky	3.3	.9	5.5	6.1	5.1	----	----	----	----	----	----	----	----
Louisiana	3.1	.6	----	----	1.2	.6	1.8	----	----	.6	----	----	----
Maryland	----	----	----	----	----	----	----	----	1.5	----	----	----	----
Michigan	2.7	5.9	4.4	5.4	5.4	7.7	3.3	2.7	1.5	1.8	----	----	----
Minnesota	1.3	1.7	6.1	2.2	3.9	2.7	2.2	----	1.3	2.2	----	----	----
Nebraska	.9	2.5	6.7	8.3	----	----	----	----	----	----	----	----	----
New Jersey	.6	1.8	1.5	1.4	1.2	2.2	1.5	1.6	.3	1.2	----	----	----
New York [1]	2.8	1.7	4.5	3.7	3.1	2.6	2.3	1.1	----	2.8	2.0	1.8	1.3
North Carolina	1.7	1.6	2.4	1.8	1.2	2.9	2.4	----	----	1.2	----	----	----
Pennsylvania	2.0	3.1	4.8	3.3	3.0	3.3	3.1	2.1	1.4	.9	1.5	2.4	2.0
Rhode Island	----	----	3.3	----	----	----	----	----	----	----	----	----	----
South Carolina	.7	1.9	1.3	----	----	----	1.3	.7	1.3	.6	----	----	----
South Dakota	1.7	3.3	1.7	5.6	6.0	----	----	----	----	1.7	----	----	----
Tennessee	1.9	2.8	1.4	4.7	3.3	2.9	2.8	----	.9	.9	----	----	----
Virginia	2.8	2.3	1.4	1.0	1.8	----	.5	.5	----	----	----	----	----
Wisconsin	3.3	3.6	2.4	4.4	3.6	5.4	.4	2.9	2.0	2.0	----	----	----
WHOOPING COUGH (9)													
Alabama	6.2	6.9	9.1	10.1	7.0	10.4	10.1	10.4	17.4	11.0	16.9	23.7	9.1
California	6.4	10.9	7.0	4.3	7.2	8.3	9.0	10.2	----	8.5	----	----	----
Connecticut	2.3	2.9	6.5	4.0	2.9	.7	2.2	3.0	----	15.1	----	----	----
Hawaii Territory	----	20.2	30.4	37.4	40.5	83.7	67.5	38.3	16.4	----	----	----	----
Indiana	.8	5.6	7.0	6.2	6.3	6.5	7.0	6.5	4.8	4.1	5.6	10.2	----
Iowa	2.0	5.3	5.3	3.2	6.3	8.0	4.8	----	----	4.9	----	----	----
Kansas	3.3	2.6	5.8	7.8	5.8	4.6	2.6	----	----	7.7	----	----	----
Kentucky	4.8	7.4	10.6	13.8	8.8	----	----	----	----	----	----	----	----
Louisiana	5.6	7.8	5.4	6.7	6.0	7.5	6.0	6.9	----	13.1	----	----	----
Maryland	----	----	----	----	----	----	----	----	7.3	----	----	----	----
Michigan	3.2	10.0	7.2	7.7	4.6	7.2	8.2	5.6	3.3	1.8	----	----	----
Minnesota	3.6	6.5	9.1	6.1	4.3	4.9	5.2	.9	4.8	2.6	----	----	----
Mississippi	6.8	5.9	11.2	10.2	11.2	14.3	10.5	17.7	12.5	8.3	----	----	----
Nebraska	----	5.0	3.3	1.9	----	----	----	----	----	----	----	----	----
New Jersey	2.5	4.9	13.3	6.8	6.2	5.7	4.0	2.2	2.8	2.5	3.8	----	----
New York [1]	2.8	1.7	6.2	5.0	5.4	4.3	3.3	2.1	----	2.1	2.7	7.0	3.0
North Carolina	2.9	4.4	9.2	8.4	5.2	7.5	9.6	----	----	7.6	----	----	----
Pennsylvania	7.4	12.0	12.4	8.4	5.2	4.8	4.3	4.3	5.0	3.7	4.6	7.8	5.7
Rhode Island	----	----	3.3	----	----	----	----	----	----	----	----	----	----
South Carolina	2.6	7.6	3.2	9.1	7.6	13.1	17.1	22.8	18.3	12.0	24.9	----	----
South Dakota	3.5	----	1.7	3.7	3.3	----	----	----	----	1.7	----	----	----
Tennessee	3.9	5.2	10.4	6.8	4.2	6.3	7.5	6.3	13.7	6.1	----	----	----
Virginia	.9	6.4	18.3	9.1	6.9	6.1	8.2	9.9	12.8	----	----	----	----
Wisconsin	.8	3.2	2.4	3.5	3.2	6.6	5.6	4.9	4.4	2.0	----	----	----

[1] Exclusive of New York City.

Monthly State mortality rates—Continued

State	1928		1929							Corresponding month for—			
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	1928	1927	1926	1925
DIPHTHERIA (10)													
Alabama	23.7	17.9	10.0	3.9	4.3	2.8	2.3	1.4	2.8	1.8	3.8	1.9	2.4
California	5.1	5.4	4.9	3.7	1.8	3.7	3.4	4.3	------	4.8	------	------	------
Connecticut	6.0	8.0	3.6	4.0	2.9	3.7	4.3	3.7	------	2.3	------	------	------
Hawaii Territory	7.0	6.7	3.4	11.2	13.5	20.9	6.7	10.5	6.6	20.2	------	------	------
Indiana	10.0	10.0	5.9	5.7	3.7	5.0	3.3	1.5	2.2	1.9	3.7	3.8	------
Iowa	5.0	4.4	------	------	.5	2.0	1.5	------	------	1.0	------	------	------
Kansas	5.3	7.1	2.6	2.8	4.5	4.6	1.3	------	------	2.6	------	------	------
Kentucky	25.7	17.5	12.5	10.2	5.1	------	------	------	------	------	------	------	------
Louisiana	14.4	16.3	4.2	8.7	3.0	2.5	5.4	3.1	------	1.9	------	------	------
Maryland	------	------	------	------	------	------	------	------	1.5	------	------	------	------
Michigan	9.3	12.8	12.1	8.5	12.6	10.3	11.3	13.0	9.8	6.2	------	------	------
Minnesota	3.1	5.2	2.2	2.2	3.0	2.2	2.6	.9	2.6	2.2	------	------	------
Mississippi	12.9	15.1	6.6	5.8	2.0	2.0	------	1.4	1.3	6.9	------	------	------
Nebraska	6.1	4.2	5.0	5.6	------	------	------	------	------	------	------	------	------
New Jersey	11.8	14.2	20.6	13.0	10.2	10.5	10.5	9.9	8.9	9.6	8.2	------	------
New York [1]	4.6	3.8	4.5	3.4	3.7	2.4	3.1	4.1	------	4.4	6.0	4.3	7.0
North Carolina	29.4	26.4	16.8	10.2	4.8	4.1	1.6	------	------	2.0	------	------	------
Pennsylvania	10.9	10.8	10.3	7.1	9.2	6.8	5.7	5.7	4.4	4.8	6.2	6.3	6.7
Rhode Island	------	------	6.6	------	------	------	------	------	------	------	------	------	------
South Carolina	22.2	24.6	6.3	4.9	6.9	2.0	4.4	3.3	1.9	.6	------	------	------
South Dakota	3.5	1.7	------	1.9	------	------	------	------	------	3.3	------	------	------
Tennessee	24.8	18.8	7.5	4.7	4.7	2.9	3.3	2.9	1.4	2.4	------	------	------
Virginia	15.6	12.3	8.2	4.6	7.8	1.9	1.4	1.4	2.7	------	------	------	------
Wisconsin	3.7	4.8	2.8	3.1	2.0	.8	4.4	2.5	1.6	3.6	------	------	------
INFLUENZA (11)													
Alabama	37.9	164.7	762.7	236.7	117.9	53.2	43.6	19.5	9.6	21.1	10.3	11.8	------
White	35.5	152.8	711.4	241.3	110.0	47.1	32.2	18.1	8.4	16.8	6.6	8.1	------
Colored	42.2	185.9	973.1	261.3	150.4	64.0	77.8	21.8	11.9	29.0	17.1	18.4	------
California	127.1	254.0	91.5	47.2	40.1	23.5	13.4	7.5	------	14.4	------	------	------
Connecticut	9.0	34.3	196.6	133.5	40.9	21.5	9.3	3.7	------	6.6	8.4	14.0	11.9
Hawaii Territory	27.9	30.4	23.6	20.9	23.6	38.3	27.0	20.9	19.7	23.6	------	------	------
Indiana	24.1	267.7	341.4	131.3	66.0	36.4	21.1	13.0	11.1	13.7	9.3	7.5	8.0
Iowa	16.0	256.5	312.3	101.5	57.7	28.1	28.6	------	------	67.9	------	------	------
Kansas	29.2	392.7	221.4	120.8	85.3	46.4	29.5	------	------	78.9	------	------	------
Kentucky	38.1	142.0	818.6	281.9	98.7	------	------	------	------	------	------	------	------
Louisiana	34.3	162.4	490.9	179.8	95.4	41.8	19.9	11.8	------	28.1	------	------	------
White	31.8	144.5	424.3	140.4	76.5	30.8	14.9	9.6	------	22.2	------	------	------
Colored	38.9	195.3	613.2	252.2	130.2	61.9	29.1	15.9	------	38.9	------	------	------
Maryland	------	------	------	------	------	------	------	------	2.2	------	------	------	------
White	------	------	------	------	------	------	------	------	.9	------	------	------	------
Colored	------	------	------	------	------	------	------	------	9.1	------	------	------	------
Michigan	13.8	157.2	237.7	76.9	39.5	24.1	21.8	10.2	6.7	9.0	------	------	------
Minnesota	16.1	150.1	231.9	55.4	38.9	19.2	17.7	6.7	4.3	13.8	------	------	------
Mississippi	38.7	213.7	897.9	172.5	118.3	42.8	27.0	17.7	11.2	13.8	------	------	------
Nebraska	30.2	367.9	219.9	108.3	------	------	------	------	------	------	------	------	------
New Jersey	11.5	45.0	164.2	59.4	25.0	15.0	10.2	2.2	2.2	3.7	.9	2.6	2.0
New York [1]	13.7	37.5	235.4	98.2	36.6	23.1	13.0	3.3	------	18.9	8.2	9.5	6.8
North Carolina	35.2	195.2	375.5	281.3	116.2	59.2	37.3	------	------	34.1	------	------	------
Pennsylvania	21.0	172.3	357.9	95.6	55.0	26.9	20.6	10.0	6.7	10.2	5.9	7.5	5.2
Rhode Island	------	------	231.9	------	------	------	------	------	------	------	------	------	------
South Carolina	60.7	353.7	382.2	172.7	98.5	51.6	29.7	17.6	13.9	8.8	2.6	------	------
South Dakota	27.7	224.1	249.2	124.1	45.2	------	------	------	------	60.2	------	------	------
Tennessee	34.5	225.9	644.7	252.2	153.9	71.0	33.4	18.0	13.2	16.0	7.6	------	------
White	------	------	596.1	238.2	141.4	61.6	27.8	14.7	11.9	------	------	------	------
Colored	------	------	880.3	319.8	214.6	116.6	60.5	34.1	19.2	------	------	------	------
Virginia	21.7	155.0	591.2	192.9	88.2	48.7	19.2	9.9	5.0	------	------	------	------
White	19.6	149.8	585.8	156.7	63.2	36.6	11.4	5.9	1.9	------	------	------	------
Colored	27.3	168.9	605.3	287.5	153.8	80.3	39.7	20.6	13.2	------	------	------	------
Wisconsin	16.5	199.8	269.1	75.9	36.3	27.2	20.7	9.9	7.2	11.6	------	------	------

[1] Exclusive of New York City.

Monthly State mortality rates—Continued

State	1928		1929							Corresponding month for—			
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	1928	1927	1926	1925
POLIOMYELITIS (22)													
Alabama	-----	1.8	0.4	2.4	0.4	0.9	-----	2.8	0.5	1.4	0.9	0.9	-----
California	1.6	1.3	.3	.9	.8	.8	2.1	.8	-----	1.1	-----	-----	-----
Connecticut	-----	.7	-----	-----	-----	-----	-----	1.5	-----	-----	-----	-----	-----
Hawaii Territory	-----	-----	-----	-----	-----	-----	3.4	-----	-----	-----	-----	-----	-----
Indiana	1.2	.4	.7	-----	.4	-----	-----	.4	-----	-----	-----	-----	-----
Iowa	.5	1.5	1.9	-----	1.5	.5	-----	-----	-----	1.0	-----	-----	-----
Kansas	.7	.6	.6	-----	.6	-----	-----	-----	-----	-----	-----	-----	-----
Kentucky	1.4	.9	.9	1.0	.5	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	1.9	-----	-----	.7	1.2	1.3	.6	-----	-----	1.2	-----	-----	-----
Michigan	.8	.8	1.3	.3	.8	.5	.5	.8	1.0	.3	-----	-----	-----
Minnesota	4.0	-----	-----	.9	-----	.4	.9	-----	-----	1.3	-----	-----	-----
Mississippi	.7	-----	-----	1.5	.7	1.4	-----	2.0	2.0	2.8	-----	-----	-----
New Jersey	1.0	-----	.3	.3	.6	-----	.3	.6	.6	.9	-----	-----	-----
New York [1]	2.0	.4	.6	.7	.2	.2	.4	.2	-----	.2	.2	.2	0.5
North Carolina	1.7	.4	.4	.4	1.6	1.2	.8	-----	-----	1.2	-----	-----	-----
Pennsylvania	.6	1.1	.6	.6	.4	-----	.5	.7	.5	.5	.6	.5	.9
South Carolina	.7	-----	.6	.7	.6	-----	1.3	-----	.6	1.9	1.3	-----	-----
South Dakota	1.7	3.3	3.3	3.7	-----	-----	-----	-----	-----	1.7	-----	-----	-----
Tennessee	1.5	4.2	.9	.5	.9	.5	1.9	1.5	1.9	.9	-----	-----	-----
Virginia	.5	1.8	.5	-----	1.4	.9	-----	-----	.9	-----	-----	-----	-----
Wisconsin	.4	.8	-----	.4	-----	-----	.8	1.2	.4	-----	-----	-----	-----
LETHARGIC ENCEPHALITIS (23)													
Alabama	0.5	-----	1.8	0.5	2.3	1.9	0.5	0.5	0.9	0.5	-----	-----	-----
California	1.6	1.8	3.4	1.4	1.0	2.4	1.6	1.3	-----	1.3	-----	-----	-----
Connecticut	-----	.7	.7	3.2	2.2	-----	1.4	.7	-----	.8	-----	-----	-----
Hawaii Territory	-----	-----	-----	-----	-----	-----	-----	-----	3.3	-----	-----	-----	-----
Indiana	-----	-----	1.9	.8	1.1	1.5	.7	1.1	.7	-----	-----	-----	-----
Iowa	.5	1.9	2.4	1.6	2.4	1.0	1.5	-----	-----	2.4	-----	-----	-----
Kansas	-----	3.2	.6	-----	.6	.7	2.6	-----	-----	1.9	-----	-----	-----
Kentucky	.5	-----	.5	.5	-----	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	.6	1.2	-----	-----	1.2	-----	1.8	-----	-----	.6	-----	-----	-----
Michigan	1.1	1.0	1.5	1.1	1.0	1.6	2.3	2.1	.5	1.8	-----	-----	-----
Minnesota	1.3	3.0	3.5	2.2	2.0	1.8	1.7	4.0	2.6	1.3	-----	-----	-----
Mississippi	-----	-----	-----	.7	.7	1.4	.7	-----	-----	-----	-----	-----	-----
Nebraska	.9	.8	-----	2.8	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	1.3	.3	2.2	1.7	1.5	1.0	1.2	1.9	.6	2.5	-----	-----	-----
New York [1]	.4	1.1	1.2	.9	1.2	.7	.8	2.4	-----	.7	0.2	0.9	2.0
North Carolina	.8	.8	.4	1.8	.8	.4	.4	-----	-----	.4	-----	-----	-----
Pennsylvania	1.5	1.0	1.3	2.0	1.0	1.2	1.2	.6	1.0	1.2	1.4	1.1	1.0
South Carolina	2.0	.6	1.3	1.4	5.1	2.0	4.4	3.3	-----	1.3	2.6	-----	-----
South Dakota	-----	1.7	1.7	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Tennessee	.5	.5	-----	1.0	-----	1.5	-----	.5	1.9	1.9	-----	-----	-----
Virginia	.9	-----	2.3	.5	1.4	2.4	.5	.9	-----	-----	-----	-----	-----
Wisconsin	1.2	.8	.4	2.2	2.0	1.6	2.8	2.5	2.8	.8	-----	-----	-----
MENINGOCOCCUS MENINGITIS (24)													
Alabama	-----	-----	1.4	3.9	1.5	-----	0.5	0.9	0.5	0.5	-----	-----	-----
California	2.7	7.2	11.1	10.3	14.2	12.6	13.2	9.4	-----	1.9	-----	-----	-----
Connecticut	-----	2.2	-----	2.4	3.6	.7	1.4	-----	-----	1.5	-----	-----	-----
Hawaii Territory	3.5	6.7	10.1	18.7	70.9	38.3	50.6	27.9	19.7	-----	-----	-----	-----
Indiana	.8	1.5	1.1	-----	1.1	1.9	3.0	1.9	1.1	-----	-----	-----	-----
Iowa	-----	1.5	2.4	3.8	2.9	2.0	1.5	-----	-----	1.0	-----	-----	-----
Kansas	2.0	1.3	3.8	5.0	3.8	2.7	3.2	-----	-----	1.9	-----	-----	-----
Louisiana	-----	3.0	1.2	4.7	4.2	5.6	1.8	1.9	-----	.6	-----	-----	-----
Michigan	3.2	4.6	6.9	12.5	29.8	37.9	41.8	27.8	19.2	2.6	-----	-----	-----
Minnesota	.9	3.9	3.0	2.6	.4	2.2	1.7	1.3	3.5	3.0	-----	-----	-----
Mississippi	.7	2.0	1.3	.7	.7	.7	-----	.7	1.3	1.4	-----	-----	-----
Nebraska	3.5	-----	.8	7.4	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	1.9	3.1	3.4	2.4	2.5	2.2	4.6	2.2	2.2	2.2	-----	-----	-----
New York [1]	.2	.6	.6	1.8	1.0	2.1	1.4	.6	-----	.9	0.4	0.5	0.5
North Carolina	-----	.4	-----	.4	.4	.4	1.2	-----	-----	-----	-----	-----	-----
Pennsylvania	1.1	1.3	1.7	2.8	3.1	2.2	3.4	1.2	1.6	.9	.1	.8	.1
Rhode Island	-----	-----	1.6	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
South Carolina	2.6	2.5	1.3	2.8	3.2	3.9	2.5	2.0	1.9	.6	1.3	-----	-----
South Dakota	1.7	-----	-----	3.7	10.0	-----	-----	-----	-----	1.7	-----	-----	-----
Tennessee	.5	2.8	1.9	1.0	3.9	3.4	1.9	1.5	2.8	-----	-----	-----	-----
Virginia	.9	.9	1.8	1.5	1.8	1.4	2.7	.9	1.4	-----	-----	-----	-----
Wisconsin	3.7	3.6	.4	6.6	10.0	2.9	3.6	4.5	1.2	2.0	-----	-----	-----

[1] Exclusive of New York City.

Monthly State mortality rates—Continued

State	1928		1929							Corresponding month for—			
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	1928	1927	1926	1925
TUBERCULOSIS, ALL FORMS (31-37)													
Alabama (total)	80.6	73.0	76.6	83.6	80.5	91.8	88.1	81.3	86.5	93.1	87.2	98.9	97.8
White	39.1	44.9	54.7	62.9	51.9	55.0	45.6	39.1	45.6	50.5	49.6	58.4	-----
Colored	158.0	125.3	129.2	134.2	146.4	159.4	167.4	159.4	163.5	172.7	155.3	170.9	-----
California	129.0	146.0	137.5	147.9	149.4	138.6	139.6	130.3	-----	128.4	-----	-----	-----
Connecticut	53.5	66.4	66.0	77.1	68.2	64.5	66.0	61.5	-----	73.9	65.2	86.6	84.3
Hawaii Territory	90.6	141.7	108.0	89.6	91.2	121.9	124.8	129.0	111.8	114.7	-----	-----	-----
Indiana	56.7	80.5	78.2	76.8	79.7	81.6	74.9	81.2	58.2	57.5	70.3	68.6	72.3
Iowa	31.1	38.8	34.9	38.7	35.4	40.6	37.3	-----	-----	45.6	-----	-----	-----
Kansas	39.1	35.9	39.1	50.4	41.1	36.5	41.1	-----	-----	43.6	-----	-----	-----
Kentucky	109.1	97.8	116.2	121.0	91.3	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	77.4	85.7	128.0	91.6	92.4	104.2	90.6	99.2	-----	96.1	-----	-----	-----
White	44.3	52.2	88.6	61.9	50.4	54.9	47.6	53.0	-----	42.4	-----	-----	-----
Colored	138.0	147.3	200.4	146.0	169.6	194.7	169.6	184.1	-----	194.7	-----	-----	-----
Maryland	-----	-----	-----	-----	-----	-----	-----	-----	99.8	-----	-----	-----	-----
White	-----	-----	-----	-----	-----	-----	-----	-----	67.6	-----	-----	-----	-----
Colored	-----	-----	-----	-----	-----	-----	-----	-----	268.8	-----	-----	-----	-----
Michigan	64.1	69.2	80.0	72.1	72.3	80.6	85.7	71.3	66.2	62.8	-----	-----	-----
Minnesota	47.8	50.2	49.3	48.4	60.1	65.3	55.8	57.2	49.7	43.7	-----	-----	-----
Mississippi	80.2	90.1	84.2	72.1	96.0	98.5	91.4	95.8	83.5	78.2	-----	-----	-----
White	41.3	41.4	45.5	45.8	53.8	41.3	38.6	39.9	30.3	48.3	-----	-----	-----
Colored	115.8	134.7	119.6	96.2	134.7	150.9	139.8	147.0	132.2	105.6	-----	-----	-----
Nebraska	21.6	19.2	30.9	38.9	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	63.7	65.9	76.4	84.3	84.7	84.7	76.1	70.1	75.5	68.4	71.3	92.8	79.5
New York [1]	67.2	67.1	84.8	82.8	76.3	80.6	82.3	78.4	-----	82.9	86.6	96.3	106.0
North Carolina	69.2	84.2	91.0	91.0	89.4	102.7	91.4	-----	-----	93.8	-----	-----	-----
Pennsylvania	55.5	67.3	79.6	69.4	66.7	68.8	69.6	63.6	62.3	68.9	65.5	71.0	75.7
Rhode Island	-----	-----	65.8	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
South Carolina	65.9	94.7	64.4	65.0	77.7	71.2	87.8	94.0	79.0	87.8	95.7	-----	-----
South Dakota	43.2	60.2	53.5	57.4	48.5	-----	-----	-----	-----	80.3	-----	-----	-----
Tennessee	118.2	145.9	140.7	145.9	139.3	146.9	133.2	140.5	112.9	134.1	136.0	-----	-----
White	-----	-----	121.5	119.4	113.0	107.4	102.8	109.1	79.0	-----	-----	-----	-----
Colored	-----	-----	233.8	274.1	266.8	338.3	280.6	292.8	277.6	-----	-----	-----	-----
Virginia	71.3	88.3	116.1	85.6	84.1	93.6	96.9	78.4	82.3	-----	-----	-----	-----
White	45.0	67.0	101.8	65.8	56.3	53.6	58.8	45.7	49.3	-----	-----	-----	-----
Colored	138.4	143.9	153.8	137.3	157.1	198.3	196.8	164.1	168.7	-----	-----	-----	-----
Wisconsin	47.8	48.6	44.3	47.7	63.8	72.9	47.8	63.4	48.3	52.2	-----	-----	-----
CANCER, ALL FORMS (43-49)													
Alabama (total)	54.0	50.5	33.1	45.9	41.3	45.0	48.2	54.7	50.8	49.1	52.5	44.0	41.0
White	59.4	48.4	38.6	49.7	46.3	55.8	52.6	53.6	58.9	49.1	50.3	50.3	-----
Colored	43.6	54.1	27.7	30.7	38.2	40.9	39.6	55.9	35.6	48.8	56.6	32.9	-----
California	141.5	164.1	151.4	129.6	135.4	140.7	146.0	144.5	-----	131.4	-----	-----	-----
Connecticut	110.1	118.2	98.3	114.4	118.4	103.0	116.2	100.8	-----	113.8	98.9	96.8	101.8
Hawaii Territory	59.3	50.6	54.0	89.6	54.0	59.3	67.5	80.2	59.2	74.7	-----	-----	-----
Indiana	105.0	100.5	100.8	98.5	90.0	101.9	110.9	90.0	107.1	87.1	109.5	105.2	86.7
Iowa	112.2	121.2	97.5	116.0	114.0	112.7	109.1	-----	-----	114.0	-----	-----	-----
Kansas	104.1	117.4	84.7	107.3	91.8	96.8	86.6	-----	-----	93.0	-----	-----	-----
Kentucky	72.0	57.7	65.0	61.8	46.6	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	64.3	77.3	67.6	64.2	61.0	77.4	75.5	63.0	-----	61.8	-----	-----	-----
White	59.7	85.8	68.1	37.9	58.2	73.2	86.7	66.5	-----	64.6	-----	-----	-----
Colored	72.6	61.7	66.8	78.5	62.5	85.0	54.8	56.6	-----	56.6	-----	-----	-----
Maryland	-----	-----	-----	-----	-----	-----	-----	-----	96.9	-----	-----	-----	-----
White	-----	-----	-----	-----	-----	-----	-----	-----	99.7	-----	-----	-----	-----
Colored	-----	-----	-----	-----	-----	-----	-----	-----	82.0	-----	-----	-----	-----
Michigan	92.0	96.4	100.3	96.0	96.9	98.3	89.0	86.7	100.5	92.3	-----	-----	-----
Minnesota	100.1	110.7	109.9	84.8	112.9	112.2	98.6	96.5	97.3	107.3	-----	-----	-----
Mississippi	50.9	53.9	37.5	56.8	45.4	51.6	52.6	61.1	38.8	39.4	-----	-----	-----
White	61.3	67.6	45.5	65.6	56.5	57.0	55.2	78.4	44.1	42.7	-----	-----	-----
Colored	41.6	41.6	30.2	48.8	35.3	46.8	50.4	45.5	34.0	36.4	-----	-----	-----
Nebraska	102.0	78.6	70.2	93.5	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	104.4	119.9	100.1	116.7	115.9	105.7	110.9	117.8	123.3	97.7	118.1	99.2	104.7
New York [1]	115.5	115.5	138.1	136.0	115.4	117.9	128.4	118.1	-----	117.2	117.6	113.7	133.3
Pennsylvania	100.7	94.4	102.1	99.8	101.4	96.6	98.0	91.0	100.4	99.3	93.6	96.4	92.2
Rhode Island	-----	-----	136.5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
South Carolina	47.0	49.3	34.1	37.8	32.2	36.6	49.1	43.1	43.6	46.7	36.4	-----	-----
South Dakota	76.0	87.0	53.5	63.0	51.8	-----	-----	-----	-----	66.9	-----	-----	-----
Tennessee	54.0	66.4	49.4	59.9	57.4	63.2	53.6	56.9	62.1	70.6	64.9	-----	-----
White	-----	-----	48.2	59.1	58.5	62.2	50.5	52.8	61.3	-----	-----	-----	-----
Colored	-----	-----	55.0	64.0	52.3	68.2	68.8	76.8	66.0	-----	-----	-----	-----
Virginia	61.0	63.6	55.3	63.3	63.6	56.7	59.4	56.2	68.6	-----	-----	-----	-----
White	66.6	72.0	58.1	67.9	65.1	62.0	63.8	59.4	75.8	-----	-----	-----	-----
Colored	46.1	41.3	48.0	51.3	59.5	42.7	48.0	47.9	49.6	-----	-----	-----	-----
Wisconsin	103.0	111.2	98.1	109.0	97.3	104.7	104.9	96.8	111.2	111.6	-----	-----	-----

[1] Exclusive of New York City.

Monthly State mortality rates—Continued

State	1928		1929							Corresponding month for—			
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	1928	1927	1926	1925
DIABETES (57)													
Alabama (total)	9.5	10.1	17.0	6.3	5.2	10.9	6.4	10.0	6.4	6.4	6.1	3.3	3.8
White	9.4	11.9	18.9	8.5	4.9	12.3	5.6	12.3	4.9	4.2	8.7	3.7	-----
Colored	9.5	6.5	15.8	2.9	6.6	8.2	7.9	5.4	9.2	10.5	1.3	2.6	-----
California	24.8	33.3	28.9	28.9	25.6	21.4	18.1	19.0	-----	17.6	-----	-----	-----
Connecticut	15.8	14.6	15.8	23.8	21.5	14.1	17.2	11.9	-----	18.1	-----	-----	-----
Hawaii Territory	7.0	6.7	13.5	3.7	10.1	13.9	16.9	17.4	19.7	6.8	-----	-----	-----
Indiana	10.7	14.8	17.8	14.8	16.7	13.8	14.1	11.9	12.2	-----	-----	-----	-----
Iowa	17.0	29.6	29.1	18.3	16.0	18.0	21.3	-----	-----	19.4	-----	-----	-----
Kansas	15.3	38.5	30.2	22.0	22.5	22.5	19.2	-----	-----	18.6	-----	-----	-----
Kentucky	10.0	10.2	12.9	10.2	11.1	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	11.9	12.7	15.7	15.4	17.5	7.0	10.3	6.2	-----	8.1	-----	-----	-----
White	15.4	14.0	20.5	17.5	22.4	6.7	8.4	2.9	-----	10.6	-----	-----	-----
Colored	5.3	10.3	6.8	11.4	8.6	7.1	13.7	12.4	-----	3.5	-----	-----	-----
Maryland	-----	-----	-----	-----	-----	-----	-----	-----	21.9	-----	-----	-----	-----
White	-----	-----	-----	-----	-----	-----	-----	-----	20.8	-----	-----	-----	-----
Colored	-----	-----	-----	-----	-----	-----	-----	-----	22.8	-----	-----	-----	-----
Michigan	19.6	26.4	26.4	21.9	22.8	21.2	23.3	19.3	20.3	16.9	-----	-----	-----
Minnesota	21.9	26.0	28.1	18.6	21.2	13.9	14.7	15.2	9.5	13.4	-----	-----	-----
Mississippi	3.4	14.5	11.8	5.8	10.5	6.8	7.2	2.0	8.6	5.9	-----	-----	-----
White	2.9	17.9	15.2	3.1	6.9	7.1	6.9	1.4	8.3	4.1	-----	-----	-----
Colored	3.9	11.3	8.8	8.4	13.9	6.5	7.6	2.6	8.8	7.5	-----	-----	-----
Nebraska	22.5	40.1	26.8	16.7	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	23.9	26.2	33.9	27.0	22.8	24.5	22.2	22.6	22.8	16.0	-----	-----	-----
New York [1]	20.4	28.2	41.6	29.8	28.1	22.9	27.1	22.3	-----	24.6	25.0	23.9	20.0
Pennsylvania	21.3	26.2	31.7	26.2	22.5	23.4	21.8	16.2	15.2	18.6	16.1	17.9	15.5
Rhode Island	-----	-----	24.7	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
South Carolina	6.5	17.7	7.0	11.2	8.8	5.2	7.6	3.3	10.7	3.8	3.2	-----	-----
South Dakota	10.4	31.8	28.4	11.1	28.4	-----	-----	-----	-----	25.1	-----	-----	-----
Tennessee	13.6	8.5	11.8	10.4	12.2	9.2	10.4	9.2	8.0	6.1	-----	-----	-----
White	-----	-----	13.1	12.6	13.6	8.2	10.2	7.6	9.1	-----	-----	-----	-----
Colored	-----	-----	5.5	-----	5.5	14.2	11.0	17.2	2.8	-----	-----	-----	-----
Virginia	9.0	13.3	19.7	8.6	7.8	10.9	7.8	7.1	10.1	-----	-----	-----	-----
White	10.4	11.4	22.1	6.3	7.6	13.1	5.1	6.5	9.5	-----	-----	-----	-----
Colored	5.1	18.2	13.2	14.7	8.3	5.1	14.9	8.6	11.6	-----	-----	-----	-----
DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE (70-86)													
Alabama (total)	106.4	109.4	92.4	95.8	100.7	108.3	111.2	97.9	87.0	90.1	-----	-----	-----
White	89.1	100.9	80.6	86.9	95.3	97.0	99.5	79.7	69.4	75.0	-----	-----	-----
Colored	139.0	125.3	114.7	112.4	110.8	129.4	133.2	132.2	120.0	118.7	-----	-----	-----
California	154.1	181.2	161.8	150.8	142.4	143.4	125.0	139.9	-----	132.5	-----	-----	-----
Iowa	130.8	144.0	143.5	170.2	141.1	144.3	134.3	-----	-----	142.6	-----	-----	-----
Kansas	161.8	215.0	154.6	162.0	170.0	139.2	143.7	-----	-----	146.3	-----	-----	-----
Kentucky	117.7	107.5	122.2	112.3	98.7	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	106.1	122.6	115.3	105.6	89.4	91.7	91.2	101.7	-----	89.8	-----	-----	-----
White	80.9	117.5	99.8	94.0	68.1	80.0	64.3	85.8	-----	71.3	-----	-----	-----
Colored	152.2	131.9	143.9	127.1	128.5	113.3	140.5	131.0	-----	123.9	-----	-----	-----
Maryland	-----	-----	-----	-----	-----	-----	-----	-----	115.8	-----	-----	-----	-----
White	-----	-----	-----	-----	-----	-----	-----	-----	114.5	-----	-----	-----	-----
Colored	-----	-----	-----	-----	-----	-----	-----	-----	123.0	-----	-----	-----	-----
Michigan	126.4	161.8	174.1	142.5	151.8	138.6	145.2	126.1	115.2	118.5	-----	-----	-----
Minnesota	80.9	99.9	109.4	95.6	112.5	99.7	100.8	82.2	91.3	-----	-----	-----	-----
Nebraska	102.8	117.9	122.1	133.3	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	113.7	118.9	147.6	131.0	132.2	128.3	112.5	96.5	103.5	98.6	107.1	123.5	108.6
New York [1]	136.6	148.4	194.2	175.4	170.0	150.4	160.3	119.7	-----	145.7	149.4	157.0	184.8
Pennsylvania	119.8	129.1	153.4	135.5	131.4	122.4	119.6	94.0	96.0	-----	-----	-----	-----
Rhode Island	-----	-----	182.5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
South Dakota	82.9	130.5	60.2	103.7	98.7	-----	-----	-----	-----	90.3	-----	-----	-----
Tennessee	-----	-----	105.9	104.7	117.2	103.6	106.4	104.1	98.8	-----	-----	-----	-----
White	-----	-----	94.2	96.2	104.5	90.3	85.9	91.5	81.8	-----	-----	-----	-----
Colored	-----	-----	162.3	146.2	178.8	167.7	206.3	250.2	181.4	-----	-----	-----	-----
Virginia	106.8	119.8	155.9	142.8	123.9	125.7	108.4	108.7	111.6	-----	-----	-----	-----
White	84.2	85.3	127.0	114.8	106.8	101.2	88.4	89.5	97.3	-----	-----	-----	-----
Colored	165.8	210.0	231.6	216.1	168.7	189.9	160.4	158.9	148.9	-----	-----	-----	-----

[1] Exclusive of New York City.

Monthly State mortality rates—Continued

State	1928		1929							Corresponding month for—			
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	1928	1927	1926	1925
CEREBRAL HEMORRHAGE, APOPLEXY (74)													
Alabama (total)	58.8	65.0	50.9	55.1	53.9	63.7	68.4	56.6	56.3	56.4	46.0	53.0	-----
White	51.4	65.9	45.6	52.8	57.5	54.3	58.9	44.9	42.8	45.6	41.5	43.6	-----
Colored	72.2	63.3	68.6	65.7	55.4	79.0	84.4	76.3	81.8	75.2	53.9	-----	-----
California	112.2	128.7	113.5	105.6	97.7	100.9	91.7	95.3	-----	92.1	-----	-----	-----
Hawaii Territory	76.7	67.5	60.7	71.0	40.5	48.8	50.6	45.3	72.4	57.4	-----	-----	-----
Indiana	109.6	140.1	138.7	126.0	120.1	104.2	107.1	106.5	104.5	90.8	93.4	91.2	85.6
Iowa	95.7	106.2	102.8	125.6	92.6	108.7	98.4	-----	-----	105.7	-----	-----	-----
Kansas	131.3	165.5	127.0	132.1	133.5	110.8	112.9	-----	-----	106.5	-----	-----	-----
Kentucky	66.7	60.9	70.1	66.9	58.1	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	73.6	84.5	77.9	64.8	54.3	61.2	62.2	61.8	-----	63.6	-----	-----	-----
White	54.9	83.0	59.7	56.8	41.0	51.1	44.8	49.1	-----	48.2	-----	-----	-----
Colored	108.0	87.3	111.3	79.6	73.8	79.6	94.2	84.9	-----	92.0	-----	-----	-----
Maryland	-----	-----	-----	-----	-----	-----	-----	-----	88.9	-----	-----	-----	-----
White	-----	-----	-----	-----	-----	-----	-----	-----	88.5	-----	-----	-----	-----
Colored	-----	-----	-----	-----	-----	-----	-----	-----	91.1	-----	-----	-----	-----
Michigan	87.5	115.2	122.1	99.1	112.1	100.2	102.3	89.6	80.0	83.9	-----	-----	-----
Minnesota	63.0	74.4	81.3	69.6	84.4	71.5	77.9	63.0	64.0	-----	-----	-----	-----
Mississippi	66.6	73.0	80.9	78.6	69.7	64.5	77.6	63.2	71.0	58.5	-----	-----	-----
White	65.5	64.8	78.6	79.4	77.2	59.8	66.2	58.4	55.2	53.8	-----	-----	-----
Colored	67.7	80.6	83.1	78.1	63.0	69.0	88.2	67.6	85.6	62.8	-----	-----	-----
Nebraska	71.7	86.1	101.2	95.4	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	86.0	90.3	107.5	98.9	97.4	90.1	85.1	67.2	75.5	73.6	-----	-----	-----
New York [1]	107.2	113.2	158.2	138.5	126.8	115.6	120.8	95.1	-----	113.5	113.8	114.1	139.5
Pennsylvania	92.0	94.9	112.6	98.1	92.7	88.4	87.5	71.7	67.0	-----	-----	-----	-----
Rhode Island	-----	-----	159.5	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
South Dakota	51.9	78.6	43.5	59.3	60.2	-----	-----	-----	-----	60.2	-----	-----	-----
Tennessee	-----	-----	58.4	60.4	59.8	55.9	69.6	59.3	53.2	-----	-----	-----	-----
White	-----	-----	49.4	55.9	55.1	45.8	53.4	51.6	47.1	-----	-----	-----	-----
Colored	-----	-----	101.8	82.2	82.5	105.2	148.6	96.7	82.5	-----	-----	-----	-----
Virginia	70.9	82.8	108.8	102.3	90.5	90.3	71.3	78.4	84.6	-----	-----	-----	-----
White	56.2	56.9	93.5	82.6	72.7	73.1	57.5	63.4	74.6	-----	-----	-----	-----
Colored	109.4	150.5	148.9	153.8	137.3	135.0	107.5	117.9	110.8	-----	-----	-----	-----
DISEASES OF THE CIRCULATORY SYSTEM, (87-96)													
Alabama (total)	150.8	151.5	153.8	142.9	132.7	141.4	149.2	134.3	132.3	145.2	-----	-----	-----
White	124.6	128.3	136.0	120.3	110.7	119.5	113.5	107.9	89.7	114.9	-----	-----	-----
Colored	200.3	195.1	187.2	185.4	174.1	182.6	216.2	183.9	212.3	184.6	-----	-----	-----
California	387.8	496.7	427.7	383.4	372.4	360.2	335.7	326.1	-----	280.4	-----	-----	-----
Iowa	234.0	329.8	313.8	287.2	268.2	282.6	271.6	-----	-----	238.1	-----	-----	-----
Kansas	193.6	277.2	232.3	216.7	198.3	198.9	198.9	-----	-----	197.0	-----	-----	-----
Kentucky	202.5	192.3	232.4	193.5	191.9	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	202.2	274.1	307.9	242.0	213.7	209.6	195.0	195.9	-----	168.5	-----	-----	-----
White	165.7	230.3	270.4	194.7	179.0	164.8	148.3	154.2	-----	134.9	-----	-----	-----
Colored	269.0	354.6	376.8	330.0	277.5	292.0	280.9	272.6	-----	230.1	-----	-----	-----
Maryland	-----	-----	-----	-----	-----	-----	-----	-----	239.7	-----	-----	-----	-----
White	-----	-----	-----	-----	-----	-----	-----	-----	230.7	-----	-----	-----	-----
Colored	-----	-----	-----	-----	-----	-----	-----	-----	282.5	-----	-----	-----	-----
Michigan	241.7	345.2	347.3	273.2	276.7	266.3	278.5	245.4	215.2	197.5	-----	-----	-----
Minnesota	194.4	269.5	253.9	185.6	191.6	178.8	189.5	176.1	171.3	-----	-----	-----	-----
Nebraska	188.4	243.3	217.4	216.6	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	254.7	307.2	391.3	344.9	305.4	297.4	258.5	255.1	233.9	209.2	202.9	204.1	184.5
New York [1]	358.2	384.7	545.9	441.9	382.3	369.9	341.2	297.2	-----	342.5	319.0	316.0	314.3
Pennsylvania	243.2	330.2	369.3	299.7	278.4	259.7	248.0	217.5	206.7	-----	-----	-----	-----
Rhode Island	-----	-----	-----	347.0	-----	-----	-----	-----	-----	-----	-----	-----	-----
South Carolina	284.6	384.1	262.1	292.3	291.2	269.6	296.9	312.0	272.9	305.1	295.5	-----	-----
South Dakota	160.7	224.1	162.2	150.0	155.5	-----	-----	-----	-----	182.3	-----	-----	-----
Tennessee	-----	-----	162.8	159.4	160.0	136.6	149.2	149.8	142.6	-----	-----	-----	-----
White	-----	-----	147.0	134.5	130.0	116.2	132.3	119.1	113.0	-----	-----	-----	-----
Colored	-----	-----	239.3	280.2	305.4	235.9	231.1	298.5	285.8	-----	-----	-----	-----
Virginia	156.4	204.4	242.8	217.7	218.6	164.4	185.2	174.3	149.1	-----	-----	-----	-----
White	131.9	180.7	223.7	194.5	174.4	150.9	159.9	145.0	130.8	-----	-----	-----	-----
Colored	220.4	266.3	292.7	278.3	334.1	200.0	251.4	251.2	196.8	-----	-----	-----	-----

[1] Exclusive of New York City.

Monthly State mortality rates—Continued

State	1928		1929							Corresponding month for—			
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	1928	1927	1926	1925
DISEASES OF THE HEART (87-90)													
Alabama (total)	138.9	140.9	138.3	125.6	117.9	132.6	140.4	125.0	124.0	125.7	91.5	100.3	-----
White	115.2	115.6	129.7	108.6	103.0	110.8	105.1	96.3	86.9	102.3	73.6	71.0	-----
Colored	182.6	187.2	175.4	175.2	163.5	171.7	205.7	177.1	193.8	168.5	123.7	152.5	-----
California	344.5	442.4	372.4	338.2	329.2	317.0	299.0	286.3	-----	243.0	-----	-----	-----
Connecticut	198.3	196.3	256.1	219.2	212.4	194.3	190.9	155.0	-----	160.6	155.7	193.5	162.3
Hawaii Territory	108.1	108.0	114.7	141.9	138.5	132.5	141.7	118.5	92.1	97.8	-----	-----	-----
Indiana	204.6	269.5	230.6	198.7	243.2	199.2	228.0	222.2	187.6	149.4	160.7	131.2	140.8
Iowa	209.5	292.9	281.3	254.0	233.7	251.1	239.6	-----	-----	215.8	-----	-----	-----
Kansas	171.1	249.0	207.3	185.4	173.9	173.1	175.2	-----	-----	169.4	-----	-----	-----
Kentucky	154.4	169.3	194.6	158.3	160.0	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	187.8	260.2	290.4	221.3	193.8	192.8	183.6	177.8	-----	157.9	-----	-----	-----
White	152.2	219.1	252.7	178.6	160.4	150.3	137.1	137.8	-----	122.4	-----	-----	-----
Colored	253.1	335.7	359.7	299.6	255.2	270.8	268.9	251.3	-----	223.0	-----	-----	-----
Maryland	-----	-----	-----	-----	-----	-----	-----	-----	204.0	-----	-----	-----	-----
White	-----	-----	-----	-----	-----	-----	-----	-----	198.6	-----	-----	-----	-----
Colored	-----	-----	-----	-----	-----	-----	-----	-----	232.4	-----	-----	-----	-----
Michigan	205.7	299.3	347.3	235.7	240.8	238.5	240.0	218.1	185.2	173.4	-----	-----	-----
Minnesota	157.8	231.4	208.9	150.5	147.5	100.1	152.7	136.8	140.6	120.7	-----	-----	-----
Mississippi	89.7	99.3	105.9	112.8	99.3	106.7	111.8	108.0	127.0	111.1	-----	-----	-----
White	86.9	95.1	104.8	114.5	102.0	95.5	95.1	84.1	91.0	82.7	-----	-----	-----
Colored	92.4	103.3	107.0	111.5	97.0	117.1	127.2	130.1	159.9	137.0	-----	-----	-----
Nebraska	181.5	223.3	194.8	196.3	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	233.7	278.0	361.5	324.4	277.6	276.1	236.0	226.7	214.8	191.4	-----	-----	-----
New York [1]	312.0	297.1	483.7	391.7	338.9	322.0	292.6	257.9	-----	300.7	275.0	278.1	269.8
Pennsylvania	222.0	301.8	336.9	273.9	248.8	232.3	221.3	196.7	185.9	189.0	164.0	183.0	141.0
Rhode Island	-----	-----	304.2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
South Dakota	138.3	204.0	153.9	129.6	138.8	-----	-----	-----	-----	163.9	-----	-----	-----
Tennessee	123.5	158.6	149.2	148.0	150.1	125.0	137.9	135.7	128.0	124.7	-----	-----	-----
White	-----	-----	133.4	125.1	121.5	92.7	122.6	108.5	97.7	-----	-----	-----	-----
Colored	-----	-----	225.6	258.9	288.9	201.8	211.8	267.2	274.8	-----	-----	-----	-----
Virginia	143.6	188.4	220.4	193.4	202.6	149.3	171.0	156.4	129.5	-----	-----	-----	-----
White	119.5	168.1	202.9	171.4	160.5	134.5	145.4	129.3	121.3	-----	-----	-----	-----
Colored	206.8	241.5	266.3	250.9	312.6	188.0	238.2	227.3	186.9	-----	-----	-----	-----
DISEASES OF THE RESPIRATORY SYSTEM (97-107)													
Alabama (total)	111.1	141.4	287.8	123.1	125.4	102.6	84.7	61.0	37.1	42.1	-----	-----	-----
White	91.3	114.2	236.0	100.9	114.9	84.7	63.1	48.5	24.5	34.3	-----	-----	-----
Colored	148.5	192.5	383.7	165.0	145.1	136.2	125.3	84.5	60.7	56.7	-----	-----	-----
California	159.2	216.6	143.4	152.2	167.2	139.1	98.5	92.1	-----	75.3	-----	-----	-----
Iowa	67.6	159.5	174.1	112.7	91.2	82.2	71.3	-----	-----	91.2	-----	-----	-----
Kansas	61.0	185.4	105.2	135.0	141.2	86.2	50.0	-----	-----	69.9	-----	-----	-----
Kentucky	130.1	152.7	311.8	197.6	134.2	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	102.9	185.4	232.5	126.3	129.2	80.5	65.2	61.8	-----	51.2	-----	-----	-----
White	79.0	145.5	185.6	87.8	97.9	51.1	42.0	49.1	-----	37.6	-----	-----	-----
Colored	146.9	258.6	318.6	197.2	186.7	134.5	107.9	84.9	-----	76.1	-----	-----	-----
Maryland	-----	-----	-----	-----	-----	-----	-----	-----	56.1	-----	-----	-----	-----
White	-----	-----	-----	-----	-----	-----	-----	-----	34.7	-----	-----	-----	-----
Colored	-----	-----	-----	-----	-----	-----	-----	-----	168.6	-----	-----	-----	-----
Michigan	107.9	219.8	253.9	155.5	147.0	130.1	121.8	87.5	42.6	51.3	-----	-----	-----
Minnesota	78.2	153.1	163.9	74.8	83.1	74.2	71.8	49.2	35.0	-----	-----	-----	-----
Nebraska	83.0	194.8	138.0	131.5	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	95.8	486.9	357.5	203.0	174.1	116.9	101.4	62.7	50.5	47.1	53.1	-----	-----
New York [1]	104.4	145.8	332.7	185.4	152.6	134.2	109.2	73.6	-----	93.1	87.9	96.8	96.0
Pennsylvania	112.7	254.2	316.7	184.2	164.4	117.6	99.1	67.1	47.7	-----	-----	-----	-----
Rhode Island	-----	-----	353.6	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
South Dakota	69.1	145.5	162.2	98.1	92.0	-----	-----	-----	-----	117.1	-----	-----	-----
Tennessee	-----	-----	234.4	157.3	156.7	97.7	74.8	50.1	44.7	-----	-----	-----	-----
White	-----	-----	206.6	133.9	127.7	83.3	59.0	37.5	36.9	-----	-----	-----	-----
Colored	-----	-----	368.6	271.1	297.1	167.7	151.3	110.9	82.5	-----	-----	-----	-----
Virginia	77.5	113.9	145.0	132.6	119.8	79.9	71.8	41.6	35.2	-----	-----	-----	-----
White	-----	-----	111.9	98.7	97.3	61.4	53.7	30.7	31.0	-----	-----	-----	-----
Colored	-----	-----	231.6	221.6	178.6	128.2	119.1	70.1	46.3	-----	-----	-----	-----

[1] Exclusive of New York City.

Monthly State mortality rates—Continued

State	1928		1929							Corresponding month for—			
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	1928	1927	1926	1925
PNEUMONIA, ALL FORMS (100,101)													
Alabama (total)	99.6	131.2	261.9	111.6	110.5	97.9	79.8	53.4	32.5	35.8	30.5	45.9	46.8
White	81.1	104.4	227.1	93.9	107.2	80.4	60.3	41.3	21.7	30.1	27.7	35.5	----
Colored	133.5	180.6	366.5	160.6	133.2	129.4	116.0	76.3	52.7	46.1	35.5	64.4	----
California	139.9	190.5	123.5	135.6	152.5	119.4	83.0	76.9	----	65.7	----	----	----
Connecticut	71.6	118.9	254.7	232.0	142.8	104.5	86.8	54.1	----	72.4	47.5	61.7	57.3
Hawaii Territory	97.6	141.7	145.1	254.0	158.7	217.5	202.4	139.4	121.7	138.3	----	----	----
Indiana	80.1	233.2	270.3	169.5	137.9	83.5	85.6	50.2	24.8	30.0	28.8	44.9	27.8
Iowa	60.6	145.0	155.2	96.1	77.6	71.7	40.2	----	----	80.5	----	----	----
Kansas	50.4	159.1	93.0	113.0	125.8	76.9	41.1	----	----	56.5	----	----	----
Kentucky	108.2	132.4	285.9	180.3	116.7	----	----	----	----	----	----	----	----
Louisiana	88.6	170.3	215.0	111.6	118.3	68.0	52.5	58.0	----	41.2	----	----	----
White	----	----	168.8	80.5	88.6	41.4	31.7	45.3	----	34.7	----	----	----
Colored	----	----	299.7	168.8	173.0	116.8	90.8	81.4	----	58.4	----	----	----
Maryland	----	----	----	----	----	----	----	----	46.6	----	----	----	----
White	----	----	----	----	----	----	----	----	27.8	----	----	----	----
Colored	----	----	----	----	----	----	----	----	145.8	----	----	----	----
Michigan	90.1	190.3	224.7	136.5	125.2	114.2	105.7	73.4	33.6	37.4	----	----	----
Minnesota	70.2	147.5	156.2	71.4	72.2	68.4	65.3	39.8	28.1	30.7	----	----	----
Mississippi	76.8	142.0	191.4	107.0	110.4	63.2	38.8	26.5	15.1	25.0	----	----	----
White	65.5	106.2	171.0	103.8	106.2	48.4	41.4	17.1	13.8	16.5	----	----	----
Colored	87.2	175.0	201.3	110.1	114.6	76.8	36.5	35.0	16.4	32.7	----	----	----
Nebraska	76.0	179.0	119.6	115.7	----	----	----	----	----	----	----	----	----
New Jersey	83.7	160.5	326.9	187.3	153.8	99.4	91.2	51.6	44.1	39.4	23.9	----	----
New York [1]	89.4	128.5	297.6	165.8	135.6	116.7	92.4	62.8	----	80.2	70.2	78.7	76.0
North Carolina	78.7	151.9	185.2	177.5	130.2	113.5	81.0	----	----	93.4	----	----	----
Pennsylvania	97.1	228.6	285.1	162.0	142.8	97.7	85.0	52.7	38.9	45.3	45.1	54.1	44.5
Rhode Island	----	----	317.4	----	----	----	----	----	----	----	----	----	----
South Carolina	95.9	164.2	140.2	125.2	130.1	90.7	77.1	62.0	37.9	44.2	40.8	----	----
South Dakota	60.5	117.1	142.2	77.8	85.3	----	----	----	----	100.3	----	----	----
Tennessee	91.9	122.4	215.1	146.4	140.7	86.6	66.4	39.4	33.9	38.1	33.2	----	----
White	----	----	186.2	125.1	114.7	73.9	53.4	31.7	28.4	----	----	----	----
Colored	----	----	354.9	249.8	266.8	147.8	129.3	76.8	60.5	----	----	----	----
Virginia	64.3	98.3	131.2	120.5	104.7	68.0	60.4	36.9	26.5	----	----	----	----
White	47.7	80.3	101.1	90.3	87.2	50.9	44.9	28.1	24.0	----	----	----	----
Colored	107.7	145.5	210.1	199.6	150.5	112.8	100.9	59.8	33.1	----	----	----	----
Wisconsin	79.1	164.3	161.9	120.5	88.9	84.5	78.9	49.0	30.3	40.7	----	----	----
DISEASES OF THE DIGESTIVE SYSTEM, (108-127)													
Alabama (total)	67.1	67.7	54.5	51.2	155.6	61.9	106.2	147.5	139.1	161.5	----	----	----
White	72.4	66.6	47.7	46.6	141.6	46.3	101.6	143.4	136.0	171.0	----	----	----
Colored	57.2	69.9	67.2	59.9	182.0	91.3	114.7	155.3	145.0	143.7	----	----	----
California	105.0	103.6	86.3	85.6	91.2	94.5	92.0	103.9	----	117.5	----	----	----
Hawaii Territory	122.0	145.1	222.7	186.8	209.2	198.7	182.2	174.3	180.9	111.3	----	----	----
Iowa	64.6	62.6	52.9	58.0	73.7	66.6	62.1	----	----	61.1	----	----	----
Kansas	76.9	80.2	67.4	63.9	73.1	84.2	62.9	----	----	81.5	----	----	----
Kentucky	89.6	67.2	53.0	52.1	55.3	----	----	----	----	----	----	----	----
Louisiana	87.4	80.3	70.0	78.2	80.9	78.6	112.3	128.5	----	134.1	----	----	----
White	65.5	71.8	68.1	76.4	79.3	56.9	87.7	86.7	----	106.0	----	----	----
Colored	127.4	95.9	73.6	81.5	83.9	118.6	157.6	205.3	----	185.8	----	----	----
Maryland	----	----	----	----	----	----	----	----	96.2	----	----	----	----
White	----	----	----	----	----	----	----	----	80.7	----	----	----	----
Colored	----	----	----	----	----	----	----	----	173.1	----	----	----	----
Michigan	84.5	90.8	84.4	92.2	82.8	80.6	90.5	89.0	78.2	81.3	----	----	----
Minnesota	57.7	58.4	56.7	59.3	62.3	63.5	67.9	59.0	64.5	----	----	----	----
Nebraska	65.7	60.2	72.8	81.5	----	----	----	----	----	----	----	----	----
New Jersey	68.5	74.6	72.7	61.1	86.3	76.1	75.8	73.6	74.6	82.0	89.8	98.8	101.7
New York [1]	72.4	73.0	70.9	71.9	74.2	69.9	71.5	62.0	----	70.9	75.1	80.1	91.8
Pennsylvania	73.8	72.2	73.3	74.8	73.6	75.0	61.4	62.9	71.5	----	----	----	----
Rhode Island	----	----	88.8	----	----	----	----	----	----	----	----	----	----
South Dakota	70.9	87.0	46.8	72.2	68.6	----	----	----	----	70.2	----	----	----
Tennessee	----	----	44.2	60.4	66.8	70.0	71.1	110.9	171.8	----	----	----	----
White	----	----	36.3	47.1	60.7	55.1	63.0	142.1	160.7	----	----	----	----
Colored	----	----	79.8	124.9	96.3	142.1	110.0	104.4	225.4	----	----	----	----
Virginia	48.7	51.7	35.7	48.1	55.8	52.0	60.4	102.5	104.3	----	----	----	----
White	41.1	39.8	30.3	38.5	46.1	47.7	36.7	73.8	87.9	----	----	----	----
Colored	68.4	82.7	49.6	73.3	81.0	63.2	122.4	177.7	147.2	----	----	----	----

[1] Exclusive of New York City.

Monthly State mortality rates—Continued

State	1928		1929							Corresponding month for—			
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	1928	1927	1926	1925
DIARRHEA AND ENTERITIS UNDER 2 YEARS (113)													
Alabama (total)	13.7	13.3	3.9	5.8	7.0	12.4	40.8	64.8	62.7	84.4	47.8	100.3	-----
White	16.7	13.3	2.8	3.9	10.5	5.8	38.5	65.9	67.3	89.7	48.1	109.4	-----
Colored	8.2	13.2	6.6	10.2	1.3	24.5	44.8	62.7	54.1	73.8	47.4	84.1	-----
California	15.0	18.9	9.6	9.2	8.5	11.2	17.6	23.0	-----	29.4	-----	-----	-----
Connecticut	4.5	3.6	5.0	15.9	5.7	5.2	11.5	8.2	-----	5.3	9.2	3.1	15.9
Hawaii Territory	59.3	104.6	145.1	104.6	141.7	129.0	111.3	97.6	118.4	74.2	-----	-----	-----
Indiana	12.6	5.2	8.2	6.6	11.9	5.7	7.4	10.3	25.6	20.0	20.9	31.7	57.8
Iowa	4.5	1.9	5.8	1.1	2.9	4.5	2.9	-----	-----	3.4	-----	-----	-----
Kansas	12.6	8.3	7.7	5.7	12.2	7.3	4.5	-----	-----	6.4	-----	-----	-----
Kentucky	34.3	12.5	8.3	8.2	8.3	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	23.7	3.0	13.9	19.4	26.0	22.4	34.4	49.3	-----	51.8	-----	-----	-----
White	19.3	-----	12.1	17.5	23.3	15.4	21.4	27.0	-----	35.6	-----	-----	-----
Colored	31.8	8.6	17.1	22.7	30.8	35.4	58.2	90.3	-----	81.4	-----	-----	-----
Michigan	15.1	13.3	11.8	19.2	9.0	11.1	12.6	11.4	10.0	14.6	-----	-----	-----
Minnesota	4.9	3.0	2.6	4.3	4.3	3.6	3.9	3.1	2.2	-----	-----	-----	-----
Mississippi	12.2	8.5	2.6	4.4	7.2	12.2	32.9	55.0	50.0	77.6	-----	-----	-----
White	8.6	11.0	2.8	3.1	4.1	14.3	28.9	59.8	49.6	81.3	-----	-----	-----
Colored	15.6	6.3	2.5	5.6	10.1	10.4	36.6	105.4	50.4	74.1	-----	-----	-----
Nebraska	2.6	3.3	5.0	9.3	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	14.0	12.6	11.1	7.2	10.2	10.5	7.7	6.4	10.2	16.6	21.0	21.4	26.5
New York [1]	10.0	7.4	9.9	9.6	9.5	7.9	8.7	7.2	-----	13.5	11.7	15.1	13.8
North Carolina	26.1	30.1	10.4	10.2	4.0	11.2	38.5	-----	-----	29.7	-----	-----	-----
Pennsylvania	15.8	15.9	15.1	14.0	15.2	12.3	10.2	8.6	15.6	18.6	18.9	22.7	39.1
South Dakota	12.1	8.4	1.7	5.6	6.7	-----	-----	-----	-----	11.7	-----	-----	-----
Tennessee	19.9	18.4	3.2	3.6	8.9	6.8	10.4	38.9	77.7	94.6	68.7	-----	-----
White	-----	-----	2.3	3.8	8.0	5.3	7.4	38.7	74.4	-----	-----	-----	-----
Colored	-----	-----	8.3	3.1	13.8	14.2	24.8	39.8	93.5	-----	-----	-----	-----
Virginia	9.0	7.3	3.7	5.6	5.5	3.3	12.3	37.3	50.3	-----	-----	-----	-----
White	8.5	4.4	3.2	4.2	4.4	3.3	6.3	18.9	41.7	-----	-----	-----	-----
Colored	10.3	14.9	5.0	9.2	8.3	3.4	28.1	85.5	72.8	-----	-----	-----	-----
Wisconsin	4.5	13.6	8.8	15.9	14.4	11.9	14.8	9.5	6.8	12.4	-----	-----	-----
NEPHRITIS (128, 129)													
Alabama (total)	100.2	98.8	85.1	85.6	95.2	91.7	104.3	96.9	95.2	101.1	-----	-----	-----
White	75.3	91.8	72.2	76.0	78.5	79.7	80.6	71.0	84.1	74.3	-----	-----	-----
Colored	147.1	112.1	109.4	103.6	126.6	114.4	149.0	145.8	116.0	151.6	-----	-----	-----
California	130.1	142.7	119.4	128.5	106.5	128.2	106.7	108.7	-----	105.2	-----	-----	-----
Connecticut	67.1	61.3	81.1	100.9	67.4	68.2	116.2	54.9	-----	89.0	-----	-----	-----
Hawaii Territory (129)	66.2	64.0	87.7	48.6	81.0	73.2	50.6	76.7	42.8	50.6	-----	-----	-----
Indiana	82.7	96.4	81.6	85.4	100.1	95.0	92.7	74.3	73.8	71.2	84.1	75.4	76.1
Iowa	46.6	56.3	53.8	56.9	60.1	61.6	56.7	-----	-----	52.4	-----	-----	-----
Kansas	108.7	122.0	105.9	104.4	98.8	94.8	93.0	-----	-----	94.3	-----	-----	-----
Kentucky	84.5	86.7	104.2	84.8	68.7	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	124.2	138.9	116.5	131.7	111.1	112.3	115.9	120.4	-----	99.2	-----	-----	-----
White	99.2	111.9	109.1	115.6	87.6	84.8	79.3	90.6	-----	83.8	-----	-----	-----
Colored	169.9	188.4	130.2	161.2	154.1	162.8	183.3	175.2	-----	127.4	-----	-----	-----
Maryland	-----	-----	-----	-----	-----	-----	-----	-----	123.9	-----	-----	-----	-----
White	-----	-----	-----	-----	-----	-----	-----	-----	117.1	-----	-----	-----	-----
Colored	-----	-----	-----	-----	-----	-----	-----	-----	191.4	-----	-----	-----	-----
Michigan	74.7	82.3	82.1	75.4	74.9	73.4	67.4	72.6	59.8	61.3	-----	-----	-----
Minnesota	39.3	71.4	71.8	56.2	56.7	54.1	49.7	48.7	42.4	45.9	-----	-----	-----
Mississippi	95.1	117.7	102.6	115.0	107.8	112.1	70.3	117.5	106.6	101.9	-----	-----	-----
White	91.2	102.0	89.6	97.7	86.9	89.6	101.2	74.1	84.1	81.3	-----	-----	-----
Colored	98.9	132.2	114.6	131.1	127.2	128.5	132.7	147.0	127.2	120.6	-----	-----	-----
Nebraska	53.6	57.7	60.2	64.8	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	101.3	118.9	137.7	125.5	110.6	104.4	102.6	101.3	85.7	95.2	76.0	88.0	83.4
New York [1]	99.6	116.6	137.5	129.1	122.2	124.1	111.0	103.4	-----	104.2	114.7	120.0	118.0
Pennsylvania	109.3	125.6	143.3	112.5	109.8	102.3	105.8	88.6	83.9	93.3	86.8	93.5	96.9
Rhode Island	-----	-----	141.4	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
South Dakota	25.9	63.6	36.8	27.8	36.8	-----	-----	-----	-----	45.2	-----	-----	-----
Tennessee	-----	-----	77.2	65.1	78.6	77.3	69.2	71.0	73.9	-----	-----	-----	-----
White	-----	-----	126.6	57.8	64.7	67.5	62.5	59.8	57.9	-----	-----	-----	-----
Colored	-----	-----	112.8	100.5	145.8	125.1	101.8	125.1	151.2	-----	-----	-----	-----
Virginia	94.5	112.0	104.7	107.8	109.3	89.8	74.1	91.7	97.4	-----	-----	-----	-----
White	83.6	105.5	92.3	99.4	99.9	79.7	67.0	81.0	88.5	-----	-----	-----	-----
Colored	123.1	129.0	137.3	130.0	134.0	116.2	92.6	119.6	120.8	-----	-----	-----	-----

[1] Exclusive of New York City.

Monthly State mortality rates—Continued

State	1928		1929							Corresponding month for—			
	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	1928	1927	1926	1925
PUERPERAL STATE (143-150)													
Alabama (total)	14.7	16.5	15.6	17.4	13.9	23.8	23.9	29.0	12.4	21.6	24.4	25.1	23.7
White	13.0	14.0	14.7	14.0	13.3	17.4	19.6	20.3	8.4	14.7	24.0	16.3	-----
Colored	17.7	21.1	19.8	26.3	17.1	35.4	31.6	45.0	19.8	34.3	25.0	40.7	-----
California	7.7	14.2	10.1	6.0	9.3	12.8	10.3	7.7	-----	9.1	-----	-----	-----
Connecticut (143-149)	6.0	8.8	6.5	16.7	10.0	4.4	5.0	12.6	-----	6.0	10.0	11.7	11.1
Hawaii Territory (146)	7.0	6.7	6.7	7.5	-----	-----	-----	-----	3.3	10.1	-----	-----	-----
Indiana	10.3	8.9	16.7	9.9	15.9	10.7	12.2	15.3	10.0	8.9	16.1	5.7	12.6
Iowa	3.5	9.7	14.1	9.7	13.1	10.5	8.2	-----	-----	10.7	-----	-----	-----
Kansas	12.6	13.5	10.3	10.7	14.8	10.6	11.5	-----	-----	22.5	-----	-----	-----
Kentucky	8.6	11.1	15.2	11.7	12.9	-----	-----	-----	-----	-----	-----	-----	-----
Louisiana	20.0	24.2	24.2	11.4	22.9	25.6	21.1	16.8	-----	29.3	-----	-----	-----
White	21.2	19.6	21.5	10.3	15.8	25.1	16.8	10.6	-----	22.2	-----	-----	-----
Colored	17.7	32.5	29.1	13.3	36.0	26.5	29.1	28.3	-----	42.5	-----	-----	-----
Maryland	-----	-----	-----	-----	-----	-----	-----	-----	11.7	-----	-----	-----	-----
White	-----	-----	-----	-----	-----	-----	-----	-----	8.7	-----	-----	-----	-----
Colored	-----	-----	-----	-----	-----	-----	-----	-----	27.3	-----	-----	-----	-----
Michigan	10.0	12.3	11.8	14.2	17.2	17.2	11.0	13.5	16.9	10.8	-----	-----	-----
Minnesota	4.0	8.7	9.1	8.7	9.1	8.5	5.2	7.2	4.8	7.8	-----	-----	-----
Nebraska	7.8	9.2	15.9	13.0	-----	-----	-----	-----	-----	-----	-----	-----	-----
New Jersey	14.5	8.0	10.2	8.9	10.2	10.5	10.2	8.9	9.2	9.6	-----	-----	-----
New York [1]	8.7	10.1	11.0	11.4	12.4	4.1	11.2	8.5	-----	8.5	11.3	9.5	11.5
Rhode Island	-----	-----	4.9	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
South Dakota	12.0	10.0	13.4	14.8	13.4	-----	-----	-----	-----	8.4	-----	-----	-----
Tennessee	-----	-----	18.4	12.5	17.4	20.9	16.0	8.3	17.4	-----	-----	-----	-----
White	-----	-----	17.0	8.2	15.3	20.0	13.6	8.8	15.3	-----	-----	-----	-----
Colored	-----	-----	24.8	33.5	27.5	25.5	27.5	5.7	27.5	-----	-----	-----	-----
Virginia	14.2	18.3	15.1	16.2	13.3	15.1	17.8	13.7	13.3	-----	-----	-----	-----
White	11.7	12.6	10.7	10.5	10.1	10.5	10.1	11.1	10.7	-----	-----	-----	-----
Colored	20.5	33.1	26.5	31.1	21.5	27.3	38.0	20.5	19.9	-----	-----	-----	-----

[1] Exclusive of New York City.

COURT DECISION RELATING TO PUBLIC HEALTH

Narcotic drug statute construed.—(Washington Supreme Court; State *v.* Ball, 279 P. 735; decided August 8, 1929.) The defendant was prosecuted for the unlawful possession of narcotic drugs and for the unlawful possession of narcotic drugs with intent to sell. The statute involved (ch. 47, Laws 1923) made it unlawful for a person to sell, furnish, or dispose of, or to have in possession with intent to sell, furnish, or dispose of, narcotic drugs except upon a physician's prescription. Certain duties were imposed upon the "dispenser of such drugs in pursuance of such prescriptions." It was also provided that the act should not be construed as prohibiting a wholesale dealer in drugs from selling or furnishing them or as preventing a physician "from administering, for legitimate medical purposes, in the course of his professional practice only, to his patient, any of the articles enumerated in this section in quantities proportioned to the needs of such patient." It was declared to be a violation of the act for a person to have in his possessoin a narcotic drug unless obtained pursuant to the State and Federal laws and regulations, and proof of the possession of any such narcotic drug, except by a physician, manufacturer, or druggist, was prima facie evidence of an intent unlawfully to sell, furnish, or dispose of the same.

The question was presented as to whether the statute contemplated or permitted a physician, except upon a written prescription, to furnish to a patient a narcotic drug for future use, the drug to be taken away from the physician's presence by the patient. The supreme court interpreted the statute as requiring a prescription for drugs needed for future use, saying as follows:

The argument on behalf of the appellant is that the provision allowing a duly registered physician to "administer for legitimate medical purposes," etc., allows him, if acting in good faith, to deliver to his patient narcotic drugs to be taken away and used in the future. Under the statute, clearly there are only two ways for a patient to lawfully get possession of the drug—viz, to have it *administered* by the physician, or *dispensed* to the patient by a druggist upon the prescription of a physician. The physician is not allowed to dispense, nor can the druggist administer. The legislature seems to have used the words "administer" and "dispense" advisedly; the first in the sense that the article or drug shall be taken by the patient at once under the immediate direction and supervision of the physician, the other word in the sense that the article shall be delivered to the patient by the one filling the prescription to be taken away for future use. The statute says the prescription shall be filled but once, and the *dispenser* of such drugs in pursuance of such prescription shall cause the person procuring the drug or drugs to be prescribed to place his or her name and address on the back of the prescription. Clearly the one thus filling the prescription is the *dispenser* of the drug, because he furnishes it to be taken away for future use. This corresponds with the common understanding of the word dispense. But, when the statute speaks of a physician using the drug for legitimate medical purposes in the course of his professional practice only, it does not use the word "dispense," but the word "administer" is employed. The physician, of course, can give what is needed for present use, while such as may be needed in the future, if any, must be provided by means of a prescription to be filled by one who dispenses the drug. * * *

DEATHS DURING WEEK ENDED OCTOBER 5, 1929

Summary of information received by telegraph from industrial insurance companies for the week ended October 5, 1929, and corresponding week of 1928. (From the Weekly Health Index, October 9, 1929, issued by the Bureau of the Census, Department of Commerce)

	Week ended Oct. 5, 1929	Corresponding week, 1928
Policies in force	74, 833, 510	71, 846, 189
Number of death claims	12, 494	11, 874
Death claims per 1,000 policies in force, annual rate	8. 7	8. 6

Deaths from all causes in certain large cities of the United States during the week ended October 5, 1929, infant mortality, annual death rate, and comparison with corresponding week of 1928. (From the Weekly Health Index, October 9, 1929. issued by the Bureau of the Census, Department of Commerce)

City	Week ended Oct. 5, 1929		Annual death rate per 1,000, corresponding week, 1928	Deaths under 1 year		Infant mortality rate, week ended Oct. 5, 1929 [2]
	Total deaths	Death rate [1]		Week ended Oct. 5, 1929	Corresponding week, 1928	
Total (63 cities)	6,169	11.0	12.3	611	748	[3] 55
Akron	33			3	4	31
Albany [4]	39	16.9	11.7	2	1	40
Atlanta	71	14.6	14.3	5	14	52
White	30			2	8	
Colored	41	(5)	(5)	3	6	
Baltimore [4]	189	11.9	13.0	24	30	77
White	138			17	26	68
Colored	51	(5)	(5)	7	4	111
Birmingham	61	14.3	18.1	5	13	45
White	29			3	7	45
Colored	32	(5)	(5)	2	6	46
Boston	165	10.8	14.2	18	23	50
Bridgeport	29			3	2	52
Buffalo	136	12.8	16.3	16	20	69
Cambridge	19	7.9	10.8	4	2	72
Camden	27	10.4	12.7	4	5	69
Canton	34	15.2	7.6	4	5	95
Chicago [4]	623	10.3	11.5	53	74	47
Cincinnati	144			13	14	76
Cleveland	163	8.4	10.4	19	29	56
Columbus	71	12.4	15.2	10	12	94
Dallas	51	12.2	9.1	5	5	
White	42			3	4	
Colored	9	(5)	(5)	2	1	
Dayton	47	13.3	12.2	3	2	48
Denver	59	10.5	17.2	7	10	68
Des Moines	34	11.7	11.7	4	0	72
Detroit	268	10.2	11.1	39	46	63
Duluth	28	12.5	7.6	1	0	24
El Paso	25	11.1	13.3	3	10	
Erie	22			0	2	0
Fall River [4]	22	8.6	11.7	2	2	38
Flint	31	10.9	9.5	9	8	109
Fort Worth	32	9.8	10.1	4	3	
White	27			4	1	
Colored	5	(5)	(5)	0	2	
Grand Rapids	29	9.2	9.2	4	3	60
Houston	68			7	4	
White	44			4	3	
Colored	24	(5)	(5)	3	1	
Indianapolis	84	11.5	14.0	9	4	72
White	65			9	4	83
Colored	19	(5)	(5)	0	0	0
Jersey City	62	10.0	12.1	2	6	15
Kansas City, Kans	27	11.9	11.5	4	1	88
White	21			2	1	50
Colored	6	(5)	(5)	2	0	358
Kansas City, Mo	88	11.8	13.1	11	9	93
Knoxville	25	12.4	15.9	1	3	22
White	18			1	3	24
Colored	7	(5)	(5)	0	0	0
Los Angeles	210			19	10	56
Lowell	16			0	5	0
Lynn	29	14.4	6.4	5	1	137
Memphis	58	15.9	14.8	11	7	130
White	30			5	4	95
Colored	28	(5)	(5)	6	3	188
Milwaukee	94	9.0	12.2	13	11	57
Minneapolis	73	8.4	11.8	4	9	25
Nashville	39	14.6	20.2	1	9	16
White	26			1	9	22
Colored	13	(5)	(5)	0	0	0
New Bedford	24			3	5	64
New Haven	42	11.7	12.0	1	6	15
New Orleans	141	17.2	18.0	19	17	94
White	84			8	8	56
Colored	57	(5)	(5)	11	9	135

See footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended October 5, 1929, infant mortality, annual death rate, and comparison with corresponding week of 1928—Continued

City	Week ended Oct. 5, 1929		Annual death rate per 1,000, corresponding week, 1928	Deaths under 1 year		Infant mortality rate, week ended Oct. 5, 1929 [2]
	Total deaths	Death rate [1]		Week ended Oct. 5, 1929	Corresponding week, 1928	
New York	1,239	10.8	12.4	112	155	46
Bronx Borough	162	8.9	10.3	10	10	30
Brooklyn Borough	409	9.2	10.2	38	68	39
Manhattan Borough	481	14.4	18.1	53	64	65
Queens Borough	148	9.1	9.1	8	10	33
Richmond Borough	39	13.5	13.2	3	3	54
Newark, N. J	82	9.1	11.4	7	8	37
Oakland	61	11.6	10.7	3	5	33
Oklahoma City	43			8	1	160
Omaha	43	10.1	9.9	2	5	23
Paterson	28	10.1	11.9	1	1	18
Philadelphia	417	10.6	11.2	41	44	58
Pittsburgh	178	13.8	15.4	18	22	62
Portland, Oreg	54			1	3	11
Providence	46	8.4	12.6	5	4	44
Richmond	48	12.9	16.1	2	4	28
White	25			1	3	21
Colored	23	(3)	(3)	1	1	41
Rochester	61	9.7	13.4	4	13	34
St. Louis	197	12.1	12.8	13	15	44
St. Paul	44			5	2	51
Salt Lake City [4]	35	13.3	10.2	4	5	62
San Antonio	52	12.5	11.3	6	7	
San Diego	38			3	2	57
San Francisco	116	10.4	13.0	7	7	45
Schenectady	14	7.8	16.3	1	2	32
Seattle	89	12.1	9.1	7	3	74
Somerville	16	8.1	12.2	1	1	36
Spokane	28	13.4	8.1	1	0	26
Springfield, Mass	39	13.6	9.8	3	5	50
Syracuse	36	9.4	11.3	6	0	72
Toledo	63	10.5	9.7	8	8	75
Trenton	42	15.8	14.3	4	4	72
Utica	18	9.0	16.6	2	2	51
Washington, D. C	125	11.8	12.5	11	15	64
White	83			7	10	59
Colored	42	(3)	(3)	4	5	76
Waterbury	19			5	5	127
Wilmington, Del	19	7.7	11.4	2	1	52
Worcester	38	10.1	9.3	7	6	88
Yonkers	18	7.8	9.1	2	2	47
Youngstown	35	10.5	3.9	5	4	72

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. [3] Cities left blank are not in the registration area for births.
[3] Data for 71 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; 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 October 5, 1929, and October 6, 1928

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended October 5, 1929, and October 6, 1928

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Oct. 5, 1929	Week ended Oct. 6, 1928	Week ended Oct. 5, 1929	Week ended Oct. 6, 1928	Week ended Oct. 5, 1929	Week ended Oct. 6, 1928	Week ended Oct. 5, 1929	Week ended Oct. 6, 1928
New England States:								
Maine	3	3		1	1	19	0	0
New Hampshire	4		3	7	8	39	0	0
Vermont	4	6				13	0	0
Massachusetts	75	85	2	3	29	102	2	1
Rhode Island	5	13			2	7	0	0
Connecticut	14	29	2	12	4	5	0	0
Middle Atlantic States:								
New York	113	136	[1] 1	[1] 9	81	89	12	26
New Jersey	79	78	4	1	8	12	2	1
Pennsylvania	167	163			75	171	11	5
East North Central States:								
Ohio	68	84	11	6	59	27	2	5
Indiana	44	48		15	10	1	0	0
Illinois	165	90	10	8	62	38	7	11
Michigan	77	66	3		83	21	20	6
Wisconsin	23	18	23	19	89	12	4	1
West North Central States:								
Minnesota	17	26	3	1	25	38	0	1
Iowa	7	15		1	2		2	0
Missouri	39	53	1	6	20	5	8	4
North Dakota	9	5			2		2	1
South Dakota	7	2			2	1	1	1
Nebraska	19	54			11	13	1	0
Kansas	28	24	2		10		0	3
South Atlantic States:								
Delaware	3				1	1	0	0
Maryland [2]	16	18	3	7	1	7	2	1
District of Columbia	12	23	2	1	4	1	0	0
Virginia								
West Virginia	38	11	1	12	12	2	0	0
North Carolina	229	200			4	16	2	0
South Carolina	63	94	316	664			0	0
Georgia	22	20	42	110	3	3	0	0
Florida	9	14	2	9	3	3	0	1
East South Central States:								
Kentucky	24						1	0
Tennessee	39	72	16	20	1		1	0
Alabama	44	114	7	71		8	1	0
Mississippi	54	51					2	0
West South Central States:								
Arkansas	25	18	29	47	2	14	0	0
Louisiana	22	20	5	5	1	5	2	0
Oklahoma [3]	63	81	33	17	29	5	1	2
Texas	57	23	28	28	2	13	0	1
Mountain States:								
Montana		5			81	13	0	3
Idaho		2			4		0	0
Wyoming	2	2				1	1	0
Colorado	8	21		2	3	2	2	3
New Mexico	10	3					0	0
Arizona	4	3		3	1		0	0
Utah [2]	2	2	6		3	2	2	1

[1] New York City only.
[2] Week ended Friday.
[3] 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 October 5, 1929, and October 6, 1928—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Oct. 5, 1929	Week ended Oct. 6, 1928	Week ended Oct. 5, 1929	Week ended Oct. 6, 1928	Week ended Oct. 5, 1929	Week ended Oct. 6, 1928	Week ended Oct. 5, 1929	Week ended Oct. 6, 1928
Pacific States:								
Washington	11	6	2	----	3	35	5	2
Oregon	8	9	12	26	9	17	0	0
California	40	67	24	27	43	18	7	3

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Oct. 5, 1929	Week ended Oct. 6, 1928	Week ended Oct. 5, 1929	Week ended Oct. 6, 1928	Week ended Oct. 5, 1929	Week ended Oct. 6, 1928	Week ended Oct. 5, 1929	Week ended Oct. 6, 1928
New England States:								
Maine	1	3	12	6	0	0	1	8
New Hampshire	0	2	12	4	0	0	0	0
Vermont	0	0	1	13	0	0	0	0
Massachusetts	4	0	108	111	0	0	5	15
Rhode Island	1	0	5	5	0	0	3	1
Connecticut	1	6	14	12	0	0	10	1
Middle Atlantic States:								
New York	34	32	81	102	5	0	44	103
New Jersey	4	4	44	39	0	0	5	20
Pennsylvania	14	33	166	136	0	1	94	102
East North Central States:								
Ohio	12	14	125	173	27	8	41	46
Indiana	0	2	59	64	21	8	13	21
Illinois	2	7	229	180	46	5	31	40
Michigan	11	2	144	96	18	9	15	11
Wisconsin	0	0	61	77	2	3	17	4
West North Central States:								
Minnesota	0	14	55	70	1	0	4	5
Iowa	6	1	35	61	10	0	3	5
Missouri	0	0	42	71	12	3	10	12
North Dakota	2	1	8	12	3	0	4	3
South Dakota	0	2	7	16	19	7	2	4
Nebraska	0	5	15	34	6	4	0	1
Kansas	1	2	18	91	13	15	5	15
South Atlantic States:								
Delaware	0	0	2	3	0	0	3	1
Maryland [2]	2	4	35	41	0	0	30	34
District of Columbia	1	2	10	10	0	0	1	2
Virginia	21	----	----	----	----	----	----	----
West Virginia	1	8	44	40	8	0	42	33
North Carolina	8	0	122	110	2	2	29	48
South Carolina	3	1	18	23	0	0	38	61
Georgia	1	0	38	29	0	0	18	28
Florida	1	1	6	4	0	0	3	3
East South Central States:								
Kentucky	0	2	28	33	0	0	22	20
Tennessee	2	1	43	32	1	4	32	63
Alabama	1	6	48	40	6	0	13	38
Mississippi	2	2	29	29	1	0	26	32
West South Central States:								
Arkansas	0	0	20	33	0	0	23	23
Louisiana	0	0	12	18	0	2	16	28
Oklahoma [3]	2	1	51	44	2	5	47	79
Texas	0	1	38	26	4	5	21	36
Mountain States:								
Montana	0	1	8	8	7	9	53	14
Idaho	0	1	5	0	4	4	1	3
Wyoming	0	1	2	25	3	2	0	2
Colorado	1	10	12	17	15	5	10	24
New Mexico	0	1	6	4	1	0	16	9
Arizona	1	1	2	0	0	0	3	2
Utah [2]	0	1	14	9	----	1	2	4
Pacific States:								
Washington	1	17	35	23	19	17	8	13
Oregon	0	4	8	22	7	10	1	6
California	2	6	73	98	12	17	8	18

[2] Week ended Friday.
[3] 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
August, 1929										
Colorado	3	25			32		1	18	20	59
Mississippi	1	154	568	16,774	66	1,164	5	61	1	244
Montana	1	7	13		85		2	31	11	30
North Carolina	7	343	2		4	69	21	199	14	186
Pennsylvania	48	292		2	298	2	48	306	6	163
September, 1929										
Arkansas	2	27	12	525	9	36	0	33	0	91
Connecticut	1	58	4	1	18			47	0	7
Georgia	4	101	81	1,232	16	33	7	102	9	114
Indiana	4	85	23	3	18		7	132	61	44
Iowa	4	20	1				17	86	31	29
Michigan	84	271	3	10	231	1	52	319	79	47
Nebraska	2	47			22		0	46	21	11
North Dakota	13	30	5		32		2	30	10	5
Porto Rico		55	41	1,507	53	4		1	0	60
Wyoming	4	1	1		12		0	10	9	9

August, 1929	Cases
Actinomycosis:	
Montana	1
Anthrax:	
Pennsylvania	1
Chicken pox:	
Colorado	40
Mississippi	226
Montana	10
North Carolina	28
Pennsylvania	186
Dengue:	
Mississippi	78
Dysentery:	
Mississippi (amebic)	65
Mississippi (bacillary)	1,141
Pennsylvania	1
German measles:	
Colorado	5
North Carolina	4
Pennsylvania	14
Hookworm disease:	
Mississippi	388
Impetigo contagiosa:	
Colorado	1
Lethargic encephalitis:	
Pennsylvania	5
Mumps:	
Colorado	39
Mississippi	102
Montana	25
Pennsylvania	108
Ophthalmia neonatorum:	
Mississippi	12
Pennsylvania	15
Paratyphoid fever:	
Colorado	1
North Carolina	8
Puerperal septicemia:	Cases
Mississippi	35
Pennsylvania	22
Rabies in animals:	
Mississippi	5
Rabies in man:	
Mississippi	1
Pennsylvania	1
Rocky Mountain spotted or tick fever:	
Colorado	1
Montana	2
Septic sore throat:	
Colorado	1
North Carolina	14
Tetanus:	
Pennsylvania	13
Trachoma:	
Colorado	1
Mississippi	6
Pennsylvania	1
Trichinosis:	
Pennsylvania	2
Tularaemia:	
Montana	1
North Carolina	1
Typhus fever:	
North Carolina	2
Undulant fever:	
Mississippi	2
Pennsylvania	6
Vincent's angina:	
Colorado	2
Whooping cough:	
Colorado	93
Mississippi	822
Montana	25
North Carolina	974
Pennsylvania	1,675

September, 1920	Cases
Chicken pox:	
Arkansas	8
Connecticut	38
Georgia	4
Indiana	23
Michigan	115
Nebraska	19
North Dakota	21
Wyoming	4
Colibacillosis:	
Porto Rico	6
Dengue:	
Georgia	9
Dysentery:	
Georgia	17
Porto Rico	94
Filariasis:	
Porto Rico	6
Hookworm disease:	
Arkansas	4
Georgia	13
Leprosy:	
Indiana	1
Porto Rico	1
Lethargic encephalitis:	
Michigan	5
North Dakota	2
Mumps:	
Arkansas	25
Connecticut	19
Georgia	26
Indiana	4
Michigan	87
Nebraska	13
North Dakota	23
Porto Rico	9
Wyoming	6
Ophthalmia neonatorum:	
Arkansas	1
Paratyphoid fever:	
Connecticut	28
Georgia	5
Puerperal septicemia:	
Porto Rico	21
Rabies in animals:	
Connecticut	3
Scabies:	
North Dakota	6
Septic sore throat:	
Connecticut	2
Georgia	26
Michigan	12
Nebraska	7
North Dakota	1
Tetanus:	
Connecticut	1
North Dakota	1
Porto Rico	17
Tetanus (infantile):	
Porto Rico	35
Trachoma:	
Arkansas	2
North Dakota	5
Porto Rico	10
Tularaemia:	
Wyoming	1
Typhus fever:	
Georgia	2
Undulant fever:	
Connecticut	3
Georgia	4
Iowa	32
Nebraska	5
North Dakota	2
Vincent's angina:	
North Dakota	41
Whooping cough:	
Arkansas	28
Connecticut	87
Georgia	135
Indiana	72
Michigan	524
Nebraska	51
North Dakota	32
Porto Rico	53
Wyoming	3

Number of Cases of Certain Communicable Diseases Reported for the Month of July, 1929, by State Health Officers

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Maine	33	8	145	16	35	0	36	15	69
New Hampshire		3			13	0			
Vermont	50	4	24	15	12	5	23	1	80
Massachusetts	412	240	897	227	303	1	470	32	649
Rhode Island	20	26	112	3	22	0	56	5	56
Connecticut	84	57	142	56	61	0	110	11	140
New York	778	672	1,497	757	413	1	1,741	100	1,686
New Jersey	216	283	237		155	0	413	49	954
Pennsylvania	412	388	1,318	255	444	3	904	139	2,053
Ohio	357	155	859	120	360	164	696	74	1,685
Indiana	35	44	184	2	160	166	204	19	149
Illinois	393	590	1,863	173	541	213	1,090	77	1,240
Michigan	406	354	955	197	550	268	426	24	1,020
Wisconsin	357	69	1,320	112	207	42	201	8	1,084
Minnesota	127	45	258		132	10	253	25	244
Iowa	54	18	62	31	90	135	52	15	137
Missouri	57	100	91	45	75	46	270	77	429
North Dakota	48	20	109	6	15	13	17	4	50
South Dakota	37	19	22	12	20	98	9	3	18
Nebraska	30	14	311	22	60	0	13	3	87
Kansas	48	29	385	103	110	67	129	53	383
Delaware	6	5	16	3	3	0	[1] 12	4	9
Maryland	46	42	53	187	105	0	329	61	480
District of Columbia	10	19	18		34	0	96	11	42
Virginia	124	51	200		72	10	[1] 105	166	981
West Virginia	18	24	146		50	25	41	79	165
North Carolina	55	106	13		97	35		196	1,732
South Carolina	94	71	15	75	32	10	133	378	867
Georgia	9	21	13	27	31	3	122	182	172
Florida	1	28	33	10	16	0	74	27	79
Kentucky [2]									
Tennessee	12	21	37	34	37	13	257	264	223
Alabama	16	49	66	14	55	0	274	152	193
Mississippi	278	51	135	182	24	2	339	303	1,284
Arkansas	28	11	36	45	16	12	[1] 42	74	129
Louisiana	1	57	35		43	1	[1] 267	148	46
Oklahoma [3]	15	29	38	13	34	54	66	174	50
Texas [2]									
Montana	22	17	90	19	31	14	47	9	66
Idaho	17	4	32	4	7	34	6	12	20
Wyoming	14	3	23	8	17	40	1	4	11
Colorado	82	20	25	51	21	49	54	21	66
New Mexico [2]									
Arizona	3	6	6	4	6	14	72	11	8
Utah [2]									
Nevada	17			2		7	[1] 16		11
Washington	111	31	155	177	38	124	190	17	249
Oregon	35	22	126	54	16	72	78	14	50
California	417	211	291	651	512	123	929	92	791

[1] Pulmonary. [2] Reports received weekly. [3] Exclusive of Oklahoma City and Tulsa.

Case Rates Per 1,000 Population (Annual Basis) for the Month of July, 1929

State	Chickenpox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Maine	0.49	0.12	2.14	0.24	0.52	0.00	0.53	0.22	1.02
New Hampshire		.08			.33	.00			
Vermont	1.67	.13	.80	.50	.40	.17	.77	.03	2.67
Massachusetts	1.12	.65	2.43	.62	.82	.00	1.28	.09	1.76
Rhode Island	.32	.42	1.81	.05	.36	.00	.91	.08	.91
Connecticut	.58	.40	.98	.39	.42	.00	.76	.08	.97
New York	.78	.68	1.51	.76	.42	.00	1.75	.10	1.70
New Jersey	.65	.86	.72		.47	.00	1.25	.15	2.88
Pennsylvania	.49	.46	1.56	.30	.52	.00	1.07	.16	2.42
Ohio	.61	.26	1.46	.20	.61	.28	1.18	.13	2.86
Indiana	.13	.16	.68	.01	.59	.61	.75	.07	.55
Illinois	.62	.93	2.93	.27	.85	.33	1.71	.12	1.95
Michigan	1.02	.89	2.40	.49	1.38	.67	1.07	.06	2.56
Wisconsin	1.41	.27	5.20	.44	.82	.17	.79	.03	4.27
Minnesota	.54	.19	1.10		.56	.04	1.08	.11	1.04
Iowa	.26	.09	.30	.15	.44	.65	.25	.07	.66
Missouri	.19	.33	.30	.15	.25	.15	.90	.26	1.43
North Dakota	.88	.37	2.00	.11	.28	.24	.31	.07	.92
South Dakota	.61	.31	.36	.20	.33	1.62	.15	.05	.30
Nebraska	.25	.12	2.58	.18	.50	.00	.11	.02	.72
Kansas	.31	.19	2.45	.66	.70	.43	.82	.34	2.45
Delaware	.29	.24	.77	.14	.14	.00	[1].58	.19	.43
Maryland	.33	.30	.38	1.35	.76	.00	2.37	.44	3.46
District of Columbia	.21	.40	.38		.71	.00	2.00	.23	.88
Virginia	.56	.23	.90		.33	.05	[1].47	.75	4.44
West Virginia	.12	.16	.98		.34	.17	.28	.53	1.11
North Carolina	.22	.42	.05		.38	.14		.77	6.84
South Carolina	.59	.44	.09	.47	.20	.06	.83	2.36	5.42
Georgia	.03	.08	.05	.10	.11	.01	.44	.66	.63
Florida	.01	.23	.27	.08	.13	.00	.60	.22	.64
Kentucky [2]									
Tennessee	.06	.10	.17	.16	.17	.06	1.20	1.23	1.04
Alabama	.07	.22	.30	.06	.25	.00	1.24	.69	.88
Mississippi	1.83	.34	.89	1.20	.16	.01	2.23	1.99	8.44
Arkansas	.17	.07	.22	.27	.10	.07	[1].25	.44	.77
Louisiana	.01	.34	.21		.26	.01	[1]1.60	.89	.28
Oklahoma [3]	.08	.16	.21	.07	.18	.29	.36	.94	.27
Texas [2]									
Montana	.47	.36	1.93	.41	.66	.30	1.01	.19	1.42
Idaho	.36	.08	.68	.08	.15	.72	.13	.25	.42
Wyoming	.65	.14	1.07	.37	.79	1.86	.05	.19	.51
Colorado	.87	.21	.27	.54	.22	.52	.57	.22	.70
New Mexico [2]									
Arizona	.07	.14	.14	.10	.14	.34	1.73	.26	.19
Utah [2]									
Nevada	2.59			.30		1.06	[1]2.43		1.67
Washington	.81	.23	1.13	1.29	.28	.91	1.39	.12	1.82
Oregon	.45	.28	1.62	.70	.21	.93	1.00	.18	.64
California	1.05	.53	.73	1.64	1.29	.31	2.34	.23	1.99

[1] Pulmonary. [2] Reports received weekly. [3] Exclusive of Oklahoma City and Tulsa.

ADMISSIONS TO HOSPITALS FOR THE INSANE, NOVEMBER, 1928

Reports for the month of November, 1928, showing new admissions to hospitals for the care and treatment of the insane, have been received by the Public Health Service from 99 hospitals, located in 35 States, the District of Columbia, and the Territory of Hawaii. These hospitals reported a total of 147,912 patients on November 30, 1928, including those on parole.

The following table shows the number of new admissions for the month of November, 1928, by psychoses:

Psychoses	Number of first admissions		
	Male	Female	Total
1. Traumatic psychoses	6	1	7
2. Senile psychoses	112	95	207
3. Psychoses with cerebral arteriosclerosis	139	87	226
4. General paralysis	156	48	204
5. Psychoses with cerebral syphilis	26	8	34
6. Psychoses with Huntington's chorea	2	3	5
7. Psychoses with brain tumor	1	1	2
8. Psychoses with other brain or nervous disease	20	12	32
9. Alcoholic psychoses	147	13	160
10. Psychoses due to drugs and other exogenous toxins	13	10	23
11. Psychoses with pellagra	12	17	29
12. Psychoses with other somatic diseases	21	31	52
13. Manic-depressive psychoses	123	183	306
14. Involution melancholia	10	36	46
15. Dementia præcox (schizophrenia)	288	213	501
16. Paranoia and paranoid conditions	16	23	39
17. Epileptic psychoses	29	26	55
18. Psychoneuroses and neuroses	16	21	37
19. Psychoses with psychopathic personality	21	8	29
20. Psychoses with mental deficiency	40	47	87
21. Undiagnosed psychoses	107	65	172
22. Without psychosis	141	66	207
Total	1,446	1,014	2,460

Fifty-eight and eight-tenths per cent of the new admissions were males and 41.2 per cent females, giving a ratio of 143 males per 100 females. The 99 hospitals at the end of the month had 78,768 male patients and 69,144 female patients, the ratio being 114 males per 100 females.

At the end of the month 13,841 patients were on parole, 7,539 males and 6,302 females. The number on parole was 9.6 per cent of the male patients, 9.1 per cent of the female patients, and 9.4 per cent of the total.

Cases of dementia præcox constituted 20.4 per cent of the first admissions; manic-depressive psychoses, 12.4 per cent; psychoses with cerebral arteriosclerosis, 9.2 per cent; senile psychoses, 8.4 per cent; without psychosis, 8.4 per cent; general paralysis, 8.3 per cent; undiagnosed psychoses, 7 per cent; and alcoholic psychoses, 6.5 per cent. Some cases reported as "alcoholism" are recorded as "alcoholic psychoses."

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 96 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 29,965,000. The estimated population of the 89 cities reporting deaths is more than 28,395,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended September 28, 1929, and September 29, 1928

	1929	1928	Estimated expectancy
Cases reported			
Diphtheria:			
46 States	1,564	1,563	----------
96 cities	466	490	694
Measles:			
45 States	745	681	----------
96 cities	78	107	----------
Meningococcus meningitis:			
45 States	110	82	----------
96 cities	48	36	----------
Poliomyelitis:			
47 States	143	215	----------
Scarlet fever:			
46 States	1,696	1,691	----------
96 cities	527	419	453
Smallpox:			
46 States	212	261	----------
96 cities	23	11	9
Typhoid fever:			
46 States	743	985	----------
96 cities	119	133	170
Deaths reported			
Influenza and pneumonia:			
89 cities	392	391	----------
Smallpox:			
89 cities	0	0	----------

City reports for week ended September 28, 1929

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet faver, 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.

City reports for week ended September 28, 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			
NEW ENGLAND									
Maine:									
Portland	78,600	0	1	0		0	0	1	3
New Hampshire:									
Concord	(1)	0	0	0		0	0	0	0
Nashua	(1)	0	0	0		0	0	0	2
Vermont:									
Barre	(1)	0	0	0		0	0	0	0
Massachusetts:									
Boston	799,200	7	26	19		0	2	5	13
Fall River	134,300	0	3	3		0	0	0	2
Springfield	149,800	5	2	4		0	1	0	0
Worcester	197,600	3	4	0		0	4	0	1
Rhode Island:									
Pawtucket	73,100	0	1	1		0	0	0	2
Providence	286,300	0	5	5		0	0	0	4
Connecticut:									
Bridgeport	(1)	0	5	1		1	0	0	1
Hartford	172,300		3						
New Haven	187,900	2	1	0		0	0	0	2
MIDDLE ATLANTIC									
New York:									
Buffalo	555,800	6	12	9		0	1	1	17
New York	6,017,500	7	106	59	5	5	9	21	71
Rochester	328,200	0	6	1		0	2	1	4
Syracuse	199,300	1	4	0		0	0	2	1
New Jersey:									
Camden	135,400	0	3	9		0	0	0	1
Newark	473,600	4	11	17	2	0	2	12	5
Trenton	139,000	0	2	1		0	0	0	1
Pennsylvania:									
Philadelphia	2,064,200	6	41	14	2	3	1	1	24
Pittsburgh	673,800	1	19	14	2	2	6	0	25
Reading	115,400	0	2	1		0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	413,700	0	9	3		0	0	0	9
Cleveland	1,010,300	13	33	4	4	1	3	3	10
Columbus	299,000	2	4	2	2	2	1	0	1
Toledo	313,200	6	7	6	3	1	5	1	4
Indiana:									
Fort Wayne	105,300	0	3	1		0	0	0	0
Indianapolis	382,100	4	11	2		0	2	4	9
South Bend	86,100	0	1	2		0	0	0	1
Terre Haute	73,500	0	1	0		0	0	0	3
Illinois:									
Chicago	3,157,400	21	62	86	6	3	7	3	29
Springfield	67,200	0	0	0		0	1	0	0
Michigan:									
Detroit	1,378,900		44						
Flint	148,800	0	5	0		0	0	0	1
Grand Rapids	164,200	2	2	0		0	0	1	0
Wisconsin:									
Kenosha	56,500	4	0	0	2	0	0	0	0
Madison	50,500	3	2	0		0	0	0	0
Milwaukee	544,200	5	10	3		0	1	5	5
Racine	74,400	0	2	0		0	0	1	1
Superior	(1)	0	0	0		0	5	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	116,800	2	1	0		0	0	1	1
Minneapolis	455,900	9	22	3		1	0	6	6
St. Paul	(1)	4	15	3		0	0	6	9
Iowa:									
Des Moines	151,900	0	4	0			0	0	
Sioux City	80,000	0	1	2			0	0	
Waterloo	37,100	8	1	0			0	0	

[1] No estimate of population made.

City reports for week ended September 28, 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			
WEST NORTH CENTRAL—continued									
Missouri:									
Kansas City	391,000	1	6	6		0	2	0	3
St. Joseph	78,500	3	1	0		0	0	0	2
St. Louis	848,100	8	30	16			2	5	
North Dakota:									
Fargo	(1)	3	1	0		0	0	0	0
Grand Forks	(1)	1	0	0			0	0	
South Dakota:									
Aberdeen	(1)	1	0	0			0	0	
Sioux Falls	(1)	0	1	0			0	0	
Nebraska:									
Omaha	222,800	4	14	19		0	0	0	5
Kansas:									
Topeka	62,800	1	1	1	1	0	1	0	0
Wichita	99,300	1	3	2		0	0	0	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	128,500	0	1	1		0	0	0	0
Maryland:									
Baltimore	830,400	1	18	2		1	2	4	13
Cumberland	(1)	0	1	0		0	0	0	0
Frederick	(1)	1	1	0		0	0	0	0
District of Columbia:									
Washington	552,000	1	11	6	2	1	1	0	3
Virginia:									
Lynchburg	38,600	1	3	4		0	0	8	1
Norfolk	184,200	1	2	3		0	0	1	5
Richmond	194,400	0	19	11		0	1	0	4
Roanoke	64,600	0	6	2		0	0	0	0
West Virginia:									
Charleston	55,200	3	1	1		0	0	0	0
Wheeling	(1)	0	1	2		0	0	0	0
North Carolina:									
Raleigh	(1)	0	4	3		0	0	0	1
Wilmington	39,100	1	1	7		0	0	1	0
Winston-Salem	80,000	0	4	5		0	0	0	0
South Carolina:									
Charleston	75,900	0	1	2	11	1	0	0	1
Columbia	50,600	0	1	0		0	0	1	2
Georgia:									
Atlanta	255,100	0	8	8	8	0	3	1	5
Brunswick	(1)	0	0	0		0	0	0	0
Savannah	99,900	0	1	3	3	0	0	0	1
Florida:									
Miami	156,700	1	2	9		0	2	2	0
Tampa	113,400	0	1	3		0	0	1	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington	59,000	0	1	1		0	0	0	2
Tennessee:									
Memphis	190,200	0	4	7		0	0	0	4
Nashville	139,600	0	6	1		0	0	0	3
Alabama:									
Birmingham	222,400	0	5	6		0	0	0	7
Mobile	69,600	0	1	3		0	0	0	0
Montgomery	63,100	0	3	2			0	0	
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	(1)	1	0	1			1	0	
Little Rock	79,200	0	1	0		0	1	1	2
Louisiana:									
New Orleans	429,400	0	8	9	3	3	0	0	10
Shreveport	81,300	0	1	0		0	0	0	2
Oklahoma:									
Oklahoma City	(1)	0	3	4		0	0	0	1
Tulsa	170,500	0	2	3			0	0	

[1] No estimate of population made.

City reports for week ended September 28, 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			
WEST SOUTH CENTRAL—continued									
Texas:									
Dallas	217,800	1	8	20		0	0	0	2
Fort Worth	170,600	0	3	3		0	1	1	0
Galveston	50,600	0	0	0		0	0	0	0
Houston	(1)	0	5	10		0	1	0	7
San Antonio	218,100	0	2	3		0	0	0	1
MOUNTAIN									
Montana:									
Billings	(1)	0	0	0		0	0	4	0
Great Falls	(1)	3	0	0		0	3	9	1
Helena	(1)	0	0	0		0	0	0	1
Missoula	(1)	0	1	0		0	0	0	0
Idaho:									
Boise	(1)	0	1	0		0	0	0	0
Colorado:									
Denver	294,200	3	18	1		1	1	1	4
Pueblo	44,200	1	2	0		0	0	1	1
New Mexico:									
Albuquerque	(1)	0	0	0		0	0	1	1
Utah:									
Salt Lake City	138,000	6	3	2		1	1	10	1
Nevada:									
Reno	(1)	0	0	0		0	0	0	0
PACIFIC									
Washington:									
Seattle	383,200	10	4	0			0	3	
Spokane	109,100	6	2	0			0	0	
Tacoma	110,500	5	3	6		0	0	0	3
Oregon:									
Portland	(1)	3	7	1	1	0	3	1	4
Salem	(1)	1	0	0		0	0	2	0
California:									
Los Angeles	(1)	3	32	15	13	0	5	16	8
Sacramento	75,700	2	2	1	1	1	0	7	1
San Francisco	585,300	19	16	5	1	0	5	11	0

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	3	0	0	0	0	1	0	0	0	20
New Hampshire:											
Concord	0	1	0	0	0	0	0	0	0	0	9
Nashua	0	0	0	0	0	0	0	0	0	0	9
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	3
Massachusetts:											
Boston	23	30	0	0	0	8	3	1	0	13	198
Fall River	1	0	0	0	0	1	1	0	0	4	19
Springfield	3	2	0	0	0	2	0	0	0	0	45
Worcester	5	0	0	0	0	2	0	1	0	12	
Rhode Island:											
Pawtucket	0	0	0	0	0	0	0	0	0	0	16
Providence	2	2	0	0	0	2	2	1	0	9	63
Connecticut:											
Bridgeport	2	2	0	0	0	3	0	0	0	0	28
Hartford	1		0				0				
New Haven	2	1	0	0	0	1	2	0	0	5	39

[1] No estimate of population made.

City reports for week ended September 28, 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		
MIDDLE ATLANTIC											
New York:											
Buffalo	8	5	0	0	0	10	2	1	2	6	156
New York	43	16	0	0	0	94	37	12	1	61	1,227
Rochester	3	1	0	0	0	2	2	0	0	2	62
Syracuse	3	8	0	0	0	1	1	2	0	18	41
New Jersey:											
Camden	2	1	0	0	0	1	2	1	0	1	32
Newark	5	6	0	0	0	3	2	1	0	46	85
Trenton	1	3	0	0	0	5	0	0	0	7	36
Pennsylvania:											
Philadelphia	30	31	0	0	0	35	12	7	0	29	406
Pittsburgh	21	16	0	0	0	8	2	0	0	20	194
Reading	0	1	0	0	0	0	0	0	0	6	21
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	7	37	0	0	0	14	2	5	0	2	137
Cleveland	18	23	0	0	0	15	3	0	0	34	172
Columbus	4	3	0	0	0	1	1	1	0	25	61
Toledo	6	1	0	0	0	5	2	0	0	1	73
Indiana:											
Fort Wayne	1	0	0	1	0	0	1	0	0	0	20
Indianapolis	7	6	0	1	0	2	3	2	0	6	100
South Bend	2	4	0	0	0	2	0	0	0	0	19
Terre Haute	1	0	0	0	0	1	0	0	0	0	22
Illinois:											
Chicago	45	95	0	1	0	40	8	2	0	82	636
Springfield	1	0	0	0	0	1	1	0	0	2	18
Michigan:											
Detroit	38	----	1	----	----	----	4	----	----	----	----
Flint	7	3	0	1	0	1	1	0	0	2	37
Grand Rapids	5	6	0	0	0	1	1	1	0	4	39
Wisconsin:											
Kenosha	0	3	0	0	0	0	0	0	0	0	8
Madison	0	2	0	0	0	0	0	1	0	3	----
Milwaukee	14	18	0	0	0	7	1	1	0	45	113
Racine	3	6	0	0	0	0	0	0	0	13	14
Superior	1	1	0	0	0	1	0	0	0	9	12
WEST NORTH CENTRAL											
Minnesota:											
Duluth	5	3	0	0	0	1	0	0	0	1	23
Minneapolis	26	1	0	0	0	2	2	2	0	9	92
St. Paul	11	13	1	0	0	2	1	1	0	12	48
Iowa:											
Des Moines	4	1	0	1	----	----	0	1	----	0	33
Sioux City	1	0	0	0	----	----	1	0	----	4	----
Waterloo	0	2	0	0	----	----	0	0	----	5	----
Missouri:											
Kansas City	7	6	0	0	0	4	2	4	2	4	94
St. Joseph	2	2	0	3	0	1	0	0	0	0	28
St. Louis	17	11	0	1	0	8	5	5	0	9	194
North Dakota:											
Fargo	2	2	0	0	0	0	0	0	0	6	2
Grand Forks	1	0	0	0	----	----	0	0	----	0	----
South Dakota:											
Aberdeen	2	0	0	0	----	----	0	0	----	3	----
Sioux Falls	1	0	0	1	----	----	0	0	----	0	5
Nebraska:											
Omaha	2	0	0	0	0	2	1	0	0	0	----
Kansas:											
Topeka	2	9	0	0	0	0	1	0	0	1	15
Wichita	3	7	0	0	0	2	2	0	0	4	29
SOUTH ATLANTIC											
Delaware:											
Wilmington	1	1	0	0	0	0	0	0	0	1	23
Maryland:											
Baltimore	8	9	0	0	0	11	10	4	0	28	201
Cumberland	0	0	0	0	0	3	1	1	0	0	13
Frederick	0	0	0	0	0	0	0	0	0	1	

City reports for week ended September 28, 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		
SOUTH ATLANTIC—continued											
District of Columbia:											
Washington	8	4	0	0	0	13	4	0	0	5	117
Virginia:											
Lynchburg	1	0	0	0	0	2	1	0	0	13	8
Norfolk	0	4	0	0	0	0	1	0	0	0	
Richmond	6	4	0	0	0	10	2	0	0	0	67
Roanoke	2	2	0	0	0	2	1	0	0	0	19
West Virginia:											
Charleston	2	5	0	0	0	0	1	0	0	1	19
Wheeling	3	1	0	0	0	1	0	0	0	4	17
North Carolina:											
Raleigh	1	9	0	0	0	0	0	3	0	2	14
Wilmington	1	2	0	0	0	0	0	0	1	1	18
Winston-Salem	3	4	0	0	0	0	2	1	0	4	12
South Carolina:											
Charleston	0	1	1	0	0	1	2	0	0	0	22
Columbia	1	1	0	0	0	0	0	0	0	3	17
Georgia:											
Atlanta	6	13	0	0	0	2	4	0	0	3	82
Brunswick	0	0	0	0	0	0	0	0	0	0	2
Savannah	0	0	0	0	0	0	1	0	0	0	23
Florida:											
Miami	0	0	0	0	0	1	0	1	0	1	23
Tampa	0	0	0	0	0	2	0	0	0	1	20
EAST SOUTH CENTRAL											
Kentucky:											
Covington	1	0	0	0	0	1	0	0	0	0	10
Tennessee:											
Memphis	3	1	0	0	0	7	5	1	0	3	58
Nashville	2	1	0	0	0	1	4	4	1	1	44
Alabama:											
Birmingham	4	6	0	0	0	2	3	7	0	1	58
Mobile	0	1	0	0	0	2	0	0	0	0	25
Montgomery	1	2	0	0			1	0		1	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	1	0	0			1	0		1	
Little Rock	2	1	0	0	0	3	1	0	0	0	
Louisiana:											
New Orleans	3	4	0	0	0	11	4	2	1	3	145
Shreveport	1	2	0	0	0	2	0	0	1	0	26
Oklahoma:											
Oklahoma City	2	6	0	1	0	0	2	2	0	0	28
Tulsa	2	5	0	0			1	1		4	
Texas:											
Dallas	3	5	0	0	0	0	2	2	0	0	49
Fort Worth	1	2	0	0	0	0	1	[1] 1	0	0	
Galveston	1	0	0	0	0	0	0	0	0	0	7
Houston	1	4	0	0	0	2	1	2	0	0	63
San Antonio	0	2	0	0	0	9	1	1	0	0	53
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	0	8
Great Falls	1	1	0	0	0	0	0	0	0	0	5
Helena	0	0	0	0	0	1	0	32	2	0	8
Missoula	1	0	1	11	0	0	0	2	0	0	6
Idaho:											
Boise	0	0	0	0	0	0	1	0	0	0	9
Colorado:											
Denver	5	5	0	0	0	7	3	0	0	7	58
Pueblo	1	0	0	0	0	0	0	2	0	0	10

[1] Nonresident.

City reports for week ended September 28, 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		estimated expectancy	Cases reported	cough, Deaths reported		
MOUNTAIN—con.											
New Mexico:											
Albuquerque	0	0	0	0	0	2	2	2	0	0	12
Utah:											
Salt Lake City	1	10	0	0	0	0	2	0	0	4	27
Nevada:											
Reno	0	0	0	0	0	1	0	0	0	0	5
PACIFIC											
Washington:											
Seattle	5	7	1	0	----	----	2	0	----	17	----
Spokane	4	0	1	0	----	----	1	2	----	0	----
Tacoma	1	5	1	4	0	2	0	1	0	2	21
Oregon:											
Portland	5	5	3	1	0	2	2	0	0	0	70
Salem	1	0	1	1	0	0	1	1	0	0	----
California:											
Los Angeles	11	12	2	0	0	19	3	0	0	33	210
Sacramento	2	1	0	0	0	4	1	0	0	4	26
San Francisco	8	10	1	0	0	9	1	1	0	2	126

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:									
Springfield	0	0	0	0	0	0	0	1	0
Worcester	0	0	1	1	0	0	0	0	0
Rhode Island:									
Providence	0	0	1	1	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
Buffalo	0	0	0	0	0	0	1	15	2
New York	16	6	2	1	0	0	20	2	0
Rochester	0	0	0	0	0	0	1	2	0
New Jersey:									
Newark	2	0	0	0	0	0	1	0	0
Pennsylvania:									
Philadelphia	5	2	0	0	0	0	1	2	1
Pittsburgh	2	2	0	0	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cleveland	2	0	0	0	0	1	1	0	1
Illinois:									
Chicago	7	2	1	1	0	0	3	0	0
Springfield	0	0	0	0	0	0	1	1	0
Michigan:									
Flint	0	1	0	0	0	0	1	0	0
Wisconsin:									
Racine	1	0	0	0	0	0	0	0	0

[1] Nonresident.

City reports for week ended September 28, 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
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	1	0	0	0	0	0	0	2	0
Iowa:									
Des Moines	0	0	0	0	0	0	0	1	0
Missouri:									
Kansas City	2	2	0	0	0	0	0	0	0
St. Louis	1	1	0	0	0	0	0	1	0
Nebraska:									
Omaha	1	0	0	0	0	0	0	0	0
Kansas:									
Wichita	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Virginia:									
Lynchburg	0	0	0	0	0	0	0	3	0
Richmond	0	0	0	0	0	0	0	2	0
Roanoke	0	0	0	0	0	0	0	2	0
North Carolina:									
Raleigh	0	0	0	0	0	1	0	0	0
Winston-Salem	0	0	0	0	0	1	0	2	0
South Carolina:									
Charleston	0	0	0	0	1	1	0	0	0
Georgia:									
Savannah	1	0	0	0	4	1	0	0	0
Florida: [1]									
Tampa [1]	0	0	0	0	0	0	0	1	0
EAST SOUTH CENTRAL									
Alabama:									
Birmingham [1]	0	0	0	0	0	1	0	1	0
Montgomery	0	0	0	0	0	0	0	1	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	0	0	0	0	2	2	0	1	0
Shreveport	1	1	0	0	0	0	0	0	0
Texas:									
Dallas [1]	0	0	0	0	1	1	0	0	0
Galveston	0	0	0	0	0	1	0	0	0
MOUNTAIN									
Colorado:									
Pueblo	2	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	0	1	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	1	0	0	0	0	0	1	0	0
California:									
Los Angeles	0	1	1	1	0	0	1	1	0
Sacramento	2	1	0	0	0	0	0	0	0
San Francisco	0	1	0	0	1	0	1	1	0

[1] Typhus fever, 4 cases—1 case at Miami and 1 case at Tampa, Fla.; 1 case at Birmingham, Ala.; and 1 case at Dallas, Tex.

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended September 28, 1929, compared with those for a like period ended September 29, 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 25 to September 28, 1929—Annual rates per 100,000 popluation, compared with rates for the corresponding period of 1928 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Aug. 31, 1929	Sept. 1, 1928	Sept. 7, 1929	Sept 8, 1928	Sept. 14, 1929	Sept. 15, 1928	Sept. 21, 1929	Sept. 22, 1928	Sept. 28, 1929	Sept. 29, 1928
98 cities	62	[2] 57	[3] 64	51	66	[4] 75	[5] 75	79	[6] 81	88
New England	45	37	[7] 51	34	48	87	50	67	[8] 81	62
Middle Atlantic	54	59	45	49	41	58	54	63	60	72
East North Central	75	[2] 61	85	51	95	67	96	92	[9] 79	97
West North Central	25	51	[10] 39	70	58	98	63	92	100	76
South Atlantic	90	73	[11] 92	48	133	[4] 113	114	92	112	138
East South Central	115	35	75	42	115	154	136	182	136	161
West South Central	142	101	138	77	63	142	[5] 156	93	170	109
Mountain	17	44	70	53	26	35	70	62	26	106
Pacific	27	20	35	49	22	49	20	54	67	72

MEASLES CASE RATES

98 cities	14	[2] 22	[3] 13	20	16	[4] 18	[5] 15	18	[6] 14	19
New England	20	90	[7] 24	55	16	39	32	48	[8] 17	55
Middle Atlantic	8	16	7	18	12	15	7	15	10	10
East North Central	22	[2] 28	16	24	20	24	17	20	[9] 15	22
West North Central	8	4	[10] 2	2	6	14	6	18	10	14
South Atlantic	13	4	[11] 2	6	7	[4] 12	7	17	13	13
East South Central	7	14	14	0	7	14	7	7	0	0
West South Central	8	0	4	4	12	0	[5] 8	4	12	8
Mountain	44	18	26	35	61	44	26	0	44	9
Pacific	20	13	47	28	40	13	52	10	25	41

SCARLET FEVER CASE RATES

98 cities	41	[2] 32	[3] 52	37	54	[4] 57	[5] 68	63	[6] 92	77
New England	38	64	[7] 94	46	52	78	50	101	[8] 100	83
Middle Atlantic	16	14	25	18	16	28	25	24	42	38
East North Central	63	[2] 32	69	44	90	88	120	91	[9] 158	100
West North Central	44	55	[10] 63	39	58	68	92	104	108	115
South Atlantic	45	33	[11] 64	50	47	[4] 45	66	71	105	80
East South Central	34	91	41	70	95	105	48	56	75	210
West South Central	75	45	36	57	95	45	[5] 76	28	75	85
Mountain	61	35	17	27	70	27	113	53	139	62
Pacific	47	31	80	59	75	64	70	77	87	87

SMALLPOX CASE RATES

98 cities	4	[2] 1	[3] 4	1	3	[4] 1	[5] 5	1	[6] 4	2
New England	0	0	[7] 0	0	0	0	0	0	[8] 0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	10	[2] 1	10	1	4	0	10	1	[9] 3	1
West North Central	4	0	[10] 2	4	8	4	6	4	8	2
South Atlantic	0	0	[11] 0	0	2	[4] 0	0	0	0	0
East South Central	0	0	0	0	0	0	0	0	0	7
West South Central	4	0	0	0	0	4	[5] 0	4	0	4
Mountain	0	0	9	9	9	9	52	0	96	9
Pacific	15	5	15	8	12	3	17	5	10	15

See footnotes at end of table.

Summary of weekly reports from cities, August 25 to September 28, 1929—Annual rates per 100,000 population, compared with rates for the corresponding period of 1928—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Aug. 31, 1929	Sept. 1, 1928	Sept. 7, 1929	Sept. 8, 1928	Sept. 14, 1929	Sept. 15, 1928	Sept. 21, 1929	Sept. 22, 1928	Sept. 28, 1929	Sept. 29, 1928
98 cities	27	[2] 29	[9] 18	24	21	[4] 28	[5] 22	27	[6] 21	23
New England	29	23	[7] 3	16	16	14	14	21	[8] 7	9
Middle Atlantic	27	18	20	25	18	29	14	23	12	26
East North Central	13	[2] 15	13	13	10	14	11	16	[9] 9	14
West North Central	23	39	[10] 12	20	17	25	6	31	23	27
South Atlantic	52	46	[11] 34	36	34	[4] 39	26	33	17	27
East South Central	102	175	54	105	88	140	0	112	81	77
West South Central	51	73	16	28	51	28	[5] 93	69	28	41
Mountain	17	44	44	80	70	18	340	27	313	18
Pacific	12	26	15	13	20	38	7	18	10	13

INFLUENZA DEATH RATES

91 cities	2	[3] 3	[3] 3	3	3	[4] 5	[5] 2	4	[6] 5	6
New England	0	0	[7] 0	0	0	0	2	2	[8] 2	5
Middle Atlantic	2	3	2	2	2	4	0	5	5	2
East North Central	2	[3] 3	6	2	2	5	2	4	[9] 5	3
West North Central	0	3	[10] 0	3	6	15	6	3	3	3
South Atlantic	2	4	[11] 4	8	2	[4] 8	2	4	6	8
East South Central	0	8	7	23	7	23	7	15	0	8
West South Central	4	4	0	8	12	8	[5] 0	4	12	29
Mountain	9	18	0	0	9	0	9	0	17	0
Pacific	0	3	3	7	0	3	10	0	3	24

PNEUMONIA DEATH RATES

91 cities	55	[2] 56	[3] 58	58	55	[4] 65	[5] 54	68	[6] 67	68
New England	50	30	[7] 46	48	36	62	29	76	[8] 69	60
Middle Atlantic	61	61	75	56	66	69	59	74	72	75
East North Central	51	[2] 50	44	60	47	64	47	59	[9] 53	51
West North Central	33	46	[10] 53	34	45	64	39	61	81	61
South Atlantic	56	75	[11] 64	71	52	[4] 70	66	84	60	80
East South Central	52	100	74	69	89	38	67	69	118	123
West South Central	101	67	32	58	57	71	[5] 56	12	97	100
Mountain	44	53	52	44	70	44	104	71	70	35
Pacific	30	40	33	78	43	61	59	91	39	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] Lynchburg, Va., not included.
[5] Shreveport, La., not included.
[6] Hartford, Conn., and Detroit, Mich., not included.
[7] Pawtucket and Providence, R. I., not included.
[8] Hartford, Conn., not included.
[9] Detroit, Mich., not included.
[10] Topeka, Kans., not included.
[11] Brunswick, Ga., 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	8,001,300	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 21, 1929.—The Department of Pensions and National Health reports cases of certain communicable diseases in Canada for the week ended September 21, 1929, as follows:

Province	Cerebrospinal fever	Influenza	Poliomyelitis	Smallpox	Typhoid fever
Prince Edward Island					
Nova Scotia	1				
New Brunswick					5
Quebec			11		27
Ontario	1	2	48	7	37
Manitoba			8		1
Saskatchewan	2		4		2
Alberta			3	4	4
British Columbia			2		2
Total	4	2	76	11	78

Quebec Province—Communicable diseases—Week ended September 21, 1929.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended September 21, 1929, as follows:

Disease	Cases	Disease	Cases
Chicken pox	1	Poliomyelitis	11
Diphtheria	37	Scarlet fever	45
German measles	2	Smallpox	1
Influenza	3	Tuberculosis	70
Measles	7	Typhoid fever	27
Mumps	5	Whooping cough	87

Quebec Province—Vital statistics—June, 1929.—Births, deaths, and marriages for the month of June, 1929, in the Province of Quebec, Canada, with deaths from certain principal causes, are shown in the following table:

Estimated population	2,691,000	Deaths from—Continued.	
Births	6,611	Heart disease	299
Birth rate per 1,000 population	29.9	Influenza	45
Deaths	2,593	Measles	22
Death rate per 1,000 population	11.7	Pneumonia	196
Deaths under 1 year	662	Scarlet fever	17
Infant mortality rate	100.1	Smallpox	0
Marriages	2,738	Syphilis	7
Deaths from—		Tuberculosis (pulmonary)	179
Cancer	161	Tuberculosis (other forms)	61
Cerebrospinal meningitis	9	Typhoid fever	21
Diabetes	17	Violence	131
Diarrhea	105	Whooping cough	18
Diphtheria	21		

CUBA

Habana—Communicable diseases—September, 1929.—During the month of September, 1929, certain communicable diseases were reported in the city of Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis	1	1	Measles	12	
Chicken pox	2		Scarlet fever	2	
Diphtheria	6	4	Tuberculosis	89	17
Leprosy	2		Typhoid fever [1]	23	8
Malaria [1]	19	4			

[1] Many of these cases are from the interior.

Provinces—Communicable diseases—Four weeks ended May 11, 1929.—During the four weeks from April 14 to May 11, 1929, cases of certain communicable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer		8		5			13
Cerebrospinal meningitis		1					1
Chicken pox		23	7	22	1	7	60
Diphtheria	4	33	1	3	4	2	47
Malaria		23	1	3	14	83	124
Measles	32	169	8	11	2		222
Paratyphoid fever	1	5	2	5	1	4	18
Scarlet fever	1	9					10
Typhoid fever	17	48	10	18	14	19	126

HAWAII TERRITORY

Hawaii—Hamakua District—Plague-infected rats—June, July, 1929.—Under date of September 26, 1929, three plague-infected rats were reported in the District of Hamakua, Island of Hawaii. One rat was found at Kukuaiau, June 26, 1929; one at Honakaa Village, July 8, and one at Paauhau Plantation, July 16, 1929.

MEXICO

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

Disease	Cases	Deaths	Disease	Cases	Deaths
Enteritis (various)	8	39	Tuberculosis	63	23
Influenza	5	1	Typhoid fever	3	6
Malaria	86	28	Whooping cough		3

PANAMA

Panama City—Smallpox.—A report dated October 7, 1929, stated that there had been a total of 340 cases of mild smallpox in the city of Panama from the beginning of the outbreak (about June 16) to October

7, 1929. On the latter date there were 124 cases of smallpox in hospitals. A general vaccination campaign had been carried on and new cases were decreasing.

TRINIDAD (BRITISH WEST INDIES)

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

	1925	1926	1927	1928	1929
Number of births	123	144	125	134	144
Birth rate per 1,000 population	19.2	26.3	22.6	24.1	25.5
Number of deaths	126	115	117	118	140
Death rate per 1,000 population	19.7	20.9	21.2	21.2	24.8
Deaths under 1 year	31	24	20	21	27
Infant mortality rate per 1,000 births	252.0	166.7	160.0	156.7	187.5

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		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
Ceylon	C			3													
	D			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	1	
Shanghai	C					1		1			9	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	20	6	
Tientsin	C																P
Chosen: Chemulpo	C															P	
India	C	9,046	18,521	30,616	29,449	7,315	6,946	8,271	9,549	10,105	10,269						
	D	4,997	11,069	20,311	19,910	4,783	4,431	5,166	4,963	6,129	6,230						
Bassein	D	45	118	38	2					3		3					
Bombay	C	6	3		2					1	1						
	D	2		2	2					1							
Calcutta	C	552	788	924	354	82	69	59	65	65		64	41				
	D	307	461	605	176	41	29	59	28	24	28	36	18	13	15	15	
Karachi	C										1	3	6	1	4	6	
Madras	C			1				1									
	D							1	1								
Moulmein	D	7	6	31	5			1									
Negapatam	C				1			1									
Rangoon	C	15	8	13	8			1		1							
	D	37	10	7	8			1		1							
Tuticorin	C				34	4	2										
	D				30		2										
Vizagapatam	D							1									

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

CHOLERA—Continued

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

Place		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
India (French):																	
Chandernagor	C	3	3	3	3	1	1				1						
	D	3	1	3	3	1			1								
Karikal	C	20	3								1						
	D	15	3														
Pondicherry Province	C	46		3	3												
	D	38		3	3												
India (Portuguese)	C											1					
	D											1					
Indo-China (see also table below):																	
Pnompenh	C	13	15	14	11	2	2	3				1	2		2		1
	D	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	18	8	
Shimonoseki	C												P	2			
Siam	C	397	619	619	469	214	49	54	54	123	29	13	15	12			
	D	269	404	436	285	112	38	26	26	80	17	10	5	11			
Anthoang	C								4				10				
	D								4				3				
Ayudhaya	C	1	29	2	25			6	11		2						
	D	1	19		11			3	8								
Bangkok	C	38	111	131	30	2	2	1	2		2	3	4	1	3	4	2
	D	21	74	77	13		1					2	1	1	2	1	1
Chaxoengsao	C			1													
	D			1													
Dhannapuri	C		17														
	D		7														
Lobpuri	C		1										2	3			
	D		1										2	3			
Nagara Pathom	C		36	13													
	D		20	10													
Nagara Rajsima	C							21	36								

Smud Songram	D							12	17									
	C							2	1									
	D							2	1									
Sridharmaraj Province [1]	C									2	13							
	D									2	11							
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. 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, at Shanghai	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			July, 1929			August, 1929			Sept. 1-10, 1929
						1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-31	
Indo-China (French) (see also table above):															
Annam	C		6	20	[2] 20				2	5	2		3	14	1
Cambodia	C	69	29	84	[2] 215				55	71	60		21	14	4
Cochin-China	C	223	183	88	[2] 123				146	123	46		45	15	45
Laos	C								1		12				
Tonkin	C				5	4									

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

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

PLAGUE

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

Place		Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	June 30–July 27, 1929	Week ended— August, 1929					Week ended— September, 1929				Oct. 5, 1929
							3	10	17	24	31	7	14	21	28	
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					2										
	D					2										
Djugu	C			2	3	5			1		1	1				
	D			3	3	5			1		1	1				
Rekwa	C					2										
	D					2										
Brazil: Porto Alegre	C		1													
British East Africa (see also table below): Uganda	C	130	231	450	1,437	1,437	296	270	152	122						
	D	124	219	409	1,072	1,199	263	235	125	107						
Canary Islands: Tenerife	D					1										
Laguna	C			1												
Ceylon:																
Colombo	C	4	5	7	2	P						1				
	D	1	4	6	3							1				
Plague-infected rats			1			6				1	7					
Galle	C					3					1	3	1			
	D					3					1	2				
Kandy	C									1	1					
	D									1	1					
Matara	C					12										
	D					11										
China:																
Amoy	C						P									
Foochow	C					P		P								
Hong Kong	C									1		1				
	D									1		1				
Plague-infected rats										3						
Manchuria—Tungliao District	C					P	13	3								

Dutch East Indies: Java—																
Batavia and West Java	C	64	63	58	47	69	33	33								
	D	65	63	56	47	68	33	32								
Plague-infected rats		5	8													
East Java and Madura	C	3				3		2								
	D	3				3		2								
Surabaya	C				3	11	3									
	D				3	11	3									
Ecuador (see table below).																
Egypt:																
Alexandria	C			1	1	7	1		1	3	3	2	4	2	3	1
	D				1	3		1			1	1	2	1	1	
Assuan	C					4							1			
	D					4										
Beheira	C					2										
	D					2										
Beni Suef	C	2	7		6	4	1						1			
	D	2	2		2											
Dakahlieh	C			9	1	1							2			
	D			1					1				2			
Gharbieh	C					9			1							
	D					1			1							
Girga	C					3										
Kena	C					2										
	D					2										
Menufieh Province	C					3										
Miniah	C					7			1							
Port Said	C		2	3	2	3	2	1	2	1	2					
	D		1	2	1	2	1		3		3					
Suez	C	2				1									P	
France: Paris	C															
Greece (see also table below):																
Patras	C										1		1	1		
Piræus	C										1	1	1			
Hawaii: Hamakua—Kukuihaele—Plague-infected rats				6	1										3	
India	C	16,011	6,884	1,394	677	1,812	909	1,070								
	D	12,592	5,623	1,205	414	1,059	536	599								
Bassein	C		1			9	4	3	2	4	2	1	1			
	D	6	2	2	4	1	5	3	2	4	1	1	2			
Bombay	C	8	8	1			1				1					
	D	6	6	1	4		1				1			1		
Plague-infected rats		57	81	44	35	23	7			3	9			7		
Madras Presidency	C	132	38	64	85	97	62	72	41							
	D	80	14	40	38	52	27	36	29							
Rangoon	C	12	11	2		24	5	4	3	3						
	D	9	15	3	9	18	5	2	3	2	4	2	1			
Plague-infected rats		15	10	5	6	9				10	7	6	2			
Indo-China (see also table below):																
Pnompenh	C	10	8	5	4	7	1	5	2		1	1	2			
	D	10	8	3	3	8	1	5	2		1	1	2			
Saigon and Cholon	C				1	6	2	1		1		1				
	D					1	2	1		1						

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

PLAGUE—Continued

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

Place		Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	June 30–July 27, 1929	Week ended— August, 1929 3	10	17	24	31	September, 1929 7	14	21	28	Oct. 5, 1929
Iraq:																
Baghdad	C	11	8	14	12	1	-----	1	1	-----	-----	-----	-----	-----	-----	-----
	D	3	7	5	2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Plague-infected rats		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	5	-----	-----	-----	-----	-----	-----	-----	P	-----	-----
	D	1	1	-----	2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Morocco	C	106	31	42	16	39	-----	-----	-----	4	1	-----	-----	-----	-----	-----
	D	73	16	4	5	17	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Nigeria: Lagos	C	4	8	5	2	1	-----	1	2	6	-----	4	6	5	-----	-----
	D	4	8	4	1	1	-----	1	2	5	-----	4	6	5	-----	-----
Plague-infected rats		18	6	8	4	13	3	8	2	-----	-----	-----	-----	-----	-----	-----
Peru (see table below):																
Senegal (see table below).																
Siam	C	9	10	9	1	4	-----	3	-----	-----	-----	-----	-----	-----	-----	-----
	D	8	8	5	1	3	-----	3	-----	-----	-----	-----	-----	-----	-----	-----
Bangkok	C	-----	-----	2	-----	1	-----	3	-----	-----	-----	1	-----	-----	-----	-----
	D	-----	-----	1	-----	1	-----	3	-----	-----	-----	1	-----	-----	-----	-----
Nagara Pathom	C	4	2	3	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
	D	4	2	2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Straits Settlements: Singapore	C	-----	1	-----	-----	-----	-----	-----	-----	-----	-----	-----	1	-----	-----	-----
	D	-----	1	1	-----	-----	-----	-----	-----	-----	-----	-----	1	-----	-----	-----
Tunisia: Tunis	C	-----	-----	-----	-----	P	-----	-----	-----	-----	4	4	2	-----	-----	-----
	D	-----	-----	-----	-----	-----	-----	-----	-----	-----	1	-----	-----	-----	-----	-----
Turkey:																
Adalia	C	-----	-----	-----	-----	-----	-----	1	-----	-----	-----	-----	-----	-----	-----	-----
Constantinople	C	-----	-----	-----	P	2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Union of Socialist Soviet Republics:																
Caucasia	C	-----	-----	-----	1	7	-----	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	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 (see also table above)	C		1			3	2
	D					1	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			1	
	D	5	3			1	
Tananarive Province	C	120	78		11	16	
	D	119	74		11	16	

Place		March, 1929	April, 1929	May, 1929	June, 1929	July, 1929	August, 1929
Peru	C	35		10	16	11	
	D	13		5	8	3	
Senegal:							
Baol [1]	C	6	1	21	43	22	32
	D	3	1	6	18	9	13
Dakar [1]	C		6	17	67	62	76
	D		4	11	45	45	65
Louga [1]	C					59	121
	D					39	70
Rufisque [1]	C					22	
	D					7	
Thies [1]	C	4	20	6	10	61	53
	D	3	20	3	6	34	33
Tivaouane [1]	C			22	93	161	188
	D			10	50	96	119

[1] Incomplete reports.

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

SMALLPOX

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

Place		Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	June 30–July 27, 1929	Week ended— August, 1929					Week ended— September, 1929				Week ended— Oct. 5, 1929
							3	10	17	24	31	7	14	21	28	
Algeria:																
Algiers	C	3	5	5	6	7		1								
Cherchell	C	42	1		1											
Oran	C	1	2	5	1	1							4			
Angola (see table below).																
Arabia: Aden	C	30	69	40	110	103	11	17	6	4	1	2	1			
	D	8	20	20	20	56	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	4	7	10		2			2					
British South Africa:																
Northern Rhodesia	C					73										
	D					4										
Southern Rhodesia	C	69	13	12		5										
Canada:																
Alberta	C	7	8		12		1	2	1					4		
Calgary	C		2				1	1								
Edmonton	C	12	5		4				1							
British Columbia—Vancouver	C	64	46	23	13	14	5		2	1		2	3			
Manitoba	C	3	12	6	6	1										
Winnipeg and vicinity	C				2											
New Brunswick	C	3														
Nova Scotia	C		1				2									
Ontario	C	57	113	40	84	57		2	5		5	4	3	7	5	
Niagara Falls	C	1		3												
North Bay	C		3	8	2	7								3	4	2
Ottawa	C				1	1		1								
Toronto	C	2	1		5	7					1	1		1	1	
Windsor	C		3	3	2	2										
Prince Edward Island	C						1	1								
Quebec	C	14	34	12	10	2	1	1	1							

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

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

SMALLPOX—Continued

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

Place		Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	June 30–July 27, 1929	Week ended— August, 1929 3	10	17	24	31	September, 1929 7	14	21	28	Oct. 1929
Ecuador (see table below).																
Egypt:																
Port Said	C		1		1											
Suez	C		5								3	2				
France (see table below).																
Great Britain:																
England and Wales	C	1,156	1,423	1,179	789	541	129	114	120	139	131	150	96	119		
Ashton under Lyne	C					7		2	1							
Birmingham	C		1	1												
Bradford	C	3	1	4	4	3					1	3	1	3		
Bristol	C					1										
Cardiff	C	1	1	4						1						
Castleford	C	56	31	12	3	1										
Leeds	C	8	3		1	1				1		2				
Liverpool	C	1														
London	C	58	201	193	167	107	31	19		28	37	41	27	39		
London and Great Towns	C	598	888	656	496	363	73	60	74	90	79	81	59	85		
	D	3	6	3	1	4										
Newcastle-on-Tyne	C	10	3	37	20	15	1	2		1	2					
Nottingham	C	2														
Stoke-on-Trent	C	72	133	86	62	32	1	10	1	6	2	2	7	7		
West Ham	C					26	22	17	20							
Scotland—																
Aberdeen	C		2													
Glasgow	C	1	19	1												
Greece (see table below).																
Hedjaz	C	84	77	40	83	53	4	2		5	17	2	2	1		
	D	52	52	24	53	35	3	2		14	3	1				
Honduras: Puerto Castilla	C			1												
India	C	19,120	22,556	17,011	11,549	7,838	1,717	1,435								
	D	3,983	5,060	4,185	3,006	2,062	472	397								
Bombay	C	441	315	208	147	92	18	18	16	11	18	5	6			
	D	206	175	131	99	55	7	9	12	3	10	3	5			
Calcutta	C	127	101	39	27	16	13	2	9	7	2	7	9			
	D	77	74	36	24	11	11	2	3	6		7	6			

Cochin	C										4	2	1	4			
	D											1					
Karachi	C	206	144	84	35	25	6	1	2	6	5	6	8				
	D	70	59	59	25	13	1	1	1	4	1	6	3				
Madras	C	392	327	174	88	122	28	16	33	12	19	14	16				
	D	83	84	61	20	32	8	6	2	6	3	4	7				
Moulmein	C	18	7	8	6	10	2	8	1		2	1	2				
	D	4	6	6	5	5	1	3	1		1	1					
Negapatam	C	9	7	2	6	4				1	1	1	1				
	D	1										1					
Rangoon	C	13	7	1		3	1										
	D	6	3	1		1											
Tuticorin	C		1		1												
Vizagapatam	C	26	28	2	4	3						1					
	D	5	8		2	2		1				1					
India (French):																	
Karikal	C	2	2	3	5	1	2	10				8					
	D	2	2	3	5	1	2					7					
Pondicherry Province	C	70	60	32	18	21	6	3	2	1	2	2		2			
	D	60	51	30	15	16	1	3	2	1	2	2		2			
India (Portuguese)	C			3	9	4											
Indo-China (see also table below):																	
Pnompenh	C	68	40	22	8	9		2	1		1						
	D	33	24	12	2	3	1	1	1		1						
Saigon and Cholon	C	2	2	1		1											
	D			1	1												
Iraq:																	
Baghdad	C	6	6	3	1	1											
	D	1															
Basra	C	9	8	8	9	1											
	D	2	6	8	1												
Diyalah Liwa	C			48		8				13				4			
	D			13		2				12							
Mossoul	C				20	12	21			60	35	7	18	8			
	D						1			12	12		5				
Ivory Coast (see table below).																	
Jamaica (outside Kingston) (alastrim)	C		1	1		7											
Japan:																	
Niigata	C			12	2												
Osaka	C			1													
Shimane Province	C	16	3														
Tokyo	C			2	1												
Macao	D	32	20	5	2												
Mexico:																	
Acapulco	C		1	1	2	3	1	2									
	D		1	1	2	3	1	2									
Aguascalientes	D	5	9	6	17	11	2	3	1	1	3	1	2				
Chiapas Province	C	P															
Coahuila	D				1												
Jalisco (State): Guadalajara	D	13	12	15	11	6	1	2		2	5	1	2		2		
Juarez	D	3								3	P						
Mexico City and surrounding territory	C	1		1	9	13	5	5	7	4	1	2	2				
	D				10	3		3	3			1					

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

SMALLPOX—Continued

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

Place		Mar. 10–Apr. 6, 1929	Apr. 7–May 4, 1929	May 5–June 1, 1929	June 2–29, 1929	June 30–July 27, 1929	Week ended— August, 1929 3	10	17	24	31	September, 1929 7	14	21	28	Oct. 5, 1929
Mexico—Continued.																
Tampico	C	2														
Vera Cruz	D	2														
Morocco (see table below).																
Netherlands: Rotterdam	C					40	30	53	58		33	31	21	25		
	D						1					4	2	1		
Nicaragua: Managua	C		P													
Nigeria: Lagos	C	1	1	2		1										
Norway: Stavanger	C		2													
Palestine	C			1												
Panama [1]	C					14		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	4		1						1		
Oporto	C	1	2		2	2										
Senegal (see table below).																
Siam	C		55	32	27	71	1	19	4	8						
	D		8	9	7	14	2	1	2	2						
Somaliland, British: Boales	C				11	4							3	1		
	D				4									2		
Somaliland, French: Jibuti	C			3	16	123	8	10	6	7	5	3		2		
	D			1	8	21	11	1	6	3	5	3	1	2		
Spain: Valencia	C	5			1											
Straits Settlements: Singapore	C	1														
Sudan (Anglo-Egyptian)	C	248	377	1,570	1,172	1,121	55	11	12	9	10	580				
	D	29	26	132	195	164	51	1	5	16	16	79				
Sudan (French) (see table below).																
Syria (see table below).																
Tunisia: Tunis	C		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	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 Calcutta	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														

Place		February, 1929	March, 1929	April, 1929	May, 1929	June, 1929	July, 1929			August, 1929			September, 1929	
							1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20
Indo-China (see also table above)	C	364	561	755	410		87	72			123	140	64	
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	36	26	1		16	6	7	4	5

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

Place		March, 1929	April, 1929	May, 1929	June, 1929	July, 1929	August, 1929
France	C	5	5	11	15		
Greece	C	2	4	5	2		
Morocco	C	8	12	39	2	9	10
Persia	D	8				51	
Turkey	C		1		11		1

[1] 340 cases of smallpox were reported from June 16 to Oct. 7, 1929, in Panama City, Panama.

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

TYPHUS FEVER

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

Place		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	28
Algeria:																		
Algiers	C	6	11	1	1		1	6	2		3	1			2	1		
Constantine Department	C	3			11						2							
Oran	C		8	14	5	3		6			2					3		
Bolivia: Pacajes Province—Calacoto Canton	C										19							
	D										5							
British South Africa: Northern Rhodesia	C			3														
	D			3														
Bulgaria	C	40	28	21	4	1	2	2	7					7				
	D	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														1	
	D	1		1														
Beheira Province	C	67	50	159	13	5			3	25		6				6		9
	D	9	9	24	6	2			2							2		2
Cairo	C			2		1		1					4	1	1		1	
Dakahlieh Province	C	34																
Menoufieh Province	C		35															
Port Said	C			2	2	3	1				1	1	1					
Suez	C											1	1					
Greece (see table below).																		
Hungary	C			1														
Indo-China (see table below).																		
Ireland (Irish Free State):																		
Cavan County—Carrickmacross	C			1														
Donegal County—																		
Inishower	C		1															
Stranorlar	C				1													

Kerry County—																		
Dingle	C	2	2															
Killarney	C		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	4	4	8	14	4	2		5		7	2	2	3	3	3		
	D		1	2	1								1	2	3	1		
Morocco	C	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		1
Persia	C				5	18	8	13	14		23							
	D				4	6	1		3		8							
Poland	C	295	314	264	177	25	24	25	16	16	12	12	8	2	8			
	D	20	25	19	7	1	1	2		3	1	3		1	2			
Portugal:																		
Lisbon	C				1													
Oporto	C				1							1						
Rumania	C	220	135	179	91	7	19	2	5		5		4	2	8			
	D	30	16	31	13	1	1				1			1	2			
Tunisia	C	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	1	P	P	P					
Natal	C	P	P	P	P								P					
Orange Free State	C		P	P	P	P			P		P	P	P					
Transvaal	C	P	P	P	P				P		P	P	P					
Yugoslavia (see table below).																		

Place		March, 1929	April, 1929	May, 1929	June, 1929	July, 1929	August, 1929
Canada: Ontario	C				1		
Chosen	C	177	153	272			
	D	22	9	15			
Seoul	C	3	2	1	2		
Czechoslovakia	C	41	25	18	2	2	
	D	1		1			
Greece: Athens	C	4	2		3		6
Indo-China: Tonkin	C		2				

Place		March, 1929	April, 1929	May, 1929	June, 1929	July, 1929	August, 1929
Latvia	C	1	10	7	5		
Lithuania	C	62	101	63	27	10	7
	D	1	7	5	4	1	1
Turkey	C	11	3	7	10		3
	D			1	3		
Yugoslavia	C	7		19		3	7
	D			1		1	2

[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.

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

YELLOW FEVER

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

Place		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	28	Oct. 5, 1929
Belgian Congo: Tumba	C		1																
Brazil:																			
Bahia	C	1				1													
	D	1				1													
Nictheroy	C														1				
Para	C	2	1	2			1												
	D		1		1			1											
Pernambuco	C	4																	
Porto Alegre	C			[1] 1															
Rio de Janeiro	C	252	180	70	7	0	1	0	0	0	0	0	0	0	1	1	0	0	0
	D	132	94	38	5		1												
Colombia:																			
Simacota	C								4										
Socorro [2]	C					6			6										
Liberia: Monrovia	C	10	2		4	4													
	D	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.