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SALE OF MILK FROM UNREGISTERED DAIRY.

CALIFORNIA COURT DECIDES THAT IF THE MILK COMPLIES WITH THE STATE LAW A CUSTOMER CAN NOT REFUSE TO PAY FOR IT BECAUSE THE DAIRY WAS NOT REGISTERED.

After a dispute between a California cheese manufacturer and a dairyman who had supplied him with milk the cheese manufacturer refused to pay for milk which he had used, on the ground that the dairy from which the milk was delivered was not registered with the State authorities as required by law. The purity of the milk was not questioned, and it complied with the standards established by the State law.

The California Court of Appeal decided that the law requiring registration of dairies did not provide any penalty for failure to register other than a fine or imprisonment; that the sale of the milk was not unlawful; and that it must be paid for.

The opinion is published in this issue of the Public Health Reports, page 2523.

POLIOMYELITIS (INFANTILE PARALYSIS).

PREVALENCE AS REPORTED BY STATE HEALTH DEPARTMENTS.

In the last two issues of the Public Health Reports there were published tables showing the number of cases of poliomyelitis reported during the summer in cities in which five or more cases had been reported during any one week. The following tabular statement shows the number of cases reported by State authorities. The data are taken from reports made by the respective State health departments. The figures show the number of cases notified and recorded. For some States these constitute but a fraction of the cases that occurred. In some States the prevalence of disease is not recorded, and for these no data are available, except for certain municipalities.

Poliomyelitis—Cases reported by States.

State.	Period covered.	Cases reported.
Alabama	July 1 to Aug. 31	99
Arizona	July 1	1
Arkansas	July 1 to 31	5
California	do	12
Colorado	Jan. 1 to Aug. 17	4
Connecticut	July 2 to Sept. 9	583
District of Columbia	July 8 to Sept. 13	30
Delaware	Reported Aug. 22	5
Idaho	July 10 to Aug. 9	2
Illinois	July 1 to Sept. 10	495
Indiana	July 1 to Sept. 9	72
Iowa	July 1 to 31	30
Kansas	July 1 to Aug. 18	22
Louisiana	Jan. 1 to Aug. 31	59
Maine	Jan. 1 to Aug. 21	14
Maryland	July 1 to Sept. 14	110
Massachusetts	July 1 to 31	107
Michigan	July 1 to Aug. 31	214
Minnesota	Jan. 1 to Sept. 9	581
Mississippi	July 1 to 31	57
Montana	July 1 to Sept. 12	58
Nebraska	Reported July 11	2
New Jersey	July 1 to Sept. 14	3,230
New York (exclusive of New York City)	Jan. 1 to Sept. 9	2,592
Ohio	Jan. 1 to Aug. 15	166
Pennsylvania	July 1 to Aug. 11	273
Rhode Island	July 1 to 31	56
South Carolina	do	20
Tennessee	do	18
Texas	Jan. 1 to Aug. 10	30
Vermont	Aug. 1 to 31	8
Virginia	July 1 to Aug. 26	38
Washington	July 1 to 31	5
West Virginia	Aug. 1 to Sept. 9	15
Wisconsin	July 1 to Aug. 31	193

THE SEWAGE POLLUTION OF STREAMS.

ITS RELATION TO THE PUBLIC HEALTH.[1]

By W. H. Frost, Passed Assistant Surgeon, United States Public Health Service.

In every inhabited country the surface waters almost inevitably become more or less polluted with human excreta, but gross pollution of large streams, such as is now frequently encountered, results only where people are congregated in cities, discharging their wastes directly into watercourses through sewers, and these conditions are of comparatively recent development. This is especially the case in the United States, where many of the large cities have sprung up within a few decades; but even in the more densely populated European countries conditions of stream pollution have become much more serious within the last 50 to 100 years, with the development of sanitary sewerage.

A hundred years ago not even the great cities of Europe were provided with systematic and efficient sewerage systems for the removal of their wastes. They had sewers of some sort, but these were for the most part of erratic construction, designed more for surface drainage than for carrying away house wastes; and, indeed, the discharge

[1] Presented before the section on hygiene and sanitary science of the Ohio State Medical Association, Cleveland, Ohio, May 17, 1916.

of excreta into sewers was specifically prohibited, both in London and Paris, until the early part of the last century.

Modern sanitary sewerage systems with house connections for the removal of excreta and other domestic wastes are a comparatively recent development, the first movements toward systematic sanitary sewerage having been inaugurated about 1850. Since that time such rapid progress has been made in the sewerage of cities that now all the larger cities of this country have practically complete systems of sewers, with universal house connections; and though the smaller cities and villages are less completely sewered, public opinion is more and more insistently demanding adequate sewerage wherever people are assembled into communities.

The sum total of the benefits resulting from the provision of such sewerage systems for cities is indeed difficult, perhaps impossible, to estimate. Great as has been the effect of this improvement in the prevention of sewage-borne diseases, a just estimate of its influence is not to be based on this alone, but must take into account also the enormous social betterment resulting from the elimination of disgusting filth from the environment, the encouragement of more cleanly habits, and general elevation of ideals. Nevertheless, a direct consequence of this great sanitary achievement has been greatly to increase the pollution of watercourses; for the simplest and most obvious means of disposing of sewage is to discharge it directly into a convenient body of surface water, and this has been a common practice. Watercourses which previously were polluted with only such wastes as were thrown into them incidentally or washed in from the soil have now become much more grossly polluted by the discharge of fresh sewage from sewered communities.

In European countries the conditions resulting from the discharge of sewage into streams began to cause deep concern in the early period of development of sewerage systems, and during the last 75 years there has been a progressively increasing interest and activity in bettering such objectionable conditions and preventing their more serious consequences. The chief motive of this movement has always apparently been protection of the public health, as is evidenced in much of the legislation and especially by the fact that more or less authority in the control of stream pollution has commonly been vested in public-health authorities. In the early days of the movement the precise relations between stream pollution and public safety were, however, by no means clearly understood, and attention was very naturally directed first to the most offensive rather than the most truly serious conditions, the effort put forth being directed mostly toward the abatement of nuisances.

Very gross pollution of a stream with sewage gives rise to conditions so offensive as to constitute an obvious nuisance. Particles of fecal

matter and other débris may be seen floating upon the surface of such a stream, the waters of which are more or less discolored; solids carried in the sewage are deposited upon the sides and bottom of the watercourse, forming offensive sludge banks; and, especially during warm weather, decomposition of organic matter in the sludge banks and in the stream gives rise to very foul odors. As is now known, these foul odors, which constitute the most offensive of the above conditions, are associated with and largely dependent upon exhaustion of the atmospheric oxygen which is found dissolved in all natural waters exposed to the air. The highly complex and unstable organic matter of fresh sewage is attacked by the bacteria and other organisms which, in converting this organic matter to their uses as food, bring about more or less profound changes in its composition. In the presence of an abundant supply of oxygen dissolved in the water, these changes are mostly in the direction of oxidation, and their end result is the formation of well-oxidized, stable, and inoffensive compounds, such as nitrates, carbon dioxide, etc., so that the stream gradually becomes "purified." If, however, the dissolved oxygen of the stream is used up by this process more rapidly than it can be replaced from the atmosphere, the organisms present in the water, while continuing to act upon the sewage organic matter, bring about a very different set of changes. Instead of being oxidized into stable and inoffensive compounds, this matter now undergoes a process of anærobic fermentation, familiarly known as putrefaction, being broken up into unoxidized, offensive, and foul-smelling substances.

In former days, when there was a widespread belief that epidemics of disease were caused by emanations of foul-smelling gases, the offensive conditions in a highly polluted stream were considered a gross menace to the health of persons in the immediate vicinity. Nowadays it is recognized that foul odors and disgusting appearances, while certainly not conducive to health or happiness, exercise at most an ill-defined, probably indirect, influence in the causation of disease; and while the necessity for abating such nuisance is universally recognized, it is for the sake of common decency rather than for the prevention of specific diseases.

For the prevention of the nuisance resulting from gross sewage pollution various processes of sewage treatment have been devised. These processes differ widely in their details, but all have two principal objects—the removal of solids and more or less complete oxidation of organic matter. The coarser solids may be removed by screening, finer solids by detention of the sewage in settling tanks, allowing sedimentation. In some instances the settling of solids is hastened and facilitated by chemical precipitation, and in most settling tanks the settled solids are more or less liquefied by septic action. In many cases the removal of solids by screening or sedimentation is

sufficient to prevent nuisance from the discharge of sewage; but where the volume of the receiving body of water is small in proportion to that of the sewage which it receives, partial oxidation of the organic matter is often necessary to reduce the draft upon the oxygen supply of the watercourse, and thus prevent putrefactive changes. The process first applied, and still successfully used by some cities for such "purification" of sewage, is dispersion over large irrigation fields, where the sewage becomes purified by natural filtration through the soil. In this country such irrigation projects have generally been found impracticable, and sewage is more commonly treated by filtration, either through sand beds or, more commonly, through so-called trickling filters—beds of rather coarse broken stone upon which the sewage is sprinkled. In all these processes of sewage treatment, by percolation through soil, sand filters, or trickling filters, very rapid oxidation of organic matter takes place as the result of biological action, essentially similar to that which takes place in a stream in the presence of an abundant oxygen supply, but at a more rapid rate. The effluent from sewage thus treated is clear, comparatively inoffensive, and stable; that is, it will not putrefy, and may therefore be discharged into streams without causing nuisance.

Experience has proven that these processes of sewage treatment, with various combinations and modifications, are adequate for the prevention of the offensive nuisance resulting from excessive pollution of streams with raw sewage. The cost of such treatment, though considerable, is not prohibitive, and is being gradually reduced by further improvements in efficiency of methods.

Paradoxically, however, it is not these extreme conditions, giving rise to nuisance, which constitute the most serious and difficult problems of stream pollution. In the first place, the very offensiveness of a grossly polluted stream is so disgusting and has such direct economic effect in depreciating property values as to create an insistent popular demand for improvement of conditions. Quite commonly, too, the community responsible for the nuisance must itself suffer the consequences, and is therefore more ready to make the necessary expenditures for sewage treatment; and even if this is not the case, others suffering inconvenience thereby may usually, by recourse to the courts, compel the abatement of a nuisance which is obvious to all observers.

The prevention of grossly offensive nuisance is, however, only the minimum requirement, the first and the easiest step toward such control of stream pollution as will effectively safeguard the public health. The most serious consequences and the most difficult problems of control result from slighter pollution, not offensive, ordinarily not perceptible to the unaided senses. As is now thoroughly proven and generally understood, the most disastrous effect of stream

pollution is the causation of more or less fatal infectious diseases among persons who drink the polluted waters. Distinctly offensive pollution is, in a sense, a protection against this danger, since water which is offensively polluted with sewage will not be so generally used for drinking and other domestic purposes; but water which is entirely inoffensive to the senses of sight, taste, and smell may still be dangerously contaminated with disease-producing organisms; and it is the use of such water that has been responsible for the enormous toll of human health and lives chargeable to the sewage pollution of watercourses.

The diseases which may be and frequently are caused by drinking sewage-polluted water include typhoid fever, Asiatic cholera, dysentery, and various more or less well-defined forms of enteritis, as well as infections with animal parasites. Each of these diseases is caused by a specific organism and, with the exception of certain animal parasite infections, the diseases of this group are peculiar to man, not affecting the lower animals. The specific germs of these infections have apparently no other natural breeding place than the human body, and are found in nature only in the bodies and the excreta of infected persons. Consequently, infection can take place only by ingestion of the excreta of persons previously infected. Human excreta are, therefore, the most dangerous as well as the most disgusting constituent of sewage, since there is always the likelihood that they may contain these specific disease germs.

Typhoid fever is, in this country, by far the most common and serious of the sewage-borne diseases, being so widely prevalent that practically no community of 10,000 people remains for a whole year free from this disease; and as a certain proportion of those who suffer from typhoid fever become chronic bacillus carriers, continuing for years to discharge typhoid bacilli in their excreta, it may be taken as an axiom that a water supply even slightly contaminated with the intestinal discharges of any considerable number of persons is certain at some time in the course of a year to contain typhoid bacilli and to cause more or less typhoid fever among its consumers.

It is therefore accepted as one of the rudimentary requisites for conservation of the public health that public water supplies must be protected from such dangerous contamination. This means not merely protection from offensive contamination, not merely providing water which is clean in the ordinary sense, but protection at all times, under all circumstances, against even the probability of slight pollution with disease germs. Many of our cities, however, especially the larger cities, are forced to take their water supplies from bodies of surface water subject to more or less sewage pollution, and are thus confronted by the problem of providing safe, clean water supplies from such polluted and dangerous sources. This problem may

be approached from two directions—rigid prevention of the pollution of watercourses serving as sources of water supply, or efficient purification of all polluted water before it is distributed for use.

To completely protect a surface water supply from all danger of pollution with human excreta is a matter of more difficulty than is generally appreciated. Absolute protection can be guaranteed only by depopulation of the drainage area from which the water is collected, a measure obviously impracticable except on small watersheds, usually in a mountainous country and of small agricultural value. A considerable number of cities in the United States, notably New York and Boston, obtain their water supplies from protected watersheds either completely depopulated or thoroughly patroled to prevent contamination of the surface waters with human excreta. Even these cities, however, do not put their whole reliance in the efficiency of the measures taken to prevent pollution of their watersheds, but supplement this safeguard with more or less effective purification by long storage in impounding reservoirs. On a large, well-populated watershed, such as that of any considerable river, depopulation is, of course, out of the question. The first requisite for adequate protection of waters derived from such an area would be to divert from the drainage area or thoroughly purify the sewage from all sewered communities. The diversion of sewage is usually out of the question and the processes of sewage treatment which effectively prevent nuisance, though they reduce, by no means eliminate the danger of contamination with dangerous disease germs. Such purification of sewage as would render the effluent entirely harmless, though perhaps possible of achievement, could be accomplished only at a prohibitive cost; and even were this accomplished it would be still more difficult to enforce the measures necessary to prevent occasional slight but dangerous pollution from unsewered communities and country homes. The number of such sources to be controlled on a large, populous watershed is so great that to maintain adequate supervision over them amounts to an impossibility. Therefore, even with the most rigid supervision practicable, it would still be necessary to provide the additional safeguard of purification for water supplies taken from large streams; and, moreover, as most of our streams are more or less muddy, some treatment would be necessary to clarify their waters even though they were free from dangerous pollution.

Because of the manifold and obvious difficulties in the way of adequately safeguarding surface-water supplies by preventing their pollution, the sanitarians of the last 50 years, the period during which the importance of pure water supplies has been fully appreciated, have aimed, in the control of stream pollution, chiefly to prevent

nuisance, rather than to eliminate all danger of sewage-borne infectious diseases; and for the protection of water supplies from polluted sources have devoted their energies and ingenuity to devising means for purifying water at a moderate cost. The efforts put forth in this direction have been so eminently successful that now, by the application of modern, scientific methods, including storage, sedimentation, precipitation, filtration, and disinfection by the use of hypochlorite of lime, liquid chlorine, and other disinfectants, it is possible, at a moderate cost, to procure satisfactory, clean, and safe water supplies from dirty and dangerously polluted sources. The development of the science of water purification, and the enormous general improvement in the quality of public water supplies resulting from the application of scientific methods constitute perhaps the most important of all the great advances in the field of municipal sanitation during the last 25 years.

The first effective filter to be put into use in the United States was installed at Poughkeepsie, N. Y., about 1875. The development of water purification in the United States since that time has been rapid, especially during the latter part of the period, as may be illustrated by some statistics cited by Mr. George A. Johnson, who estimates that in 1900 somewhat less than 2,000,000 people in the United States were supplied with filtered water, while in 1911 the population supplied was approximately 8,000,000,[1] and is at present about 20,000,000.[2] A further illustration is afforded by statistics collected by the United States Public Health Service, covering practically all public water supplies in the Ohio Basin,[3] which is a fairly representative section of the United States.

According to these records, which embrace the water supplies of about 6,300,000 people, 64.5 per cent of this population were, in 1915, using water from surface sources. About 9 per cent were using water taken from more or less fully protected watersheds, stored in impounding reservoirs; but in many instances the protection thus afforded was considered inadequate, and more than half of such supplies were further safeguarded by filtration, disinfection, or both. Approximately 3,500,000, or 55.5 per cent of the total population included in these records, are now taking their water supplies from rivers. Ninety per cent of these 3,500,000 people are supplied with water more or less effectively purified by sedimentation, filtration, disinfection, or combinations of these processes, only 10 per cent using unpurified river waters. Practically all the water-purification plants represented have been installed within the last 25 years, the majority

[1] Johnson, George A., The Purification of Public Water Supplies, Water-Supply Paper No. 315, U. S. Geological Survey, Washington, 1913.

[2] Johnson, George A., The Typhoid Toll, Jour. Am. Waterwks. Assn., Vol. III, No. 2, June, 1916, p. 252.

[3] Unpublished data collected by survey and from records furnished by State health authorities.

within the last 10 years, during which period the three largest plants on the watershed, those of Cincinnati, Louisville, and Pittsburgh, have been put into operation.

Some idea of what the purification of these water supplies has effected in the conservation of life and health may be afforded by the following illustrative figures, taken somewhat at random from those cities on the Ohio watershed which, since 1906, have taken their water supplies from streams and for which mortality statistics covering this period are readily available.

Eleven of these cities, with a total population of 243,000 in 1914, were still, in that year, taking their water supplies from the same sources as in 1906, with no purification. The average typhoid-fever death rate per 100,000 in these cities was, in 1906, 76.8, and in 1914 approximately the same, 74.5. Sixteen other cities, including Pittsburgh, Cincinnati, and Louisville, having in 1914 a population of 1,866,000, were in that year taking their water supplies from the same sources as in 1906, but with more or less effective purification. The average typhoid-fever death rate in these cities in 1906 was 90.5 per 100,000, and in 1914, 15.3.

Had these cities in 1914 suffered the same typhoid death rate as in 1906, they would have registered 1,688 deaths from this cause instead of the 286 deaths actually recorded. Thus in a single and not unusual year there was an indicated saving of 1,400 lives, due to the reduction in deaths from typhoid fever alone. There is good reason to believe that the saving in non-fatal cases of typhoid fever amounted probably to not less than 14,000 to 15,000.

Equally striking reductions in the prevalence of this disease have followed immediately upon purification of the water supply in scores of other cities with such regularity as to justify the opinion that in the cities cited the reduction in typhoid fever from 1906 to 1914 must be attributed in large part to improvement in their water supplies.

It is not to be inferred that there has been a proportionate reduction in typhoid prevalence among all the 3,150,000 people on the Ohio watershed now using purified river water. In some communities the water supply before purification was not so grossly polluted and was consequently not so large a factor in the causation of typhoid fever, hence its purification has been followed by a slighter reduction in the total prevalence of this disease. In other instances the water supplies have been inadequately purified and are still doubtless responsible for a considerable amount of typhoid fever. Where this is the case the fault, whether it lie in the construction or, as is more usual, in the operation of the purification plants, may in almost all cases be remedied at relatively slight additional cost; and it may be said that there are no insuperable obstacles to prevent all the 3,150,000 people using purified surface waters from having water

supplies of as safe quality as those of the sixteen cities which have been cited in illustration.

To return to these cities, a point to be emphasized is that the improvement of their water supplies, with its consequent reduction in water-borne diseases, has been brought about almost wholly by *artificial purification*, not by radical improvements in their *sources of supply*. To be sure, such of these cities as were, in 1906, taking their water supplies from points below their own sewer outlets, have since removed their intakes upstream to avoid such immediate pollution. In general, however, the rivers from which these supplies are taken are more highly polluted now than ten years ago, owing to the growth of population, especially urban population, upon their watersheds.

In 1915 the urban population on the Ohio watershed amounted to 5,695,000, according to careful estimates. Of this, approximately 4,100,000, or 72 per cent, were sewered. During the decade from 1905 to 1915 the estimated increase in urban population was almost 29 per cent, and the percentage increase in sewered population was almost certainly greater. According to records compiled by the Public Health Service the sewage of about 457,000 people, or about 11 per cent of the sewered population on the watershed, was, in 1915, being treated in sewage-disposal plants, of which the majority have been constructed within the last decade. This progress in sewage treatment, though commendable, has very evidently not been sufficient to counterbalance the increase in sewage pollution due to growth of urban population and extension of sewerage. Considering that many of the smaller sewage-treatment plants on the watershed are inefficient, and that the better plants are not even designed completely to "purify" the sewage treated, it appears conservative to conclude that the sewage pollution of the Ohio River system is reduced not more than 5 per cent by the sewage-treatment plants now in operation, and that the net pollution from urban sewage is now nearly 25 per cent greater than it was 10 years ago.

In brief, during the last few decades the pollution of watercourses in the Ohio Basin, which is a fairly representative section of the United States, has been greatly increased by the growth of urban population and the extension of sewerage systems. To offset this increasing pollution, comparatively little progress has been made in the way of sewage purification, and what has been done has been almost exclusively for the prevention of nuisance. However, notwithstanding this increase in the pollution of streams which constitute the only available sources of water supply for 55 per cent of the urban population, the quality of public water supplies has, in general, been vastly improved, as the result of advances in the science of water purification and a more general application of modern methods.

This improvement in water supplies has resulted, in the Ohio Valley as elsewhere in the United States, in an enormous reduction in typhoid prevalence, and in the saving annually of thousands of lives. In other words, the most disastrous consequences of stream pollution have been largely prevented without improvement in the actual conditions of pollution.

Very evidently the maximum effects of water purification in minimizing the danger of stream pollution have not yet been attained. A small minority of the population of the Ohio watershed, as of other sections, are still using grossly unsafe, unpurified river water, but it is hardly to be imagined that the communities of which this is true will much longer endure the odium of such willful disregard of human life. A larger population are using water supplies more or less unsafe because of inadequate purification, but at the present rate of progress it may be confidently expected that the next few years will witness great improvements in these supplies, and on the whole the immediate future may be expected to show a continuation of the improvement in water supplies and the reduction in prevalence of water-borne diseases which have so distinguished the last few decades.

On the other hand, in the more or less distant future, there is imminent danger of a retrogression in quality of many water supplies with a recrudescence of water-borne diseases. The purification of a polluted water by even the most efficient of the methods applicable on a large scale is, after all, never perfect. A modern water-purification plant is a rather complex mechanism and its successful operation a matter of no little difficulty, requiring the constant supervision of a highly trained expert to adjust the mechanism of the plant to meet ever-changing conditions in the raw water. As in all such struggles of human ingenuity and diligence against the untiring forces of nature, lapses must occur. Increasing pollution of the water to be treated increases the difficulties of consistent adequate purification, increases the likelihood of occasional lapses, and magnifies the dangers of such lapses as do occur. With the rapid growth of urban population and development of sewerage the present tendency is toward an ever-increasing burden and responsibility upon the purification plants which safeguard the water supplies of millions. In the past this rapidly increasing pollution of sources of water supply has been successfully countered by even more rapid advances in efficiency and economy of water purification. Doubtless still further advances will be made in this direction, but probably not in such great strides as have already been made in the development, successively, of slow sand filtration, mechanical filtration, and disinfection processes. More likely the additional safeguard required will have to be provided, at least in part, by reducing the pollution of streams used as sources of water supply. The great present and future problem in

the control of stream pollution is, therefore, to determine when, where, and how measures should be taken to limit or reduce the pollution of streams, not merely to prevent nuisance, nor on the other hand to prevent all dangerous contamination, but to avoid overburdening purification plants.

The difficulties of the situation are many. The cost of such sewage treatment as may be necessary materially to reduce the sewage pollution of large streams is the first difficulty. The community bearing an expenditure for sewage treatment to protect the water supplies of other communities does not itself receive the dividends from the investment in better protection of its own citizens' health; and for this reason such expenditures are likely to be opposed unless clearly demonstrated to be necessary. But obviously a dire necessity can be demonstrated in a specific instance only after conditions have already become so bad and continued so long as to have caused more or less extensive disaster; and this, of course, must not be permitted. The measures taken must be anticipatory and preventive, not remedial and delayed until after extensive injury has been done. They must therefore be in a sense arbitrary, sufficiently radical to maintain a wide margin of safety, and not so radical as to involve enormous expenditures without justification.

These principles appear to be quite generally accepted, but as to the details of their actual application there is as yet no general agreement, chiefly because of a lack of requisite information. This deficiency may be sufficiently illustrated by the mention of only two of the many important respects in which essential knowledge is lacking.

It is known, for example, that sewage discharged into a stream becomes "purified" by natural agencies, and it is recognized as economically wise to take legitimate advantage of this natural capacity of streams for sewage purification. As yet, however, there is almost no definite information as to the extent of this purification under given conditions and its consistency under the changing conditions brought about by seasonal variations in the physical and biological characteristics of streams. Without such information it is impossible to estimate accurately the effect which the sewage of one city will have in polluting the source of water supply of some other city downstream, and therefore impossible to estimate how far conditions at the lower city would be improved by any given treatment of the sewage from the upper city. Until sufficiently broad and careful studies shall have determined the fundamental natural laws governing stream purification, each instance will require an exhaustive and laborious special study, as at present.

Again, there is insufficient information as to the extent of danger from a moderately polluted water supply, such as the effluent from

a slightly overburdened purification plant. The effect of a grossly polluted water supply in the causation of water-borne infectious diseases is readily demonstrable, because it has a predominant influence as the chief cause of such diseases in the community, but to distinguish the less striking effect of a slightly polluted water supply is a far more difficult matter, requiring more intensive studies than have yet been made. Yet even a very slight effect, if it exists, is serious, in view of the enormous population affected; and its demonstration is vital, as furnishing the evidence most essential to support arguments for more rigid protection of water supplies before they have become grossly polluted.

The first requisite in the control of stream pollution to-day is, therefore, a closer and broader study of the conditions of pollution existing in the rivers of the country, of the fundamental factors that influence these conditions, and, above all, of their effects upon health. Without such studies there can be no accurate knowledge as to the necessity for remedial measures and no reliable estimate of the influence of proposed measures in protecting the public health. In the meantime it is hardly to be expected that the public will be willing to invest enormous sums for the improvement of stream-pollution conditions without knowing what returns may be expected from their investment. It is not sufficient merely to state that there will be "some" returns in the saving of life and health; it is necessary to prove the assertion and, if possible, to show the extent of the saving in definite terms. The development of a universal sentiment in favor of water-purification plants must be credited chiefly to the definite proof of their efficiency in saving health and life. Similar proof will win equal approval for any further measures that may be required.

A great deal of diligent study has been and is being devoted to these problems, the existence and importance of which have long been recognized. As the need for further information becomes more urgent, these studies will naturally be intensified, and there need be no doubt that the problems will be solved and the difficulties overcome as successfully as other similar difficulties have been overcome in the past.

PLAGUE-PREVENTION WORK.

LOUISIANA—NEW ORLEANS—PLAGUE ERADICATION.

The following report of plague-eradication work at New Orleans for the week ended August 26, 1916, was received from Passed Asst. Surg. Simpson, of the United States Public Health Service, in charge of the work:

OUTGOING QUARANTINE.

Number of vessels fumigated with cyanide gas	15
Pounds of cyanide used in cyanide-gas fumigation	665
Pints of sulphuric acid used in cyanide-gas fumigation	1,443
Clean bills of health issued	29
Foul bills of health issued	4

FIELD OPERATIONS.

Number of rodents trapped	7,953
Number of premises inspected	7,022
Notices served	263
Number of garbage cans installed	27

BUILDINGS RAT PROOFED.

By elevation	96
By marginal concrete wall	130
By concrete floor and wall	138
By minor repairs	257
Total buildings rat proofed	621
Square yards of concrete laid	4,132
Number of premises, planking and shed-flooring removed	47
Number of buildings demolished	88
Total buildings rat proofed to date (abated)	124,252

LABORATORY OPERATIONS.

Rodents received by species:	
Mus rattus	129
Mus norvegicus	789
Mus alexandrinus	170
Mus musculus	6,329
Wood rats	60
Muskrats	14
Putrid	108
Total rodents received at laboratory	7,599
Rodents examined	1,368
Number of rats suspected of plague	[1] 33
Plague rats confirmed	4

PLAGUE RATS.

Case No. 321:
- Address, 601 South Pierce Street.
- Captured, July 18, 1916.
- Diagnosis confirmed, Aug. 22, 1916.
- Treatment of premises: Fumigation of building throughout. Completion of rat proofing.

Case No. 322:
- Address, 6300 St. Claude Avenue.
- Captured, July 13, 1916.
- Diagnosis confirmed, Aug. 23, 1916.
- Treatment of premises: Intensive trapping. Removal of rubbish and débris.

Case No. 323:
- Address, near intersection of Porter and Monroe Streets, Gretna, La.
- Captured, Aug. 5, 1916.
- Diagnosis confirmed, Aug. 23, 1916.
- Treatment of premises: Intensive trapping.

Case No. 321:
- Address, 4217 Annunciation Street.
- Captured, Aug. 7, 1916.
- Diagnosis confirmed, Aug. 21, 1916.
- Treatment of premises: Intensive trapping.

PLAGUE STATUS TO AUG. 26, 1916.

Last case of human plague, Sept. 8, 1915.	
Last case of rodent plague, Aug. 7, 1916.	
Total number of rodents captured to Aug. 26	818,086
Total number of rodents examined to Aug. 26	377,663
Total cases of rodent plague to Aug. 26, by species:	
Mus musculus	6
Mus rattus	20
Mus alexandrinus	16
Mus norvegicus	282
Total rodent cases to Aug. 26, 1916	324

WASHINGTON—SEATTLE—PLAGUE ERADICATION.

The following reports of plague-eradication work at Seattle were received from Surg. Lloyd, of the United States Public Health Service, in charge of the work:

[1] Indicates the number of rodents the tissues of which were inoculated into guinea pigs. Most of these showed on necropsy only evidence of recent inflammatory process; practically none presented gross lesions characteristic of plague infection.

WEEK ENDED AUG. 12, 1916.

RAT PROOFING.

New buildings inspected	11
New buildings reinspected	42
Basements concreted, new buildings (square feet, 6,602)	7
Floors concreted, new buildings (square feet, 35,701)	14
Yards, etc., concreted, new buildings (square feet, 1,250)	3
Sidewalks concreted (square feet)	9,750
Total concrete laid, new structures (square feet)	53,306
New buildings elevated	2
New premises rat proofed, concrete	21
Old buildings inspected	4
Premises rat proofed, concrete, old buildings	2
Floors concreted, old buildings (square feet, 2,775)	2
Premises otherwise rat proofed, old buildings	2
Openings screened, old buildings	14
Rat holes cemented, old buildings	25
Wooden floors removed, old buildings	2
Wire screening used (square feet)	750
Buildings razed	1

LABORATORY AND RODENT OPERATIONS.

Dead rats received	6
Rodents trapped and killed	365
Rodents recovered after fumigation	117
Total	488
Rodents examined for plague infection	376
Rodents proven plague infected	None.
Poison distributed (pounds)	17
Bodies examined for plague infection	4
Bodies found plague infected	None.

CLASSIFICATION OF RODENTS.

Mus rattus	42
Mus alexandrinus	220
Mus norvegicus	175
Mus musculus	51

WATER FRONT.

Vessels inspected and histories recorded	15
Vessels fumigated	2
Sulphur used, pounds	1,800
New rat guards installed	9
Defective rat guards repaired	26
Fumigation certificates issued	2
Port sanitary statements issued	38

The usual day and night patrol was maintained to enforce rat guarding and fending.

MISCELLANEOUS WORK.

Rat-proofing notices sent to contractors, new buildings	14
Letters sent in re rat complaints	4
Fishing vessels inspected—medicine chests	3

RODENTS EXAMINED IN EVERETT.

Mus norvegicus trapped	57
Mus norvegicus found dead	1
Mus musculus trapped	2
Total	60
Rodents examined for plague infection	49
Rodents proven plague infected	None.

RAT PROOFING OPERATIONS IN EVERETT.

New buildings inspected	1
New buildings reinspected	10
New buildings concrete foundations	1

RODENTS EXAMINED IN TACOMA.

Mus norvegicus trapped	105
Mus alexandrinus trapped	3
Total	108
Rodents examined for plague infection	108
Rodents proven plague infected	None.

WEEK ENDED AUG. 19, 1916.

RAT PROOFING.

New buildings inspected	3
New buildings reinspected	64
Basements concreted, new buildings (square feet, 22,250)	19
Floors concreted, new buildings (square feet, 58,475)	20
Yards, etc., concreted, new buildings (square feet, 1,130)	5
Sidewalks concreted (square feet)	11,280
Total concrete laid, new structures (square feet)	93,135
New buildings elevated	1
New premises rat proofed, concrete	39
Old buildings inspected	6
Premises rat proofed, concrete, old buildings	4
Floors concreted, old buildings (square feet, 6,725)	4
Premises otherwise rat proofed, old buildings	2

RAT PROOFING—continued.

Openings screened, old buildings	12
Rat holes cemented, old buildings	36
Wooden floors removed, old buildings	4
Wire screening used (square feet)	950
Buildings razed	1

LABORATORY AND RODENT OPERATIONS.

Dead rodents received	12
Rodents trapped and killed	409
Rodents recovered after fumigation	14
Total	435
Rodents examined for plague infection	335
Rodents proven plague infected	None.
Poison distributed, pounds	22
Bodies examined for plague infection	2
Bodies proven plague infected	None.

CLASSIFICATION OF RODENTS.

Mus ratus	19
Mus alexandrinus	134
Mus norvegicus	229
Mus musculus	53

WATER FRONT.

Vessels inspected and histories recorded	15
Vessels fumigated	3
Sulphur used, pounds	2,840
New rat guards installed	9
Defective rat guards repaired	17
Fumigation certificates issued	3
Port sanitary statements issued	40

The usual day and night patrol was maintained to enforce rat guarding and fending.

MISCELLANEOUS WORK.

Letters sent in re rat complaints	2
Restaurant permits visèd	8
Fishing vessels inspected, in re medicine chests	2

RODENTS EXAMINED IN EVERETT.

Mus norvegicus trapped	61
Mus musculus trapped	7
Total	71
Rodents examined for plague infection	60
Rodents proven plague infected	None.

RAT PROOFING OPERATIONS IN EVERETT.

New building inspected	1
New buildings reinspected	9
New buildings elevated	1
New building, basement concreted (square feet, 1,620)	1
Total concrete laid (square feet)	1,620

RODENTS EXAMINED IN TACOMA.

Mus norvegicus trapped	114
Rodents examined for plague infection	100
Rodents proven plague infected	None.

HAWAII—PLAGUE PREVENTION.

The following reports of plague-prevention work in Hawaii were received from Surg. Trotter, of the United States Public Health Service:

Honolulu.

WEEK ENDED AUG. 19, 1916.

Total rats and mongoose taken	317
Rats trapped	310
Mongoose trapped	7
Examined microscopically	258
Examined macroscopically	59
Showing plague infection	None.
Classification of rats trapped:	
Mus alexandrinus	134
Mus musculus	123
Classification of rats trapped—Continued.	
Mus norvegicus	32
Mus rattus	21
Average number of traps set daily	984
Cost per rat destroyed ..... cents	23¾
Last case rat plague, Aiea, 9 miles from Honolulu, Apr. 12, 1910.	
Last case human plague, Honolulu, July 12, 1910.	

Hilo.

WEEK ENDED AUG. 12, 1916.

Rats and mongoose taken	2,375
Rats trapped	2,341
Rats found dead	None.
Mongoose taken	34
Rats and mongoose examined macroscopically	2,375
Rats and mongoose plague infected	None.
Classification of rats trapped and found dead:	
Mus norvegicus	528
Mus alexandrinus	275
Classification of rats trapped and found dead—Continued.	
Mus rattus	559
Mus musculus	979
Last case of rat plague, Paauhau Sugar Co., Jan. 18, 1916.	
Last case of human plague, Paauhau Sugar Co., Dec. 16, 1915.	

PORTO RICO—PLAGUE PREVENTION.

The following table shows the number of rats and mice examined in Porto Rico for plague infection during the two weeks ended August 19, 1916. No plague infection was found.

Place.	Rats.	Mice.
San Juan	130	9
Santurce	105	12

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.

CEREBROSPINAL MENINGITIS.

City Reports for Week Ended Aug. 26, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Bridgeport, Conn	1	1	Detroit, Mich	1	.....
Buffalo, N. Y	.....	1	Dubuque, Iowa	1	1
Chicago, Ill	8	2	New York, N. Y	3	1
Cleveland, Ohio	1	1	Philadelphia, Pa	2	.....

DIPHTHERIA.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 2511.

ERYSIPELAS.

City Reports for Week Ended Aug. 26, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Ann Arbor, Mich	3	.....	Lexington, Ky	.....	1
Boston, Mass	.....	1	Los Angeles, Cal	1	.....
Brockton, Mass	1	.....	New York, N. Y	.....	2
Buffalo, N. Y	.....	1	Niagara Falls, N. Y	1	.....
Chicago, Ill	6	1	Philadelphia, Pa	.....	1
Cleveland, Ohio	2	.....	Pittsburgh, Pa	1	.....
Detroit, Mich	2	.....	Reading, Pa	1	.....
Harrisburg, Pa	1	.....	St. Paul, Minn	1	.....
Jackson, Mich	1	.....	San Francisco, Cal	4	1

LEPROSY.

City Reports for Week Ended August 26, 1916.

During the week ended August 26, 1916, there were reported, by cities, two cases of leprosy—one case at Galveston, Tex., and one case at Los Angeles, Cal.

MALARIA.

Arkansas Report for July, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Arkansas—Continued.	
Bradley County	7	Monroe County	9
Calhoun County	30	Newton County	6
Carroll County	1	Perry County	6
Clay County	2	Phillips County	117
Conway County	1	Pulaski County	5
Dallas County	12	Scott County	10
Faulkner County	13	Sevier County	120
Garland County	6	Sharp County	5
Greene County	10	St. Francis County	70
Hempstead County	30	Stone County	2
Hot Spring County	60	Union County	96
Izard County	61	Washington County	4
Jackson County	60	White County	10
Johnson County	10	Total	810
Lafayette County	40		
Lawrence County	7		

City Reports for Week Ended Aug. 26, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Birmingham, Ala		1	Los Angeles, Cal	1	
Cleveland, Ohio	1		Mobile, Ala		1
Cumberland, Md	1		New Orleans, La	6	1
Everett, Wash	1		Philadelphia, Pa	2	
Hartford, Conn	1		Richmond, Va	1	
Jersey City, N. J		1	Sacramento, Cal	4	
Little Rock, Ark	2		San Francisco, Cal	1	

MEASLES.

Washington.

Surg. Lloyd reported September 1 that during the week ended August 26, 1916, 9 cases of measles were reported in Seattle, Wash., making a total of 5,391 cases, with 9 deaths, since February 15, 1916.

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 2511.

PELLAGRA.

State Reports for July, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Arkansas—Continued.	
Bradley County	3	Union County	23
Faulkner County	2	White County	2
Garland County	2	Total	75
Greene County	4		
Hot Spring County	1		
Izard County	1	West Virginia:	
Jackson County	1	McDowell County	1
Monroe County	1	Mingo County	1
Phillips County	30	Total	2
Pulaski County	4		
St. Francis County	1		

PELLAGRA—Continued.

City Reports for Week Ended Aug. 26, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Birmingham, Ala.	1	1	Nashville, Tenn.	45	.....
Boston, Mass.	.....	1	New Orleans, La.	1	1
Charleston, S. C.	.....	1	Richmond, Va.	1	.....
Columbia, S. C.	.....	6	Springfield, Mass.	1	1
Galveston, Tex.	.....	1	Topeka, Kans.	1	.....
Mobile, Ala.	1	.....			

PLAGUE.

Louisiana—New Orleans—Plague-Infected Rats Found.

Passed Asst. Surg. Simpson reported that rats captured in New Orleans, La., have been proved positive for plague infection as follows: A rat captured August 2, 1916, at 309 South Johnson Street, was proved positive August 29. A rat trapped August 16, 1916, at 1231 St. Thomas Street, was proved positive September 4, 1916. A rat trapped July 18, 1916, at 1609 Dorgenois Street, was proved positive September 5, 1916. A rat trapped August 7, 1916, at 2329 Iberville Street, was proved positive September 5, 1916. A rat trapped August 8, 1916, at 1420 Music Street, was proved positive September 6, 1916. A rat trapped August 15, 1916, at the corner of Fig and Dublin Streets, was proved positive September 6, 1916.

PNEUMONIA.

City Reports for Week Ended Aug. 26, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Chicago, Ill.	76	25	Los Angeles, Cal.	2	4
Cleveland, Ohio	4	9	Manchester, N. H.	1	1
Detroit, Mich.	3	2	Philadelphia, Pa.	9	8
Fall River, Mass.	1	.....	Pittsburgh, Pa.	6	8
Flint, Mich.	1	.....	Reading, Pa.	2	1
Kansas City, Mo.	1	2	San Francisco, Cal.	1	5
Lancaster, Pa.	1	.....	Schenectady, N. Y.	2	.....
Lexington, Ky.	1	1	Stockton, Cal.	2	2

POLIOMYELITIS (INFANTILE PARALYSIS).

Arkansas.

August 31 the health officer of Little Rock, Ark., reported a case of poliomyelitis in a child, age 11 years, recently arrived from Stewartville, Minn.

Colorado.

The State health officer of Colorado reported that during the week ended September 2, 1916, two cases of poliomyelitis were reported to the State Board of Health of Colorado—one case in Weld County and one in Colorado City.

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

Connecticut.

Poliomyelitis cases reported in Connecticut during July and August, 1916, by weeks.

Week ended—	Cases reported.	Week ended—	Cases reported.
July 1	2	August 19	65
July 8	6	August 26	68
July 15	24	September 2	69
July 22	45	September 9	91
July 29	68		
August 5	69	Total	585
August 12	78		

Indiana.

The epidemiologist of the State Board of Health of Indiana reported that from July 1 to September 9, 1916, 72 cases of poliomyelitis were reported to the Indiana State board of health. Nine of these cases were reported during the week ended September 9, 1916.

Maryland.

Cases of poliomyelitis reported in Maryland, Aug. 1 to Sept. 11, 1916.

County.	Cases reported.		County.	Cases reported.	
	August.	Sept. 1 to 11.		August.	Sept. 1 to 11.
Allegany	.....	1	Howard	1	2
Anne Arundel	9	2	Montgomery	1	1
Baltimore	5	1	Prince Georges	4	.....
Carroll	1	1	Washington	2	.....
Charles	1	.....	Wicomico	2	.....
Dorchester	.....	1	Baltimore City	34	19
Garrett	2	1			
Harford	2	.....	Total	64	29

Baltimore.—Surgeon Vogel reported that during the week ended September 9, 1916, 12 cases of poliomyelitis, with 9 deaths, were notified in Baltimore. On September 13 he reported 5 new cases of poliomyelitis with 1 death.

Minnesota.

Collaborating Epidemiologist Bracken reported September 10 that during the week ended September 9, 1916, 54 cases of poliomyelitis, with 4 deaths, were reported to the Minnesota State Board of Health. The total since January 1, 1916, is 581 cases with 53 deaths.

Montana.

The State health officer of Montana reported September 12: Two cases of poliomyelitis at Wolf Point, Sheridan County, Mont.; 1 case at Laurel; and 6 cases at Billings, Mont.

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

New Jersey.

The State health officer of New Jersey reported that from September 6 to 14, 1916, inclusive, 352 cases of poliomyelitis were reported to the New Jersey State board of health. The total cases notified in the State of New Jersey since June 30, 1916, is 3,230.

New York.

Cases of poliomyelitis reported to the New York State department of health, Aug. 1 to Sept. 9, 1916, inclusive (not including New York City).

Place.	Cases.	Place.	Cases.
Colchester, Delaware County	8	Nassau County	297
Poughkeepsie city	48	Suffolk County	294
Fishkill Township	8	Sullivan County	64
Hyde Park	8	Ulster County	52
Windham	9	Westchester County	295
Orleans, Jefferson County	5	Peekskill	6
Sullivan Township	6	White Plains	22
Oneida city	11	Mount Vernon	24
Utica city	24	New Rochelle	70
Syracuse city	119	Ossining	7
Skaneateles village	7	Port Chester	20
Fayetteville	7	Yonkers	38
Walden village	13	Bedford	6
Oswego city	12	Mamaroneck	14
Fulton city	5	North Tarrytown	24
Gouverneur village	14	Pleasantville	9
Ithaca city	12		
Campbell	8	Total	1,566

New York City.—Surg. Lavinder reported September 7: New cases poliomyelitis, 61; deaths, 28. September 8: New cases, 48; deaths, 15. September 9: New cases, 55; deaths, 10. September 10 and 11: New cases, 66; deaths, 23. September 12: New cases, 38; deaths, 18. September 13: New cases, 31; deaths, 9. September 14: New cases, 36; deaths, 11. Approximate corrected totals: Cases, 8,650; deaths, 2,162.

Ohio.

Cincinnati.—Asst. Surg. Bolten reported that during the two weeks ended September 9, 1916, 9 cases of poliomyelitis were notified in Cincinnati, Ohio, making a total of 25 cases with 3 deaths since July 12.

Oregon.

Surg. Magruder reported September 9 that a case of poliomyelitis had been notified in Portland, Oreg.

Pennsylvania.

Pittsburgh.—Surg. Schereschewsky reported that during the two weeks ended September 9, 1916, 8 cases of poliomyelitis were reported to the health department of the city of Pittsburgh, Pa. The total number of cases since July 1, 1916, is 21 with 5 deaths.

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

Rhode Island.

Passed Asst. Surg. Marshall reported September 6 that during the week ended September 2, 1916, 14 cases of poliomyelitis were notified in Rhode Island as follows: Providence, 10 cases; Newport, 1; East Providence, 1; Bristol, 2.

On September 11 he reported that during the week ended September 9, 1916, 11 new cases of poliomyelitis were notified as follows: Providence, 3 cases; Bristol, 4; Lincoln, 2; Warren, 1; Portsmouth, 1.

The total number of cases of poliomyelitis reported in Rhode Island since July 22, 1916, is 101.

Texas.

El Paso.—Acting Asst. Surg. Tappan reported that during the week ended September 9 two cases of poliomyelitis were notified in El Paso, Tex., and that since August 1 six cases had been notified in El Paso, Tex. Juarez, Mexico, has quarantined against El Paso for poliomyelitis. No children under 16 years of age are allowed to cross the international bridge going into Mexico.

Vermont.

The State health officer of Vermont reported that during the month of August, 1916, eight cases of poliomyelitis were reported to the Vermont State board of health.

Washington.

Collaborating Epidemiologist Tuttle reported that during the week ended September 2, 1916, two cases of poliomyelitis were reported in the State of Washington; one in King County and one in Clallam County.

Surg. Lloyd reported September 7 that two cases of poliomyelitis had been notified in Seattle, Wash. One case was in a Japanese alien who landed undetected August 31, after two weeks' illness.

West Virginia.

The State health commissioner of West Virginia on September 6, 1916, reported a case of poliomyelitis at Wheeling, W. Va., in a child 13 years old, recently arrived from Glencoe, Belmont County, Ohio.

The assistant commissioner of health of West Virginia reported that during the week ended September 9, 1916, five cases of poliomyelitis were reported to the State department of health of West Virginia.

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

Arkansas Report for July, 1916.

During the month of July, 1916, there were five cases of poliomyelitis (infantile paralysis) reported in Arkansas; three cases in Little River County, one case in Scott County, and one case in White County, Ark.

City Reports.

Place.	Week ended Aug. 26, 1916.		Aug. 27 to—	Cases.	Deaths.
	Cases.	Deaths.			
Akron, Ohio	1		Sept. 2	3	
Atlantic City, N. J	5		Sept. 9	10	
Auburn, N. Y	2		Sept. 2	1	1
Baltimore, Md	9	3	Sept. 9	28	12
Bayonne, N. J	4		do	6	
Binghamton, N. Y			Sept. 2	1	
Birmingham, Ala	2				
Boston, Mass	8	6	Sept. 2	13	7
Bridgeport, Conn	3	2	do	3	
Brookline, Mass			Sept. 9	1	
Buffalo, N. Y	1	1	Sept. 2	1	
Butler, Pa	1	1	Sept. 9		
Cambridge, Mass	2		do	3	
Camden, N. J	6		do	14	
Chelsea, Mass			do	1	1
Chicago, Ill	22	5	do	49	10
Chicopee, Mass			do	1	
Cincinnati, Ohio	5	1	do	5	
Cleveland, Ohio	2		do	7	
Covington, Ky	1		do	1	
Cumberland, Md			do	1	
Detroit, Mich	6		do	5	1
East Orange, N. J	10		do	16	1
Fall River, Mass			do	1	
Fitchburg, Mass			Sept. 2	1	
Flint, Mich	8	2			
Grand Rapids, Mich	1		Sept. 9	3	
Harrisburg, Pa	1		do		
Harrison, N. J	6	2			
Hartford, Conn	4				
Haverhill, Mass	5	1	Sept. 9		1
Jackson, Mich	1				
Jersey City, N. J	16	3	Sept. 9	31	3
Johnstown, Pa	1		Sept. 2		
Kalamazoo, Mich	1		do		
Kansas City, Kans			do	1	
Kearny, N. J	5	1			
Kenosha, Wis			Sept. 2	2	1
La Crosse, Wis			do	2	
Lancaster, Pa			Sept. 9	4	
Little Rock, Ark			do	1	
Long Branch, N. J	2		Sept. 2	8	
Lowell, Mass	1		Sept. 9	2	1
Lynchburg, Va			do	4	1
Lynn, Mass	1	1	Sept. 2	2	
Manchester, N. H			Sept. 9	8	3
Medford, Mass	2	1	do	4	
Memphis, Tenn			Sept. 2	2	
Minneapolis, Minn	14		do	12	
Mobile, Ala	1		Sept. 9	2	
Montclair, N. J	2		Sept. 2	1	
Morristown, N. J	1		do	1	
Nanticoke, Pa	1		Sept. 9		
New Bedford, Mass	1		do	2	1
New Britain, Conn	1		do	3	
Newburyport, Mass	1	1	do	7	2
New Orleans, La	2		do		
Newport, R. I			Sept. 2	1	1
New York, N. Y	707	209	Sept. 11	964	342
Norristown, Pa	4		Sept. 9	2	
North Adams, Mass	5	1	do	4	2
Northampton, Mass	2	1	do	2	1
Orange, N. J	10		Sept. 2	15	3
Passaic, N. J	3	1	do		

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

City Reports—Continued.

Place.	Week ended Aug. 26, 1916.		Aug. 27 to—	Cases.	Deaths.
	Cases.	Deaths.			
Perth Amboy, N. J.	3		Sept. 9	4	
Philadelphia, Pa.	132	39	do	245	82
Pittsburgh, Pa.	3		Sept. 2	5	2
Pittsfield, Mass.	7	1	Sept. 9	12	2
Plainfield, N. J.	10	2	do	7	
Providence, R. I.	2	1	do	17	2
Quincy, Ill.			Sept. 2	1	
Reading, Pa.			Sept. 9	1	
Richmond, Va.			Sept. 2	2	1
Rock Island, Ill.	1				
Rutland, Vt.			Sept. 9	1	
Saginaw, Mich.	1	1	do	6	
St. Louis, Mo.	5	1	Sept. 2	2	
St. Paul, Minn.	6		do	8	2
Salt Lake City, Utah	1		Sept. 9	1	
San Francisco, Cal.			Sept. 2	2	1
Schenectady, N. Y.	1		do		
Sioux City, Iowa			do	1	
Somerville, Mass.	1		Sept. 9	3	
Springfield, Ill.	1		do		
Springfield, Mass.	5		do	14	4
Syracuse, N. Y.	34	8	Sept. 2	33	14
Taunton, Mass.	1		Sept. 9	1	
Toledo, Ohio.	10	3	do	18	4
Trenton, N. J.	11	3	do	18	9
Troy, N. Y.	1		Sept. 2	3	2
Washington, D. C.	7		Sept. 13	6	1
Watertown, N. Y.			Sept. 2	1	1
West Hoboken, N. J.	7	2	do		1
Wichita, Kans.			Sept. 9	1	
Wilkes-Barre, Pa.	1		do	1	
Williamsport, Pa.	1		do	1	
Wilmington, Del.	3	1	do	6	3
Wilmington, N. C.			Sept. 2	1	
Worcester, Mass.			Sept. 9	5	
York, Pa.			do	1	

RABIES IN MAN.

City Reports for Week Ended August 26, 1916.

During the week ended August 26, 1916, there were reported, by cities, one fatal case of rabies in man at Ann Arbor, Mich., and one fatal case of rabies in man at Pittsburgh, Pa.

RABIES IN ANIMALS.

Washington—Seattle.

Surg. Lloyd reported that during the month of August, 1916, 4 cases of rabies in dogs were reported in Seattle, Wash. This makes a total of 487 cases in dogs, 8 in cattle, 4 in cats, 2 in horses, and 1 in a hog since the appearance of the disease in Seattle, September 10, 1913.

City Reports for Week Ended August 26, 1916.

During the week ended August 26, 1916, there were reported, by cities, one case of rabies in animals at Detroit, Mich., one case at Niagara Falls, N. Y., and one case at Toledo, Ohio.

ROCKY MOUNTAIN SPOTTED FEVER.

Washington—Tacoma.

Collaborating Epidemiologist Tuttle reported September 13 that a case of Rocky Mountain spotted fever had been notified at Tacoma, Wash.

Oregon Report for June, 1916.

During the month of June, 1916, four cases of Rocky Mountain spotted fever were reported in Oregon; three cases in Grant County, and one case in Jefferson County, Oreg.

SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 2511.

SMALLPOX.

Miscellaneous State Reports.

Place.	Cases.	Deaths.
Arkansas (July 1-31):		
Counties—		
Faulkner	1	.....
Hempstead	5	.....
Jackson	3	.....
Lafayette	1	.....
Lawrence	1	.....
Phillips	3	.....
Pulaski	3	.....
Sevier	7	.....
Union	5	.....
Total	29	.....
Colorado (July 1-31):		
Counties—		
Douglas	8	.....
Jefferson	1	.....
Lincoln	20	.....
Prowers	1	.....
Total	30	.....
Oregon (June 1-30):		
Grant County	1	.....
Multnomah County	1	.....
Portland	1	.....
Total	3	.....
West Virginia (July 1-31):		
Counties—		
Monongalia	3	.....
Taylor	1	.....
Wayne	1	.....
Total	5	.....

City Reports for Week Ended Aug. 26, 1916.

Place.	Cases.	Deaths.
Duluth, Minn	1	.....
Evansville, Ind	1	.....
Lincoln, Nebr	4	.....
New Orleans, La	1	.....
Portland, Oreg	5	.....
Superior, Wis	1	.....

TETANUS.

City Reports for Week Ended Aug. 26, 1916.

Place.	Cases.	Deaths.
Boston, Mass	.....	1
Cleveland, Ohio	2	1
Mobile, Ala	.....	1
New York, N. Y	.....	1
Quincy, Ill	.....	1
Richmond, Va	.....	1
Toledo, Ohio	.....	1

TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 2511.

TYPHOID FEVER.

State Reports for July, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		West Virginia:	
Bradley County	2	Berkeley County	5
Calhoun County	4	Clay County	1
Carroll County	7	Greenbrier County	5
Clay County	2	Hampshire County	3
Dallas County	1	Hancock County	1
Drew County	3	Harrison County	4
Faulkner County	10	Kanawha County	10
Garland County	2	Lincoln County	2
Greene County	2	McDowell County	1
Hempstead County	1	Marshall County	3
Hot Spring County	13	Marion County	9
Izard County	12	Mercer County	11
Jackson County	1	Mineral County	7
Johnson County	5	Monongalia County	2
Lawrence County	5	Monroe County	11
Newton County	2	Nicholas County	3
Perry County	1	Pendleton County	1
Phillips County	9	Putnam County	3
Pulaski County	10	Raleigh County	18
Sevier County	10	Randolph County	1
St. Francis County	4	Taylor County	3
Stone County	1	Tyler County	22
Union County	4	Wood County	7
Washington County	10		
White County	4	Total	133
Total	125		

Oregon Report for June, 1916.

Place.	New cases reported.	Place.	New cases reported.
Oregon:		Oregon—Continued.	
Coos County	1	Umatilla County	3
Marion County	2		
Multnomah County—		Total	7
Portland	1		

City Reports for Week Ended Aug. 26, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Akron, Ohio	2	.....	Chelsea, Mass	.....	3
Albany, N. Y.	4	.....	Chicago, Ill.	41	5
Ann Arbor, Mich.	20	2	Cleveland, Ohio	15	1
Atlantic City, N. J.	3	.....	Coffeyville, Kans.	4	.....
Baltimore, Md.	38	2	Columbia, S. C.	5	1
Beaver Falls, Pa.	1	.....	Columbus, Ohio	4	.....
Berkeley, Cal.	1	.....	Covington, Ky.	.....	1
Birmingham, Ala.	18	4	Cumberland, Md.	1	.....
Boston, Mass.	5	.....	Danville, Ill.	3	.....
Braddock, Pa.	2	.....	Denver, Colo.	13	.....
Bridgeport, Conn.	2	.....	Detroit, Mich.	12	1
Brockton, Mass.	1	.....	Duluth, Minn.	2	.....
Buffalo, N. Y.	8	1	Elgin, Ill.	35	1
Butler, Pa.	.....	1	El Paso, Tex.	1	.....
Cambridge, Mass.	1	.....	Evansville, Ind.	16	2
Camden, N. J.	6	.....	Everett, Wash.	1	.....
Canton, Ohio	1	.....	Fall River, Mass.	9	2
Charleston, S. C.	8	1	Flint, Mich.	9	.....
Chattanooga, Tenn.	2	1	Fort Worth, Tex.	10	.....

TYPHOID FEVER—Continued.

City Reports for Week Ended Aug. 26, 1916—Continued.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Galveston, Tex	2	1	Philadelphia, Pa	25	4
Grand Rapids, Mich	2	.....	Pittsburgh, Pa	5	.....
Hamilton, Ohio	10	.....	Pittsfield, Mass	1	.....
Harrisburg, Pa	16	1	Portland, Me	7	.....
Hartford, Conn	4	.....	Portsmouth, N. H	1	.....
Hoboken, N. J	1	.....	Portsmouth, Va	6	1
Indianapolis, Ind	134	.....	Providence, R. I	8	1
Jackson, Mich	1	.....	Quincy, Ill	.....	1
Jersey City, N. J	6	1	Reading, Pa	5	.....
Johnstown, Pa	4	.....	Richmond, Va	14	5
Kalamazoo, Mich	.....	1	Roanoke, Va	7	.....
Kansas City, Mo	10	2	Rochester, N. Y	3	.....
Kenosha, Wis	1	1	Rock Island, Ill	1	.....
Knoxville, Tenn	1	.....	Sacramento, Cal	1	1
Kokomo, Ind	1	.....	Saginaw, Mich	1	1
Lancaster, Pa	3	.....	St. Joseph, Mo	2	.....
Lawrence, Mass	2	.....	St. Louis, Mo	24	5
Lexington, Ky	1	1	St. Paul, Minn	3	1
Little Rock, Ark	2	.....	San Francisco, Cal	4	.....
Lorain, Ohio	2	.....	Schenectady, N. Y	1	.....
Los Angeles, Cal	4	.....	Seattle, Wash	.....	1
Lowell, Mass	4	.....	South Bend, Ind	4	.....
Lynchburg, Va	6	.....	Springfield, Ill	1	.....
Lynn, Mass	8	.....	Springfield, Mass	3	.....
Milwaukee, Wis	7	.....	Springfield, Ohio	9	.....
Minneapolis, Minn	4	.....	Tacoma, Wash	1	.....
Mobile, Ala	3	.....	Toledo, Ohio	17	1
Morristown, N. J	1	.....	Topeka, Kans	2	.....
Nashville, Tenn	18	.....	Trenton, N. J	3	.....
New Bedford, Mass	1	.....	Troy, N. Y	2	.....
New Haven, Conn	3	.....	Washington, D. C	14	1
New London, Conn	1	.....	Watertown, N. Y	5	.....
New Orleans, La	8	4	Wichita, Kans	7	.....
Newton, Mass	1	.....	Wilkes-Barre, Pa	1	.....
New York, N. Y	81	3	Wilkinsburg, Pa	1	.....
Niagara Falls, N. Y	2	1	Wilmington, Del	1	.....
Norristown, Pa	4	.....	Worcester, Mass	2	.....
North Adams, Mass	2	.....	Zanesville, Ohio	2	1
Northampton, Mass	1	.....			

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for July, 1916.

During the month of July, 1916, 20 cases of diphtheria, 15 cases of measles, and 10 cases of scarlet fever were reported in Arkansas; and 30 cases of diphtheria, 373 cases of measles, and 24 cases of scarlet fever were reported in West Virginia.

Oregon Report for June, 1916.

During the month of June, 1916, 6 cases of diphtheria, 146 cases of measles, and 60 cases of scarlet fever were reported in Oregon.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended Aug. 26, 1916.

City.	Population as of July 1, 1915 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md	584,605	209	11	1	10	.....	4	.....	18	31
Boston, Mass	745,139	238	42	.....	27	3	17	.....	47	28
Chicago, Ill	2,447,045	704	69	11	25	.....	27	1	265	63
Cleveland, Ohio	656,975	205	25	1	4	1	4	.....	44	18
Detroit, Mich	554,717	210	57	3	1	1	12	.....	44	19
New York, N. Y	5,468,190	1,513	118	4	51	2	10	.....	393	150
Philadelphia, Pa	1,683,664	587	39	5	34	.....	7	.....	127	79
Pittsburgh, Pa	571,984	173	23	4	23	1	4	.....	17	13
St. Louis, Mo	745,988	176	28	.....	3	.....	7	.....	37	14
From 300,000 to 500,000 inhabitants:										
Buffalo, N. Y	461,335	100	8	.....	1	.....	1	.....	31	10
Cincinnati, Ohio	406,706	118	19	1	.....	1	10	.....	23	15
Jersey City, N. J	300,133	95	13	2	.....	.....	1	.....	19	5
Los Angeles, Cal	465,367	107	8	1	5	.....	1	.....	54	12
Milwaukee, Wis	428,062	103	2	.....	1	.....	6	.....	14	2
Minneapolis, Minn	353,460	.....	3	.....	.....	.....	3	.....	.....	.....
New Orleans, La	366,484	130	8	.....	19	.....	.....	.....	27	21
San Francisco, Cal	[1] 416,912	111	23	1	2	.....	6	.....	62	17
Seattle, Wash	330,834	52	2	.....	9	.....	2	.....	15	4
Washington, D. C	358,679	104	3	.....	7	.....	5	.....	28	13
From 200,000 to 300,000 inhabitants:										
Columbus, Ohio	209,722	.....	1	.....	1	.....	4	.....	10	7
Denver, Colo	253,161	.....	2	.....	2	.....	1	.....	.....	.....
Indianapolis, Ind	265,578	.....	3	.....	1	.....	3	.....	12	.....
Kansas City, Mo	289,879	57	5	.....	2	.....	2	.....	8	5
Portland, Oreg	272,833	46	1	.....	2	.....	.....	.....	2	3
Providence, R. I	250,025	70	4	1	3	.....	3	.....	.....	12
Rochester, N. Y	250,747	81	2	.....	2	1	.....	.....	9	7
St. Paul, Minn	241,999	25	8	.....	4	.....	1	.....	17	.....
From 100,000 to 200,000 inhabitants:										
Albany, N. Y	103,580	.....	2	.....	.....	.....	1	.....	12	.....
Birmingham, Ala	174,108	44	2	.....	1	.....	4	.....	5	6
Bridgeport, Conn	118,434	41	1	.....	1	.....	.....	.....	.....	2
Cambridge, Mass	111,669	30	3	.....	5	.....	1	.....	8	3
Camden, N. J	104,349	.....	2	.....	.....	.....	2	.....	7	.....
Fall River, Mass	126,904	.....	3	.....	1	.....	1	.....	6	3
Grand Rapids, Mich	125,759	29	2	.....	.....	.....	1	.....	7	1
Hartford, Conn	108,969	.....	4	.....	1	.....	.....	.....	8	1
Lowell, Mass	112,124	34	6	2	15	.....	.....	1	1	2
Lynn, Mass	100,316	19	2	.....	.....	.....	2	.....	1	1
Nashville, Tenn	115,978	32	5	.....	7	.....	2	.....	7	4
New Bedford, Mass	114,694	.....	.....	.....	7	.....	1	.....	5	3
New Haven, Conn	147,095	.....	.....	.....	1	1	2	.....	12	3
Omaha, Nebr	135,455	40	.....	.....	.....	.....	.....	.....	3	.....
Reading, Pa	105,094	40	.....	.....	.....	.....	2	.....	2	2
Richmond, Va	154,674	51	3	.....	.....	.....	4	.....	10	5
Salt Lake City, Utah	113,567	17	3	.....	9	.....	8	.....	.....	2
Springfield, Mass	103,216	25	.....	.....	1	.....	.....	.....	6	.....
Syracuse, N. Y	152,534	61	3	.....	2	.....	.....	.....	12	2
Tacoma, Wash	108,094	10	1	.....	8	.....	.....	.....	.....	.....
Toledo, Ohio	187,840	70	4	1	1	.....	6	.....	.....	9
Trenton, N. J	109,212	47	3	1	.....	.....	.....	.....	3	1
Worcester, Mass	160,523	45	8	.....	1	.....	3	.....	6	4
From 50,000 to 100,000 inhabitants:										
Akron, Ohio	82,958	.....	17	.....	1	.....	3	.....	5	.....
Atlantic City, N. J	55,806	.....	1	.....	1	.....	.....	.....	2	.....
Bayonne, N. J	67,582	.....	2	.....	.....	.....	.....	.....	2	.....
Berkeley, Cal	54,879	5	.....	.....	.....	.....	2	.....	.....	.....
Binghamton, N. Y	53,082	23	5	.....	.....	.....	.....	.....	.....	1
Brockton, Mass	65,746	11	.....	.....	1	.....	1	.....	.....	.....
Canton, Ohio	59,139	11	1	.....	1	.....	3	.....	2	2
Charleston, S. C	60,427	32	1	.....	.....	.....	1	.....	.....	5
Chattanooga, Tenn	58,576	10	1	.....	.....	.....	2	.....	2	.....
Covington, Ky	56,520	15	2	.....	.....	.....	.....	.....	.....	.....
Duluth, Minn	91,913	.....	1	.....	.....	.....	1	.....	3	.....
El Paso, Tex	51,936	29	1	.....	3	.....	.....	.....	.....	4

[1] Population Apr. 15, 1910; no estimate made.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended Aug. 26, 1916—Continued.

City.	Population as of July 1, 1915 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabitants—Continued.										
Evansville, Ind	72,125	16	1				1		2	2
Flint, Mich	52,159	20	1						2	
Fort Worth, Tex	99,528	18	1							4
Harrisburg, Pa	70,754	27								2
Hoboken, N. J	76,105	11	1						1	2
Johnstown, Pa	66,585		1				1			1
Lancaster, Pa	50,269		2						1	
Lawrence, Mass	98,197	41	2	1			1		1	1
Little Rock, Ark	55,158	18							1	
Malden, Mass	50,067	8	1		3		1		3	1
Manchester, N. H	76,959	31	1	1					1	1
Mobile, Ala	56,536	23							3	
New Britain, Conn	52,203	1	1		1		1			
Oklahoma, Okla	88,158	11			1		2			
Passaic, N. J	69,010	18	1						1	1
Pawtucket, R. I	58,156	14	2	1			1			1
Portland, Me	63,014	16	2		1		1			1
Rockford, Ill	53,761	10								
Sacramento, Cal	64,806	27		1						2
Saginaw, Mich	54,815	20					5			
St. Joseph, Mo	83,974	23					2		1	2
San Diego, Cal	51,115	25	3	1	1					2
Schenectady, N. Y	95,265	23	3				1		3	
Sioux City, Iowa	55,588		1							
Somerville, Mass	85,460	23	1		2				3	5
South Bend, Ind	67,030	19	3					1		1
Springfield, Ill	59,468	12					2			1
Springfield, Ohio	50,804	17					1		2	1
Troy, N. Y	77,738		1		3		2			2
Wichita, Kans	67,847		1				1		3	
Wilkes-Barre, Pa	75,218	11	3						5	
Wilmington, Del	93,161	33	2	1	1		1			
York, Pa	50,543								2	
From 25,000 to 50,000 inhabitants:										
Alameda, Cal	27,031	5			1					1
Auburn, N. Y	36,947	8	2							
Brookline, Mass	31,934	4							1	
Butler, Pa	26,587	6	2							
Butte, Mont	42,918	23							3	3
Chelsea, Mass	[1] 32,452	13	1						1	1
Chicopee, Mass	28,088	7					1		1	2
Columbia, S. C	34,058	21	1						2	
Cumberland, Md	25,564	9								1
Danville, Ill	31,554	14	1				1		1	1
East Orange, N. J	41,155	5			1				2	
Elgin, Ill	27,844	4								1
Everett, Mass	38,307		1						2	1
Everett, Wash	33,767	8			1				8	
Fitchburg, Mass	41,144	10	5		2				3	
Galveston, Tex	41,076	8							1	
Hamilton, Ohio	39,655	10							2	
Haverhill, Mass	47,774	17	1							1
Jackson, Mich	34,730	11					2			
Kalamazoo, Mich	47,364	16			1				1	2
Kenosha, Wis	30,319	5	1							
Knoxville, Tenn	38,300				3				2	
La Crosse, Wis	31,522	9	1							2
Lexington, Ky	39,703	18	8				1		7	1
Lincoln, Nebr	46,028	15								
Lorain, Ohio	35,662						4			
Lynchburg, Va	32,385	13					1			
Madison, Wis	30,084		1							
Medford, Mass	25,737								2	
Montclair, N. J	25,550	1								
New Castle, Pa	40,351						1			
Newport, R. I	29,631	5								
Newton, Mass	43,085	8			2				1	1
Niagara Falls, N. Y	36,240	16	2	2					1	1

[1] Population Apr. 15, 1910; no estimate made.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Contd.

City Reports for Week Ended Aug. 26, 1916—Continued.

City.	Population as of July 1, 1915 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 25,000 to 50,000 inhabitants—Continued.										
Norristown, Pa.	30,833	9								3
Ogden, Utah	30,466	1	2		3					
Orange, N. J.	32,524	13	2							2
Pasadena, Cal.	43,859	8			1				2	1
Perth Amboy, N. J.	39,725		2						4	
Pittsfield, Mass.	37,580	13								
Portsmouth, Va.	38,610	7								
Quincy, Ill.	36,764	12								1
Roanoke, Va.	41,929	15	3	1	1					3
Rock Island, Ill.	27,961	6	1							1
San Jose, Cal.	37,994	9	1							
Steubenville, Ohio	26,631	11								
Stockton, Cal.	34,508	13	1							1
Superior, Wis.	45,285	7								2
Taunton, Mass.	35,957	11							2	
Topeka, Kans.	47,914	5					1		1	
Waltham, Mass.	30,129	4	3				1			
Watertown, N. Y.	29,384		2						1	2
West Hoboken, N. J.	41,893		1						3	1
Wheeling, W. Va.	43,097	14	3							
Williamsport, Pa.	33,495		2		1				7	
Zanesville, Ohio	30,406	12								1
From 10,000 to 25,000 inhabitants:										
Ann Arbor, Mich.	14,979	8								
Braddock, Pa.	21,310	9								2
Cairo, Ill.	15,593	3								1
Clinton, Mass.	[1] 13,075	3					1		1	
Concord, N. H.	22,480	9								
Galesburg, Ill.	23,923	4			1					
Kokomo, Ind.	20,312	3	1		1					
Long Branch, N. J.	15,057	3	1							1
Melrose, Mass.	17,166	4							1	2
Morristown, N. J.	13,158	3								
Nanticoke, Pa.	22,441	5								
Newburyport, Mass.	15,195	7							1	
New London, Conn.	20,771	4								
North Adams, Mass.	[1] 22,019	12			7		1		2	1
Northampton, Mass.	19,846	8			2				4	1
Plainfield, N. J.	23,280	9								
Portsmouth, N. H.	11,602		1		2					
Rutland, Vt.	14,624	2					1			
Sandusky, Ohio	20,160				2				1	
Saratoga Springs, N. Y.	12,842	9								1
Steelton, Pa.	15,337	6							2	
Wilkinsburg, Pa.	22,361	2								

[1] Population Apr. 15, 1910; no estimate made.

FOREIGN.

CHINA.

Examination of Rats—Shanghai.

During the two weeks ended August 5, 1916, 291 rats were examined at Shanghai. No plague infection was found.

The last plague-infected rat found at Shanghai was reported found during the week ended May 6, 1916.

Plague-Infected Rats Found—Hongkong.

During the two weeks ended July 29, 1916, out of 4,064 rats examined at Hongkong, 1 rat, examined during the week ended July 22, was found plague infected.

CURACAO.

Quarantine Against Porto Rico Removed.

The quarantine measures imposed at Curacao against passengers and crews of vessels arriving from Porto Rico[1] were reported removed August 29, 1916.

GREAT BRITAIN.

Examination of Rats—Liverpool.

During the two weeks ended July 29, 1916, 246 rats were examined at Liverpool. No plague infection was found.

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

Reports Received During Week Ended Sept. 15, 1916.[2]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	July 16-22	20	14	
Calcutta	July 9-15		9	
Madras	July 9-22	4	3	
Java				East Java, June 2-16, 1916: Cases, 14; deaths, 9.
Do				Mid-Java, June 3-9, 1916: 1 case, 1 death.
Do				West Java, June 2-22, 1916: Cases, 258; deaths, 183.
Batavia	June 2-22	34	23	

[1] Public Health Reports, Sept. 1, 1916, p. 2367.

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

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

Reports Received During Week Ended Sept. 15, 1916—Continued.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands—				
Manila	July 16-29	41	19	
Provinces—				
Albay	July 16-Aug. 5	84	37	
Bataan	do	2		
Batangas	July 30-Aug. 5	5	5	
Bulacan	July 16-Aug. 5	289	98	
Camarines	do	476	313	
Cavite	do	7	5	
Laguna	do	73	49	
Mindanao	do	19	11	
Misamis	do	82	41	
Pampanga	do	54	47	
Rizal	do	51	28	
Romblon	July 16-29	3	3	
Turkey in Asia:				
Jaffa	June 19-25		12	

PLAGUE.

China:				
Amoy	July 16-29			Many fatal cases in vicinity.
Hongkong	July 23-29	1	1	
Egypt				Jan. 1-Aug. 10, 1916: Cases, 1,687; deaths, 823.
Alexandria	Aug. 6	1		
India				July 9-15, 1916: Cases, 520; deaths, 325.
Bassein	July 2-8		15	
Bombay	July 16-22	20	15	
Madras Presidency	July 9-15	108	78	
Moulmein	July 2-8		21	
Prome	do		6	
Rangoon	July 9-15	34	32	
Toungoo	July 2-8		4	
Java				June 2-16, 1916: Cases, 3; deaths, 3.
Residencies—				
Pasoeroean	June 2-16	2	2	
Surabaya	do	1	1	
Mauritius	June 21	1		
Straits Settlements:				
Singapore	June 25-July 8	1	1	
Siam:				
Bangkok	June 18-July 6	25	21	

SMALLPOX.

Brazil:				
Bahia	July 30-Aug. 5	1	1	
China:				
Dairen	July 16-Aug. 5	3		
Foochow	July 2-22			Present.
Hongkong	July 23-29	1		
India:				
Bombay	July 16-22	6	5	
Madras	July 9-22	24	12	
Rangoon	July 9-15	1		
Japan:				
Kobe	July 24-30	9	1	
Java				East Java, June 9-16, 1916: Cases, 29; deaths, 1. Mid-Java, May 20-June 9, 1916: Cases, 111; deaths, 15. West Java, June 2-22, 1916: Cases, 110; deaths, 21.
Batavia	June 2-22	18	3	
Mexico:				
Aguascalientes	Aug. 14-27		6	
Portugal:				
Lisbon	Aug. 6-12	1		
Spain:				
Madrid	July 1-31		17	
Malaga	May 1-31		7	
Seville	June 1-30		3	
Straits Settlements:				
Singapore	June 25-July 1	1		

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

Reports Received During Week Ended Sept. 15, 1916—Continued.

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Egypt:				
Alexandria	July 23-29	12	9	
Japan:				
Hakodate	July 16-22	2		
Tokyo	July 3-25	4		Jan. 1-July 25, 1916: Cases, 468.
Java				May 20-June 22, 1916: Cases, 58; deaths, 6.
Batavia	June 9-22		2	
Samarang	May 20-June 9	7	2	
Mexico:				
Aguascalientes	Aug. 14-27		47	
Chihuahua	Sept. 7	40		
Durango	Sept. 1			Present.
Juarez	Sept. 7	12		
Zacatecas	do			Prevalent in State.
Norway:				
Bergen	July 30-Aug. 5		1	
Sweden:				
Stockholm	July 23-29	2		
Turkey in Asia:				
Haifa	June 19-25	15	7	

YELLOW FEVER.

Mexico:				
Merida	Aug. 29-Sept. 4	6	1	

Reports Received from July 1 to Sept. 8, 1916.

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary				Mar. 12-May 6, 1916: Cases, 425; deaths, 155.
Austria	Mar. 26-Apr. 8	2		
Bosnia-Herzegovina	Mar. 12-Apr. 29	397	147	
Hungary	Mar. 20-Apr. 2	2		
Ceylon:				
Colombo	June 25-July 1	1	1	May 7-20, 1916: Cases, 43; deaths, 5, from s. s. Hong Kheng from Haifong: total to June 1: Cases, 61; deaths, 37. May 28-June 10, 1916: Cases, 19, from the port.
China:				
Hongkong	Aug. 19			Present.
Egypt:				
Suez	May 18-20	5	2	From s. s. Pei-ho from Bombay.
Tor, quarantine station	May 22-June 3	112	42	Do.
India:				
Akyab	June 11-17		1	
Bassein	Apr. 23-June 10		3	
Bombay	May 14-July 15	34	16	
Calcutta	May 7-July 1		259	
Do	July 2-8		14	
Henzada	Apr. 23-June 17		6	
Madras	June 25-July 1	1	1	
Do	July 2-8	1		
Pegu	June 4-10		1	
Rangoon	May 24-July 1	12	8	
Indo-China				Dec. 1-31, 1915: Cases, 510; deaths, 395. Jan. 1-Feb. 29, 1916: Cases, 1,332; deaths, 762.
Provinces—				
Anam	Dec. 1-31	493	388	
Do	Jan. 1-Feb. 29	1,295	738	
Cambodia	do	11	10	
Cochin-China	do	6	1	
Tonkin	Dec. 1-31	17	7	
Do	Jan. 1-Feb. 20	20	13	
Saigon	May 1-July 2	162	74	
Do	July 3-16	35	23	

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

Reports Received from July 1 to Sept. 8, 1916—Continued.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Japan:				
Kobe	Aug. 30	46		
Nagasaki	Aug. 8-18	262	107	
Osaka	Aug. 30	353		
Yokohama	Aug. 15	1		55 cases, with 9 deaths in quarantine.
Java				East Java, Apr. 8-May 19, 1916: Cases, 7; deaths, 4. West Java, Apr. 3-June 1, 1916: Cases, 69; deaths, 56.
Batavia	Apr. 13-June 1		79	
Malang	Apr. 8-14	2	2	
Malang and Djombang	Apr. 28-May 5	2	2	
Surabaya residency	May 6-19	5	2	Including Malang, 2 cases, and Sidoardjo and Malang, 3 cases, with 2 deaths.
Persia:				
Asterabad	June 10			Present, with 4 or 5 deaths daily.
Foumen	May 9	3	2	Previously erroneously included in cases at Rehct.
Ghazian	June 13	2	1	
Mohammerah	June 12			Present.
Philippine Islands:				
Manila	May 14-July 1	36	25	Not previously reported: Cases, 8; deaths, 1.
Provinces				July 16-Aug. 5, 1916: Cases, 868; deaths, 450.
Albay	July 2-15	27	17	
Bataan	do	2	2	
Bulacan	June 18-July 1	17	4	
Do	July 2-15	167	107	
Cagayan	June 25-July 1	2	1	
Do	July 2-8	2		
Camarines	June 18-July 1	69	32	
Do	July 2-15	143	85	
Cavite	June 11-July 1	14	11	
Do	July 2-15	5	1	
Laguna	May 21-July 1	31	20	
Do	July 2-15	2	2	
Pampanga	July 9-15	7	5	
Rizal	May 21-July 1	11	9	
Do	July 2-15	31	20	
Romblon	June 18-July 1	68	39	
Do	July 9-15	11	8	
Tayabas	June 10-24	11	8	
Siam:				
Bangkok	May 15-27	22	21	
Straits Settlements:				
Singapore	May 27-June 24	8	3	
Turkey in Europe:				
Constantinople	May 19-June 15	53	29	Present among soldiers June 14.
Smyrna	To June 14			Epidemic. Estimated number cases daily, 50.
Turkey in Asia:				
Adana	June 16	1	1	
Aleppo	June 15-18	16	5	
Bagdad	June 15-21	22	6	
Damascus	June 16-21	35	21	
Jaffa	June 17-23	67	27	
Smyrna	June 15-20	19	10	
At sea:				
Steamship Hong-Kheng	Apr. 27-May 9	17	14	En route from Haifong, Indo-China, to Colombo.
Steamship Pei-ho	Apr. 19-30	1	1	From Saigon, Indo-China, for Colombo.
Do	May 5-17	8	8	From Colombo for Suez.

PLAGUE.

Ceylon:				
Colombo	Apr. 30-July 1	49	46	
Do	July 2-8	12	12	
Chile:				
Mejillones	May 28-June 3	1		
Antofagasta	June 4-July 22	2		
China:				
Hongkong	May 28-June 30	7	7	

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

Reports Received from July 1 to Sept. 8, 1916—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Ecuador:				
Ambato	May 1-31			Epidemic.
Bahia	do			Country district, vicinity of Bahia.
Daule	June 1-30	4	2	
Guayaquil	May 1-June 30	10	3	
Manta	May 1-31			Country district, vicinity of Manta.
Egypt				Jan. 1-Aug. 3, 1916: Cases, 1,686; deaths, 823. Jan. 1-June 29, 1916: Cases, 1,634; deaths, 792.
Alexandria	May 26-Aug. 3	39	25	
Cairo	July 10	1		Imported.
Port Said	May 28-June 28	8	5	
Do	July 20-Aug. 3	5	4	
Provinces—				
Assiout	May 27-June 29	9	8	
Beni-Souef	May 26-June 25	34	15	
Do	July 1-10	2	1	
Fayoum	May 26-June 30	112	45	
Do	July 1-Aug. 3	9	2	
Galioubeh	June 7	1		
Girgeh	June 9-21	3	1	
Do	July 7-10	7	7	
Menoufieh	June 12-30	9	4	
Do	July 1-31	5	3	
Minieh	May 21-June 30	37	14	
Do	July 3-10	5	2	
Great Britain:				
Bristol	Aug. 18	1		
India				May 7-July 1, 1916: Cases, 3,564; deaths, 2,681.[1]
Bassein	Apr. 23-July 1		201	
Bombay	May 14-July 1	290	264	
Do	July 2-15	40	35	
Calcutta	May 7-July 1		[illegible]	
Henzada	Apr. 23-July 1		14	
Karachi	May 14-July 1	72	61	
Do	July 2-15	1	3	
Madras Presidency	May 14-June 24	139	94	
Mandalay	May 14-June 3		1	
Moulmein	Apr. 23-June 10		37	
Pegu	June 11-July 1		2	
Prome	Apr. 23-May 20		1	
Rangoon	Apr. 23-July 1	467	440	Apr. 16-22, 1916: Cases, 54; deaths, 52.
Do	July 2-8	39	33	
Toungoo	June 25-July 1		2	
Indo-China				Dec. 1-31, 1915: Cases, 90; deaths, 70. Jan. 1-Feb. 29, 1916: Cases, 205; deaths, 153.
Provinces—				
Anam	Dec. 1-31	36	20	
Do	Jan. 1-Feb. 29	79	62	
Cambodia	Dec. 1-31	27	36	
Do	Jan. 1-Feb. 29	77	71	
Cochin China	Dec. 1-31	4	1	
Do	Jan. 1-Feb. 29	49	20	
Tonkin	Dec. 1-31	23	23	
Saigon	May 15-July 16	74	39	
Java:				
Residences—				
Kediri	Apr. 9-May 19	18	18	
Pasoeroean	do	7	6	
Surabaya	do	23	21	Including Surabaya city and district.
Surakarta	do	15	24	
Japan:				
Taiwan—				
Tamsui	July 16-22	2	2	17 miles from capital city.
Mauritius	Apr. 15	5	8	
Persia:				
Recht	May 2-19	20	14	
Siam:				
Bangkok	Apr. 30-June 17	50	45	
Straits Settlements:				
Singapore	Apr. 30-June 24	4	1	
Union of South Africa:				
Orange Free State	Jan. 23-Mar. 26	36	23	Remaining under treatment Mar. 26, 6 cases.

[1] Reports for week ended May 20 and 27, 1916, not received.

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

Reports Received from July 1 to Sept. 8, 1916—Continued.

SMALLPOX.

Place.	Date.	Cases.	Deaths.	Remarks.
Australia:				
New South Wales—				
Guildford	June 9–22	2		
Narrabri	May 26–June 7	8		
Do	July 7–20	4		
Sydney	June 23–30	1		
Do	July 1	3		
Tamworth	June 9–22	1		
Do	July 7–20	1		
Austria-Hungary:				
Austria				Feb. 13–May 20, 1916: Cases, 2,175.
Galicia, Province	Apr. 23–May 20	464		
Prague	July 2–8	1		
Vienna	May 27–July 1	4	1	
Do	July 9–29	2		
Hungary—				
Budapest	May 21–July 1	38	15	
Do	July 2–8		1	
Brazil:				
Bahia	do	1	1	
Para	do		4	
Rio de Janeiro	Apr. 9–June 17	94	18	
Santos	May 8–14		1	
British East Africa:				
Mombasa	Apr. 24–May 31	4	2	
Canada:				
Ontario—				
Fort William and Port Arthur	July 9–15	1		
Niagara Falls	July 2–8	1		
Toronto	June 25–July 29	3		
Ceylon:				
Colombo	May 7–June 3	4		Cases May 28–June 3 from the port.
China:				
Antung	May 22–June 18	2	1	
Dairen	May 21–July 1	2	1	
Chungking	May 7–June 24			Present.
Do	July 2–22			Do.
Foochow	May 7–27			Do.
Harbin	May 2–14	2	1	
Hongkong	May 7–June 24	68	50	
Do	July 2–15	4	3	
Nanking	June 11–17			Do.
Tientsin	May 14–July 1	45	11	
Do	July 2–29	3	1	
Egypt:				
Alexandria	May 28–June 17	4	2	
Cairo	Jan. 22–Apr. 1	27	8	
Port Said	Mar. 12–25	2	2	
France:				
Paris	May 14–July 1	9		
Do	July 2–8	1		
Germany:				
Breslau	May 21–27	1		
Hamburg	June 11–17	1		
Königsberg	July 2–8	3		
Great Britain:				
Cardiff	June 4–17	1	1	
London	do	1		
Southampton	July 31–Aug. 5	1		
Greece:				
Athens	Apr. 1–June 13	178	37	
Do	July 9–23			Present. Estimated occurrence, 10 cases weekly.
India:				
Bassein	May 7–June 10		2	
Bombay	May 14–July 1	153	79	
Do	July 2–15	17	11	
Calcutta	May 7–June 3		3	
Do	July 2–8		1	
Madras	May 14–July 1	139	42	
Do	July 2–8	10	7	
Rangoon	Apr. 23–July 1	260	135	
Do	July 2–8	3	4	

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

Reports Received from July 1 to Sept. 8, 1916—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Indo-China				Dec. 1–31, 1915: Cases, 74, deaths, 14. Jan. 1–Feb. 29, 1916: Cases, 134; deaths, 16.
Provinces—				
Anam	Dec. 1–31	48		
Do	Jan. 1–Feb. 29	24		
Cambodia	Dec. 1–31	19	13	
Do	Jan. 1–Feb. 29	37	14	
Cochin China	Dec. 1–31	1	1	
Do	Feb. 1–29	10		
Tonkin	Dec. 1–31	6		
Do	Jan. 1–Feb. 29	63	2	
Japan:				
Kobe	May 29–June 25	24	4	
Nagasaki	June 26–July 2	1	1	
Java				East Java, Apr. 8–May 19: Cases, 13; deaths, 8. Mid-Java, Apr. 1–May 19, 1916: Cases, 148; deaths, 18. West Java, Apr. 13–June 1, 1916; Cases, 141; deaths, 28.
Batavia	Apr. 13–June 1	9	5	
Blora and Malang	May 13–19	4	1	
Kraksan and Soemenap	May 6–12	2		
Samarang	May 13–19	2		
Sittoebondo	Apr. 8–14	1	1	
Surabaya	May 6–19	2	1	
Toeban and Bosjonegoro	Apr. 8–14	6	6	
Malta	Apr. 1–30	7	1	
Mexico:				
Aguascalientes	June 12–Aug. 13		59	
Frontera	May 28–June 10	4	1	
Guadalajara	June 11–17	35	9	
Mazatlan	May 31–June 6		4	
Tenosique	June 14			175 miles south of Frontera.
Vera Cruz	June 4–Aug. 6	7	12	Epidemic among troops.
Netherlands:				
Amsterdam	May 28–June 3	1		
Philippine Islands:				
Manila	....do	1		
Do	July 1–8	3		
Porto Rico				June 19–25, 1916: Cases, 33.
Aguas Buenas	June 19–25	5		
Arecibo	....do	2		
Do	Aug. 7–13	1		
Bayamon	June 19–July 2	2		
Naranjito	June 26–July 2	4		
Rio Piedras	....do	1		
San Juan	....do	24		
Toa Alta	....do	12		
Portugal:				
Lisbon	May 21–July 1	15		
Do	July 9–Aug. 5	6		
Russia:				
Moscow	Apr. 30–July 1	222	59	
Do	July 2–15	23	127	
Riga	Apr. 6–12	1		
Do	July 1–22	2		Apr. 1–30, 1916: 1 case.
Petrograd	Apr. 23–July 1	162	35	
Siam:				
Bangkok	May 24–30	2		
Spain:				
Madrid	May 1–31		13	June 1–30, 1916: Cases, 19.
Valencia	May 21–July 1	12	4	
Do	July 8–22	5		
Straits Settlements:				
Penang	May 14–20	3		
Singapore	Apr. 30–May 27	4	3	
Switzerland:				
Basel	May 13–July 1	20		
Do	July 2–15	9		
Union of South Africa:				
Durban	June 1–30	1		
Johannesburg	May 28–June 3	1		
At sea:				
Steamship Katuna				Case of smallpox landed at Colombo, Ceylon, May 12, 1916. Vessel arrived May 27 at Fremantle, Australia, was ordered to quarantine, and proceeded to Melbourne direct for disinfection.

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

Reports Received from July 1 to Sept. 8, 1916—Continued.

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Austria				Feb. 13–May 20, 1916: Cases, 2,407.
Galicia, province	Apr. 22–May 20	1,311		
Vienna	July 2–15	3		
Hungary				Feb. 21–Mar. 5, 1916: Cases, 35; deaths, 7.
Budapest	May 21–June 24	14	2	
Do	July 2–8	1		
Canada:				
New Brunswick—				
St. John	July 29	4		
China:				
Antung	June 19–July 29	3	1	
Harbin	May 2–8	1		
Tientsin	May 14–20		1	
Egypt:				
Alexandria	May 21–July 1	235	93	
Do	July 2–22	96	38	
Cairo	Jan. 8–Mar. 11	76	35	
Port Said	Mar. 18–Apr. 1	7	2	
Germany:				
Aix la Chapelle	July 2–8		1	
Berlin	June 18–24		1	
Do	July 16–29		3	
Bremen	do	6		
Chemnitz	May 28–June 3		1	
Frankfort on Main	June 11–17		1	
Hanover	May 7–27	4	1	
Do	July 1–22	2		
Königsberg	June 4–10	1		
Do	July 9–29	5		
Leipzig	June 4–10		1	
Stettin	July 16–22		1	
Great Britain:				
Belfast	July 16–Aug. 12	9	2	
Glasgow	July 9–Aug. 12	8	6	
Greece:				
Saloniki	May 1–July 2		61	
Do	July 3–9		12	
Italy:				
Palermo	June 29–July 5	1	1	
Japan:				
Tokyo	May 22–July 2	110		Jan. 1–July 2, 1916: Cases, 462.
Java				East Java, Apr. 8–May 24, 1916: Cases, 20; deaths, 9. Mid-Java, Apr. 1–19, 1916: Cases, 44; deaths, 9. West Java, Apr. 13–June 1, 1916: Cases, 68; deaths, 15.
Batavia	Apr. 13–June 1	31	10	
Samarang	Apr. 1–May 19	13	4	
Surabaya	Apr. 8–May 12	6	6	
Mexico:				
Aguascalientes	June 12–Aug. 13		104	
Guadalajara	June 11–17	4	1	
Vera Cruz	June 4–9		2	
Do	July 24–Aug. 6		6	
Russia:				
Moscow	Apr. 30–July 1	909	52	
Do	July 9–15	19	3	
Petrograd	Apr. 23–July 1	59	13	
Sweden:				
Stockholm	June 21–27	1		
Do	July 9–22	3		
Switzerland:				
Geneva	May 21–27	1		
Zurich	July 23–29	2		
Turkey in Asia:				
Adana	May 13–27			Present.
Bagdad	June 27			Do.
Haifa	Apr. 24–June 11	35	13	
Jaffa	Apr. 23–June 10		40	Mar. 19–Apr. 1, 1916: Present.
Mersina	May 7–27	8		Apr. 2–8, 1916: Cases, 3. May 6–20: Many cases.
Tarsus	May 13–27			Present.

YELLOW FEVER.

Ecuador:				
Babahoyo	June 1–30	2		
Guayaquil	May 1–June 30	76	51	
Milagro	June 1–30	1	1	
Mexico:				
Merida	July 1–22	9	1	
Progreso	Aug. 13	1	1	

SANITARY LEGISLATION.

COURT DECISIONS.

CALIFORNIA DISTRICT COURT OF APPEAL, FIRST DISTRICT.

Milk—Unregistered Dairy—Customer Required to Pay for Milk Although Dairy Was Not Registered.

LUCHINI *v.* ROUX ET AL. (Feb. 24, 1916.)

Under the California law requiring the registration of dairies with the State authorities, a customer can not refuse to pay for milk furnished because the dairy is not registered.

A California law required the registration of dairies. The defendant purchased milk from an unregistered dairy and refused to pay for it on the ground that the sale of milk from such a dairy was unlawful. The court held that the only penalty provided by the law for failure to register was fine or imprisonment; that the law did not make the sale of milk from an unregistered dairy unlawful; and that the milk must be paid for.

[157 Pacific Reporter, 554.]

KERRIGAN, J.: This action was brought by plaintiff, who was a dairyman, upon two causes of action for the recovery of the sum of $1,609.55. The first was for the sum of $1,339.49 upon an account stated, and was based upon the sale of milk, wood, horses, hogs, and hay. The second was for milk delivered to the defendants by plaintiff at an agreed price of $270.06.

Defendants, who were cheese manufacturers, in answer to the first cause of action, denied that an account was ever stated or that they ever promised to pay the plaintiff any balance due, and further denied that there was due from them any sum whatever upon the second cause of action. As a separate and distinct defense to both counts defendants alleged that the plaintiff had no legal capacity to sue upon or maintain the alleged cause of action, for the reason that he had failed to comply with the provisions of sections 6 and 16 of the so-called dairy act, requiring those engaged in the dairy business to register as provided by the act, and that the sales, in so far as the milk was concerned, were wrongful within the meaning of the act, and that no recovery could be had therefor.

The court found that the milk respecting which an account was stated was not adulterated, and that the sale was not wrongful within the meaning of the act, and rendered judgment in favor of the plaintiff and against defendants in the sum of $1,339.49, the full amount alleged to be due upon the account stated. It further decreed that plaintiff take nothing upon his second cause of action. Defendants appeal from such judgment, and from the order denying a new trial.

The main contention upon which the defendants rely for the reversal of the judgment and order is that plaintiff is not entitled to recover the amount of the account stated, for the reason that he did not register his dairy with the State dairy bureau as provided by the dairy act (Stats. 1911, p. 959). The sections involved as a defense are as follows:

SEC. 6. Every person, firm, or corporation, operating any dairy, where more than four cows are milked, and every creamery, cheese factory, receiving station, skimming station, ice cream or ice milk manufacture, or milk condensary, shall on or before the 1st day of November of each year, cause to be registered with the secretary of the State dairy bureau a statement showing the full name and address of such person, firm, or corporation so operating the same, and also the full name and address of the owner or owners of the business so being operated, in case the person operating the same is not the owner, together with a statement of the class of such business carried on by such person or corporation, and the number of cows then being milked, in case of a dairy.

SEC. 16. No action can be maintained on account of any sale or other contract made in violation of, or with intent to violate, this act, by or through any person, who was knowingly a party to such wrongful sale or other contract.

SEC. 29. Milk and the products of milk enumerated in this section shall be deemed adulterated within the meaning of this act if it or they shall not conform to the following definitions and standards:

(1) Milk is the fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed or kept, excluding that obtained within 15 days before and 5 days after calving, and contains not less than 3 per cent of milk fat, and not less than 8.5 per cent of solids, not fat.

SEC. 41. Whoever shall violate any of the provisions of this act other than sections 9 to 35, both inclusive, and section 37 (the punishment for which is provided in sections 39 and 40 hereof) shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than $10 nor more than $200, or by imprisonment in the county jail for a period of not less than * * * 100 days, or by both such fine and imprisonment.

In addition to the above-enumerated sections there are provisions in the act prohibiting the sale of impure, unclean, or unwholesome milk, or milk produced in an insanitary dairy. An insanitary dairy is also defined at length. Other provisions of the act deal with the manufactured products of milk, their preparation for the market, the character of packages in which they may be offered for sale, and the labels that may be placed thereon. Still other provisions of the act require substitutes for butter and cheese to be branded. In short, the act contains comprehensive regulations having to do with the production of milk, its sale, the manufacture of products therefrom, and their method of marketing, and the sale to the public, the whole being designed to protect the public health and promote its well-being in so far as they depend upon the purity and wholesomeness of the important articles of consumption dealt with by the act. We also find in the act various sections similar to section 41, above set forth, making violations of the act misdemeanors, and affixing punishments to them in the shape of fines and terms of imprisonment of various amounts and durations; and, finally, we have section 16 of the act, also set out above, providing that no action can be maintained on account of any sale made in violation of the act.

The contention of the appellants that the contract in this case is void is not based upon the character of the milk delivered under it, but is squarely founded upon the fact that the plaintiff had not complied with section 6 of the statute, requiring registration. So far as this branch of the appellant's argument is concerned, the milk sold by the plaintiff might have been of the most wholesome character and unexcelled by any to be obtained anywhere; their contention simply is that, coming as it did from an unregistered dairy, a contract for its sale was a violation of the act.

We are unable to agree with this contention. We find nowhere in the act any prohibition of the sale of milk from an unregistered dairy as such. If it is impure or unwholesome or produced in an insanitary dairy, then its sale is prohibited along with that of milk of the same character produced in a registered dairy, and a contract for its sale would come within the terms of section 16 of the act. The violation of the statute by the failure of the owner or operator of a dairy where more than four cows are milked to register is by section 41 thereof made a misdemeanor punishable by fine and imprisonment; and nowhere in the statute is the sale of its products forbidden if pure and wholesome. The proposition that, if an act is prohibited by law, a contract for its performance is invalid, is undoubtedly correct; but in applying this principle to the case at bar the appellants are confounding plaintiff's failure to register (made a misdemeanor and punishable as such) with the contract he entered into for the sale of his milk. They seek to draw the inference that because plaintiff was guilty of a misdemeanor in failing to comply with the terms of the act requiring registration a contract for the sale of his milk was a violation of the statute. We think no such inference can be drawn. A specific penalty is annexed to the failure to register by the owner or operator of a dairy of the character here involved, and this court can not by inference annex an additional punishment for such failure. The sale under consideration not being a violation of the act, the plaintiff was not inhibited from maintaining this action.

The cases cited by the appellants on this question are not in point. In each case the sale itself was by the statute in terms made invalid, except in the case of Miller *v.*

Post (1 Allen (Mass.), 434), which was a case arising under a statute which made it a misdemeanor to use an unsealed can in the sale of milk. The court held that such an enactment was equivalent to making the sale of the milk itself in an unsealed can unlawful; but that case does not go to the extent claimed by the defendants.

* * * * * * *

The appellants next urge that the court erred in failing to find upon material issues raised by the answer to the first cause of action. The issues referred to were raised by allegations of the amended answer to the effect:

That the plaintiff had no legal capacity to sue, * * * in this: That the plaintiff has not complied with the provisions of sections 6 and 16 of an act of the legislature, etc. (reciting the statute under consideration), and that the sale of milk * * * was a wrongful sale within the meaning and in violation of section 16 and section 20 and section 6 of an act of the legislature, etc. (reciting the same act).

Finding 4 as made by the court is:

That the sale of milk * * * was not a wrongful sale within the meaning or in violation of section 16, or of section 29 or of section 6 or of any section whatever of the act of the legislature, etc.

This finding was clearly intended to, and, we think, does, cover the issues now referred to.

* * * * * * *

For the reasons given, the judgment and order are affirmed.

We concur: Lennon, P. J.: Richards, J.

TEXAS COURT OF CRIMINAL APPEALS.

Prescribing Habit-Forming Drugs—Texas Law Construed—Not Unlawful to Prescribe Habit-Forming Drugs to Alleviate Pain or to Cure a Drug Habit.

FYKE *v.* STATE. (Mar. 15, 1916.)

A Texas law makes it unlawful for any practitioner of medicine to furnish to or prescribe for the use of any habitual user of habit-forming drugs any of the drugs enumerated in the law, "provided, however, that the provisions of this section shall not be construed to prevent any lawfully authorized practitioner of medicine from prescribing in good faith for the use of any habitual user of narcotic drugs such substances as he may deem necessary for the treatment of such habit."

A physician prescribed morphine for a drug addict who was suffering from a painful disease, for the purpose of alleviating pain, and later he gave her morphine in diminishing amounts while treating her for the drug habit.

The physician was charged with violating the law.

The evidence showed that the patient had gained in weight, the symptoms of her disease had nearly disappeared, and at the time of the trial she had entirely ceased the use of the habit-forming drugs.

The physician was convicted in the lower court, but the court of criminal appeals held that he had not violated the statute.

The court (Davidson, J.) said:

* * * * * *

[184 Southwestern Reporter, 197.]

"Appellant, as physician, administered the morphine for two purposes: First, to relieve her of her present suffering; and, second, to cure her of the habit. The evidence of the woman, Maud Smith, makes it apparent that he succeeded in both.

"The statute was intended to prohibit these practitioners from administering those drugs to those who are addicted to the habit of using them for the purpose of continuing that habit. It does not interdict the administration of these drugs where it is necessary to alleviate pain or to cure the habit. Therefore, if the practitioner administers it to alleviate such pain, or uses it in good faith where the party is sick, or as a means of finally curing the habit, it is not within the statutory denunciation."

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

NEWPORT, R. I.

Foodstuffs—Protection and Sale. (Ord. Aug. 4, 1916.)

The following section has been added to chapter 25 of the ordinances of the city of Newport:

SEC. 28. No dealer in fruit, vegetables, fish, shellfish, meats, or provisions shall, between the dates of May 1 and November 1, sell, offer, or dispose for sale or have in his possession with the intent to sell for human food, any fruit, vegetables, fish or shellfish, meats, or provisions which are or have been exposed to contamination by flies. For the purpose of this section, it is expressly provided that all stores and warehouses in which the above mentioned food products are kept or exposed with the intent to sell, shall have all windows and doors protected by tight wire screens; and that all barrows, carts, wagons, and other vehicles in which such food products are exposed for sale, stored or kept with intent to sell, shall be provided with tight screens, which shall be kept closed at all times when such articles are not actually being removed or transferred from said barrows, carts, wagons, or other vehicles.

Premises—Sanitary Regulation—Abatement of Nuisances. (Ord. Aug. 4, 1916.)

The following sections have been added to chapter 25 of the ordinances of the city of Newport:

SEC. 29. No person in the city of Newport shall have in his yard, cellar, stable, or elsewhere upon his premises, any filth, trash, litter, rags, refuse of any description, or any stagnant or standing water, or other material in which flies or mosquitoes may breed.

SEC. 30. It shall be the duty of the board of health, upon complaint report from the inspector of nuisances, or otherwise, upon learning of the existence upon any premises of one or more of the conditions described in section 29 of this ordinance, to notify the occupant, owner, or agent of the owner of said premises in writing of the existence on said premises of any nuisance as above described, from unsanitary and disease-producing condition, to wit, places where flies or mosquitoes can breed, and to order him to abate and remove the same forthwith, within 48 hours from the receipt of said notice. In case said occupant, owner, or agent of the owner of said premises, shall fail to comply with said order within the specified time, then the board of health, by themselves or their agents, shall proceed at once to abate and remove said nuisance. The board of health shall keep accurate account of the expense so incurred, and the same shall be chargeable to such occupant, owner, or agent of the owner, and upon refusal, after demand, to pay such expenses, such occupant, owner, or agent of the owner shall be liable in an action at law to be instituted in behalf of the city of Newport for the recovery of such expenses.

Manure—Care and Removal. (Ord. Aug. 4, 1916.)

The following sections have been added to chapter 25 of the ordinances of the city of Newport:

SEC. 31. It shall be the duty of the occupant, owner, or agent of the owner, having upon his premises any horse, mule, cow, goat, sheep, pig, or other domesticated

animal, to remove or cause to be removed all manure and animal excrement from said premises once in each week, from March 15 to November 15, inclusive, and once in every fortnight from November 15 to March 15, and said occupant, owner, or agent of the owner shall be required to store all such manure or excrement pending its removal in water-tight, screened receptacles not accessible to flies.

SEC. 32. When the duty of compliance with the provisions of section 31 of this ordinance shall be placed upon the owner of any premises, stable, lot, or open area, it shall be the duty of the agent of the owner in said owner's absence, to comply with the provisions above specified. And for the purpose of this ordinance, any person receiving or collecting rent or permitting the occupancy of said premises or attending or caring for said premises, in any manner whatever, shall be deemed to be the agent of the owner.

Penalty. (Ord. Aug. 4, 1916.)

The following section has been added to chapter 25 of the ordinances of the city of Newport:

SEC. 33. Any person who shall violate any of the provisions of sections 28, 29, and 31 of this ordinance shall, upon conviction, be fined not less than $5 and not more than $20, or be imprisoned in the county jail not less than 3 nor more than 10 days.

NORTH YAKIMA, WASH.

Meat Inspector and Deputies—Appointment and Salaries. (Ord. A–217, July 15, 1916.)

SECTION 1. That section 7 of ordinance No. A–65,[1] entitled "An ordinance regulating the slaughtering of animals and the sale of meat products intended for human consumption within the corporate limits of the city of North Yakima; providing for post-mortem inspection thereof, for the creation of the office of city meat inspector, for the appointment of a subinspector and deputy inspectors by the city commission and fixing their compensation; authorizing the city commission to make the necessary rules and regulations for the enforcement of this ordinance; providing for the selection of a central point of inspection, a penalty for the violation of this ordinance, and repealing all ordinances and parts of ordinances in conflict herewith," passed by the city commission on the 17th day of April, 1912, be and the same is hereby amended to read as follows:

SEC. 7. The city commission of the city of North Yakima shall, and it is hereby authorized and empowered to appoint some person to carry out the provisions of this ordinance to be known and designated as the "city meat inspector," who shall hold office during the pleasure of the city commission and shall be paid a salary not to exceed $150 per month. The city commission is hereby authorized and empowered to appoint such deputy meat inspectors as the city commission may from time to time deem proper and necessary at a salary to be fixed by the city commission, the salary of such an inspector and deputies to be paid by the city of North Yakima on the 1st day of each and every month by warrants drawn upon the current expense fund of said city and not otherwise appropriated.

SEC. 2. That section 9 of ordinance No. A–65, entitled "An ordinance regulating the slaughtering of animals and the sale of meat products intended for human consumption within the corporate limits of the city of North Yakima; providing for post-mortem inspection thereof, for the creation of the office of city meat inspector, for the appointment of a subinspector and deputy inspectors by the city commission and fixing their compensation; authorizing the city commission to make the necessary rules and regulations for the enforcement of this ordinance; providing for the selection of a cen-

[1] Public Health Reports Reprint 199, p. 352.

tral point of inspection, a penalty for the violation of this ordinance, and repealing all ordinances and parts of ordinances in conflict herewith," passed by the city commission on the 17th day of April, 1912, be and the same is hereby amended to read as follows:

SEC. 9. The city meat inspector herein provided for shall be a qualified veterinarian of good standing in his profession.

ST. AUGUSTINE, FLA.

Communicable Diseases—Notification of Cases—Placarding—Quarantine. (Ord. 32, Aug. 1, 1916.)

SEC. 8. It shall be the duty of all physicians practicing within the city of St. Augustine, Fla., to report in writing to the city health officer, within 12 hours, all cases of scarlet fever, yellow fever, smallpox, measles, diphtheria, tuberculosis in any of its forms, typhoid fever, cerebrospinal meningitis, anterior poliomyelitis, bubonic plague, glanders, anthrax, rabies, leprosy, cholera, dysentery (either amebic or bacillary), mumps, chicken pox, and pertussis (whooping cough) occurring within the city limits, and where no physician is called in it shall be the duty of the householder or any person having knowledge of such disease to report the same to the city health officer.

SEC. 9. The city health officer shall cause to be placarded all buildings in which are located any person or persons having smallpox, diphtheria (or membranous croup), scarlet fever, or measles, and all such cases shall be deemed isolated until released on the recommendation of the city health officer after proper disinfection has been carried out. Placards shall not be placed in cases of pertussis (whooping cough), chicken pox or mumps, but any person suffering from or exposed to these diseases shall be forbidden to enter any school, church, motion-picture theater, or any similar public place or building.

SEC. 10. The period of isolation for each of the above diseases shall be in accordance with the rules and regulations of the State Board of Health of Florida.

SEC. 11. *Definition of isolation.*—Isolation is hereby defined to be the complete separation of the person sick with a communicable disease, as prescribed by section 9, and those attending upon him, from all other persons on the premises.

SEC. 12. It shall be unlawful for any person or persons to enter or leave any premises where are located any cases of smallpox, diphtheria, scarlet fever, or measles, excepting by permission of the city health officer, and a warning card or placard shall be deemed sufficient notice to all persons to keep off of such premises.

SEC. 13. Whenever typhoid fever or dysentery is known to exist anywhere within the city limits of St. Augustine the city health officer shall personally make a thorough sanitary survey of the premises where such disease is known to exist, and he shall make every effort, with the assistance of the public health nurse and the sanitary inspector, to improve the sanitary conditions of such premises to such an extent as to effectively prevent the spread of these diseases.

Ophthalmia Neonatorum—Prevention of. (Ord. 32, Aug. 1, 1916.)

SEC. 43. All physicians, nurses, or midwives who shall attend the birth of any living child within the city limits of St. Augustine shall take the necessary precautions to prevent ophthalmia neonatorum, or blindness of the newborn, and for this purpose the following routine procedure shall be followed out in all cases of childbirth where a living child is born, that is to say, at least one drop of a freshly prepared silver nitrate solution, of not less than 1 per cent strength nor more than 2 per cent strength shall be placed in each eye of the newborn baby immediately following its birth.

Foodstuffs—Sale and Protection. Meat—Inspection of—Condemnation of Unwholesome. (Ord. 32, Aug. 1, 1916.)

SEC. 20. No decayed, spoiled, or diseased, or other unfit or deleterious meats, fruits, vegetables, or other food shall be exposed for sale or offered for sale within the city limits of St. Augustine, and the sanitary inspector may seize upon any such unfit articles and the same may be used as evidence in any prosecution under this section of this ordinance. All places where meats, vegetables, fruits, or other food products are sold or offered for sale shall be thoroughly screened with wire screening sufficiently close in mesh to exclude all flies, and all stands where fruits or vegetables are d splayed outside of such places on the sidewalk or in the doorways of such places of business shall be thoroughly screened with wire screening so as to exclude all flies, and such display stands shall not be less than 2 feet above the level of the sidewalk, and such display stands must be kept closed at all times except for the placing or removing of such fruit or vegetables.

All beef, pork, mutton, goat, and poultry offered for sale in the city of St. Augustine shall be subject to inspection of the city health officer, who shall have power to condemn any such meats or fowl unfit for human consumption.

Slaughterhouses—Sanitary Regulation. (Ord. 32, Aug. 1, 1916.)

SEC. 25. It shall be unlawful for any person or persons, firm or firms, corporation or corporations, to conduct, maintain, or own any slaughter pen within the city limits of the city of St. Augustine unless such slaughter pen shall comply with the following standards: Such slaughter pens shall be thoroughly screened so as to effectively exclude all flies; ample plumbing must be supplied so that there is at all times a plentiful supply of running water; the killing room and dressing room must have a concrete floor, with ample drain from a central low point in the middle of said floor, an overhead track shall convey the carcass, or carcasses, of all animals, as soon as they are dressed, into a tight, modern refrigeration room or compartment. A separate room shall be provided for hides, and these may be kept upon the premises, providing they are immersed in brine. All bones, entrails, scraps, and other offal shall be placed at once in covered tight barrels, or metal receptacles which must be removed at once unless where they may be kept for a time in the refrigeration room. All blood or other drainage from the slaughter pen shall be emptied into a public or private sewer, unless properly closed receptacles are provided, whereby the blood may be kept in the refrigeration room. No privy, toilet, or urinal shall be maintained in the same building where animals are killed and dressed, and any such privy, toilet, or urinal on the premises shall be in a separate building outside. Such slaughter pens must be kept clean at all times, and ample facilities must be provided so that men employed in the killing and dressing of animals may keep their hands and finger nails clean while handling the meat.

SEC. 26. Slaughter pens, or killing pens outside of the city limits, where native cattle, hogs, or other animals are killed for sale in the city of St. Augustine, shall be operated and maintained in a sanitary manner.

Fish, Oysters, etc.—Sale of. (Ord. 32, Aug. 1, 1916.)

SEC. 21. It shall be unlawful for any person or persons, firm or firms, corporation or corporations, to sell or offer for sale, any kind of food fish, crabs, shrimp, oysters, or clams within the city limits of the city of St. Augustine, unless such food fish, crabs, shrimp, oysters, or clams are secured and taken from the salt waters outside of said city and beyond the following described limits, to wit [the limits are described in the ordinance], and said food fish or shellfish shall not be taken within said limits and sold in the city of St. Augustine.

Milk and Cream—Production, Care, and Sale. (Ord. 32, Aug. 1, 1916.)

SEC. 32. Each dairyman or milk dealer selling or delivering milk for sale in St. Augustine shall agree to permit the city health officer or the sanitary inspector to make inspections of his premises at any time such inspection shall be deemed necessary, and dairymen shall further agree to comply with the recommendations of this ordinance, both in regard to the condition of their premises and with reference to standards of purity established by this ordinance for all milk sold within the city limits of St. Augustine, and no person or persons shall sell any milk, skimmed milk, or cream within the city limits of St. Augustine without first obtaining a license to conduct such business.

SEC. 33. All dairies supplying milk for sale within the city limits of St. Augustine shall be kept in a sanitary condition and such dairies shall have well-lighted, well-ventilated, clean, and well-drained cow barns, or milking barns, and all cow lots or barnyards shall be kept free from stagnant pools and shall be kept so that the footing for cows shall be free from quagmires. Surface wells are forbidden, and water-closets shall be absolutely flyproof, and situated not less than 100 feet from the milking stable, barn, or shed, or milk house. Before each milking all manure must be removed from the milking barn or shed and hauled or carried in a tight receptacle of approved type to a flyproof manure bin, or pit, situated at a distance of 100 feet from the barn, stable, or shed.

SEC. 34. Cows must be furnished a plentiful supply of fresh water, and they must not have access to stagnant pools and drainage ditches. Before milking, each cow should be brushed off, and the udders and teats must be washed in clean water, and dried on clean towels or cloths. Long hairs on the udders which are likely to retain particles of dirt and dust should be clipped.

SEC. 35. The utmost cleanliness on the part of the milker is essential, and the hands and finger nails should be kept clean by frequent application of soap and water; the milking should be done into the high, small-mouthed sanitary milk pails, and the milk should be taken at once to the bottling room where it should be strained, aerated, and bottled with as little handling as possible.

SEC. 36. Each dairy shall have a screened, well-lighted and well-ventilated washing and bottling room, or rooms, and all bottles and utensils must first be washed and rinsed and then sterilized by boiling, or by being subjected to live steam, or steam under pressure, in a regular sterlizer for the purpose, and after such sterilization the bottles shall not be rinsed further but shall be placed in an inverted position on a draining board or rack, and shall be used without further rinsing or handling. Bottle caps shall be kept in a tight-fitting box, or carton, so as to protect them from flies.

SEC. 37. Standards of purity established for St. Augustine shall be as follows: No milk shall be sold unless said milk complies with the following standards, that is to say, the number of bacteria in such milk shall not exceed 500,000 per cubic centimeter, and the butter fat shall not be less than 3½ per cent of volume, solids (not fat) 8.5 per cent, total solids 12 per cent, and specific gravity 1,030. Such milk shall contain no colon bacilli (intestinal bacteria), and shall contain no added water, canned cream, canned milk, condensed milk, milk powder, foreign substances, or preservatives, nor shall any of the cream naturally belonging to such milk be removed, either by skimming or by mechanical separation, and any dairyman who shall persistently fail to comply with the above standards shall be fined upon first offense and upon second offense shall have his license revoked.

SEC. 38. All milk wagons delivering milk in St. Augustine shall be kept in a clean and sanitary condition, and no bottles collected on route, or routes, of any dairymen shall be rinsed or again refilled on or from the wagon. All milk to be sold shall be previously bottled in the regular bottling room before the wagon or other conveyance leaves the dairy.

SEC. 39. The city health officer or the sanitary inspector shall inspect all milk wagons or other conveyances delivering milk for use in St. Augustine, and they shall also take samples of not less than 1 pint of milk, skimmed milk, or cream in the original bottle, from each wagon or other conveyance, for examination by the State board of health laboratory to determine the degree of purity of such milk, skimmed milk, or cream, and samples for examination shall be taken at least once every two weeks.

SEC. 40. Skimmed milk is hereby defined to be milk from which part or all of the cream naturally belonging to such milk has been removed, and such skimmed milk may be sold providing it is placed in bottles or containers properly marked "Skimmed milk."

SEC. 41. Cream to be sold in St. Augustine shall contain not less than 20 per cent butter fat, and not more than 1,000,000 bacteria per cubic centimeter.

Wells—Construction of—Closing when Insanitary. (Ord. 32, Aug. 1, 1916.)

SEC. 14. Wells of all description shall be so constructed that no water or drippings from any of said wells or any other liquid or deleterious matter shall flow or run back into said well, and in the case of "dug" wells there shall be a fill or surface capping of solid concrete which shall be at least 6 inches in depth and shall slope from the edge of the well in all directions for a radius of at least 4 feet; the highest point of such concrete capping to be at the edge of the well and at least 6 inches above the level of the ground, and the lowest point to extend at its outer extremity to beneath the surface of the ground. Any person having the control of the premises on which is located a well not constructed in compliance with the provisions of this ordinance shall be punished as hereinafter provided, and the city health officer shall cause any such well not constructed in full compliance with this ordinance to be closed or filled up and abated as a nuisance.

Hotels, Restaurants, Boarding Houses, and Lunch Counters—Sanitary Regulation and Inspection. (Ord. 32, Aug. 1, 1916.)

SEC. 22. All hotels, restaurants, boarding houses, or lunch counters within the limits of the city of St. Augustine shall comply with the following requirements; that is to say, all dining rooms, or rooms where lunches are served, shall have all windows thoroughly screened with screening of sufficiently fine mesh to exclude all flies, and all doors or passageways leading to or from such dining rooms, or rooms where lunches are served, shall be provided with screen doors, which shall be in use at all times; and all kitchens or other places where food is prepared or cooked for such hotels, boarding houses, or lunch counters shall also be thoroughly screened and shall be kept clean and tidy, and free from disagreeable odors, and all swill, garbage, or other offal shall be kept in large galvanized-iron cans with tight iron covers.

SEC. 23. The sanitary inspector shall make frequent and thorough inspection of all hotels, restaurants, boarding houses, and lunch counters, and he shall examine especially the kitchens and back parts of the premises of such places of business, and he must at once call to the attention of the owners or proprietors of such places the slightest violation of the provisions of this ordinance as set forth in the foregoing section.

Premises—Sanitary Regulation. (Ord. 32, Aug. 1, 1916.)

SEC. 19. All premises in the city shall be kept in a state of sanitary cleanliness and shall be kept free from tin cans, bones, offal, refuse, and vegetable matter, trash, weeds, standing water, or other deleterious or insanitary substances, and persons living upon or in control of such premises shall be held responsible for its condition under the provisions of this ordinance. An exception is made in the case of cisterns and reservoirs or rain barrels used for the storage of water for drinking or other purposes, providing such cisterns, reservoirs, or rain barrels shall be screened so as to

effectively prevent the entrance of mosquitoes; and all external openings leading to sewers, cesspools, septic tanks, or Imhoff tanks shall be effectively screened so as to prevent the admission of mosquitoes or flies.

Sewers—Connections With. (Ord. 32, Aug. 1, 1916.)

SEC. 15. All water-closets, flush toilets, and urinals within accessible distance of any public sanitary sewer shall be connected with said sewer, and all surface privies existing on such premises are hereby ordered discontinued; but no water-closets, flush toilets, urinals, or drains leading from such water-closets, flush toilets, or urinals shall be connected into or empty into any so-called storm sewer or drainpipe intended only for the drainage of surface water in time of rains. All sanitary toilets, flush toilets, and urinals on premises included in the sanitary sewer district shall be connected with such public sanitary sewer, and all premises abutting on streets in any newly established public sanitary sewer district shall be connected within two years after the completion of such sewer; and all surface closets existing on such premises are hereby declared to be a nuisance and ordered discontinued.

Privies and Cesspools—Construction and Location. (Ord. 32, Aug. 1, 1916.)

SEC. 16. Outside the limits of accessible sewers surface privies may be made to comply with the following requirements; that is to say, such privy must be fly proof in every particular, it must contain a self-closing door, screen openings for light and ventilation on either side, and each seat cover fit so as to cover the hole completely; and such seat cover must be attached to the seat with metal hinges, and either a block or strip at the back or a spring hinge must oe used to insure closure of the seat when not in use. At the back and below the seat holes standard size galvanized buckets must be provided, such buckets to set on a tight board, plank, or concrete floor, and that portion of the privy below the seat must be fly proof and be provided with screened openings on either side, just below the level of the seats, for ventilation. The back part of the privy shall be provided with a tightly fitting door, made to swing and lift up, and hung with metal hinges. Such door shall be kept tightly closed by means of a hook or wooden button, and only opened for the purpose of emptying the buckets from time to time as necessary. A box of lime shall be kept inside the privy at all times for use as a deodorant every time the privy is used.

SEC. 17. No privy, cesspool, septic tank, or Imhoff tank shall be constructed or maintained within less than 40 feet of any well of any description.

Stables and Disposal of Manure. (Ord. 32, Aug. 1, 1916.)

SEC. 30. The owners, managers, or persons in control of any stables, inclosures, or lots where horses, mules, cows, or other animals are kept within the city of St. Augustine shall keep said stable or stables in a clean and sanitary condition, and shall not permit manure or unclean bedding or other filth to accumulate so as to be offensive to the senses or injurious to the public health. Each stall in all stables shall be thoroughly cleaned of all manure and used bedding at least once each day, and such manure and sweepings shall be placed in a covered ventilated bin of suitable size, which shall be covered with a wire-screen cover of sufficiently fine mesh to prevent the entrance or escape of flies, and such manure bin shall be constructed of planks or concrete, and shall have a tight bottom; the sides shall be at least 5 feet high, measuring from the bottom of the bin on the inside, and these shall be level on top where the screened cover shall fit on the top of the bin. (A plan of the manure-bin cover required will be furnished by the sanitary inspector or the health officer.) At one end or side of the manure bin there shall be an opening near the top which shall be sufficiently large that the manure and sweepings from the stable and stable yard may be thrown into the bin, and over this opening there shall be a door large enough to

cover the opening which shall be attached by means of strong hinges of iron or steel, and such door shall be tightly closed excepting only when it is opened temporarily in order to throw in the manure each morning. Each manure bin shall be made sufficiently large to hold all manure or used bedding and sweepings for a period of two or three months, and allowances shall be made in constructing such manure bin for at least 25 square feet of ground area for each horse, mule, or cow kept on the premises.

Manure—Use on Gardens, Lawns, etc. (Ord. 32, Aug. 1, 1916.)

SEC. 31. It shall be unlawful for any person to throw, place, or allow any fresh manure to remain in or upon any garden, lawn, or open lot in the city of St. Augustine. Manure intended for fertilizing purposes may be used, providing it has remained in a screened manure bin, as required by the foregoing section, for a period of at least two weeks, and providing further that such manure shall contain no maggots or fly larvæ.

Hogs—Keeping in City Prohibited. (Ord. 32, Aug. 1, 1916.)

SEC. 24. The keeping or herding of hogs in pens or otherwise within the city limits of the city of St. Augustine is hereby prohibited, and any person or persons violating this section of this ordinance shall be punished as provided for violations of this ordinance, and this ordinance shall apply to hogs owned by persons outside the city limits but found running at large within the limits of the city of St. Augustine.

Domestic Animals—Disposal of Dead Bodies. (Ord. 32, Aug. 1, 1916.)

SEC. 27. It shall be the duty of every person or persons, agent or agents, owner or owners of any cattle, horses, dogs, cats, hogs, goats, or any other animal, dying or found dead within the city limits of St. Augustine to forthwith remove and bury, or otherwise satisfactorily dispose of same in a sanitary manner, such animal at some place approved by the sanitary inspector, and where the person or persons, agent or agents, or owner of such dead animal is not known, then it shall be the duty of the owner upon whose property such animal was found dead to remove and bury such dead animal as above provided for.

Garbage and Refuse—Care and Disposal—Receptacles. (Ord. 32, Aug. 1, 1916.)

SEC. 18. All premises within the city limits of St. Augustine shall be kept free from garbage, swill, or other refuse matter, except that such garbage, swill, or other refuse matter may be temporarily placed in water-tight, flyproof, galvanized-iron cans, equipped with close-fitting tops or covers, and such garbage receptacles shall be placed in a convenient place so that their contents may be removed by the city wagons or the collectors authorized by the city health officer to collect such wastes.

Nuisances Defined. (Ord. 32, Aug. 1, 1916.)

SEC. 28. Where not specifically stated and provided for in the foregoing sections a sanitary nuisance is hereby defined to be the commission of an act by an individual, organization, or corporation, or the keeping, maintaining, propagation, existence, or permission of anything by an individual, organization, or corporation by which the life or health of an individual, or the lives or health of individuals may be threatened or impaired, or by which, or through which, directly or indirectly, disease may be caused.

SEC. 29. Nuisances, injurious to health, are declared to be: Filth, the contents of cesspools, offal, garbage, foul water, dye water, refuse from manufactories, urine, stable manure, decayed animal or vegetable matter, or other offensive substances

detrimental to health thrown, placed, or allowed to remain in or upon any private premises, street, avenue, alley, sidewalk, gutter, public reservation, or open lot within the corporate limits of St. Augustine, and any person who shall commit, create, or maintain any of the nuisances in this or the foregoing section shall be punished as provided for in this ordinance.

Health Officer, Public Health Nurse, and Sanitary Inspector—Appointment, Powers, and Duties. (Ord. 32, Aug. 1, 1916.)

SECTION 1. The office of city health officer is hereby created, and the city manager shall appoint a regular practicing physician to fill such office. The compensation of the city health officer shall be fixed as is the compensation of all city employees.

SEC. 2. The duties of the city health officer shall include all those duties enumerated in section 52 of the charter of the city of St. Augustine, Fla., including the enforcement of the rules and regulations of the State board of health of Florida and the ordinances of the city of St. Augustine, Fla., relative to the preservation and promotion of the public health; to recommend such action, from time to time, as he may deem necessary for the abatement and suppression of nuisances and the preservation of the lives and health of the inhabitants of the city. The city health officer shall also perform such duties regarding sanitary inspections of the city and the supervision of the production, preservation, and transportation and sale of food and foodstuffs as is necessary and proper and perform such other duties as may be required of him by the city manager under the ordinances of the city commission. The city health officer shall be recognized as the administrative head of the division of health of the department of public safety and welfare, and shall exercise all powers necessary for the enforcement of all ordinances, rules, and regulations required for the preservation of the public health and sanitation.

SEC. 3. The city health officer shall keep, or cause to be kept, a record of all utilities in the division of health and submit a complete written report monthly to the city manager, showing the conditions of the city as pertains to public health and sanitation, and shall make such suggestions and recommendations as he deems necessary.

SEC. 4. The position of public health nurse is hereby created. The city manager shall appoint a registered graduate nurse to fill such position. The compensation for such nurse shall be fixed as is fixed the compensation for all municipal employees: *Provided*, That nothing contained in this section shall be construed to prevent the city manager from securing the services of a public health nurse jointly with any organization or agency interested in public health nursing which, at this or any future time, may employ a public health or visiting nurse.

SEC. 5. It shall be the duty of the public health nurse to make such calls on the indigent sick within the city of St. Augustine as are requested by the members of the family of such person, or brought to the attention of the health department as cases requiring such service; the public health nurse shall give such advice as may be deemed necessary for the proper care of the patient as to food, ventilation, and bedside care and shall continue such service as long as required: *Provided, however*, She shall not be required to remain with one case longer than necessary to give temporary relief, nor shall she be required to make calls at night. The visiting nurse shall not give treatment nor render service in any case of sickness without instructions from a practicing physician, and in the event no physician is in charge of the case at the time of her call it shall be the duty of the visiting nurse to have the family summon a private physician, or in the event the family is unable to pay for the services of a private physician, it shall be the duty of the nurse to have the city health officer wait upon such patient. It shall particularly be the duty of the visiting nurse to answer all calls from physicians practicing in the city of St. Augustine and to cooperate to the fullest extent with the practicing physicians in the treatment and care of the indigent sick. The public health nurse shall perform such other pro-

fessional duties as may be required by the city health officer or the city manager. The public health nurse shall keep accurate records of the activities of her position, and shall render a monthly report in writing to the city health officer.

SEC. 6. The position of sanitary inspector is hereby created and the city manager shall appoint such a person as shall in the judgment of the city health officer be capable of discharging the duties of that office in an efficient and tactful manner, or shall designate some employee in the municipal service to perform the duties of sanitary inspector, in addition to his regular duties in any department.

SEC. 7. It shall be the duty of this officer to work under the direction and daily advice of the city health officer. He shall make such inspections as may be deemed necessary by the city health officer of all premises within the limits of the city of St. Augustine, Fla., and, in addition, he shall make such inspections as may be ordered by the city health officer, outside of the city limits, as may be necessary to protect the health and lives of persons residing within the city limits. Outside inspection shall include inspection of dairies, slaughterhouses, and dumps, and such other places the operation or maintenance of which would affect the health of persons residing within the city limits. It shall be his duty to call the attention of the owners or tenants of such premises to violations of the rules and regulations of the State board of health, and if such persons shall neglect or refuse to remedy the same they shall be prosecuted as provided under the terms of this ordinance.

Midwifery—Practice of. (Ord. 32, Aug. 1, 1916.)

SEC. 42. It shall be unlawful for any woman (white or colored) to practice as a midwife in St. Augustine unless such midwife be registered with the registrar of vital statistics, and any person other than a licensed physician who shall deliver a woman in labor, or who shall bargain or contract to attend any woman at childbirth shall be declared to be practicing as a midwife and shall therefore register.

Penalty. (Ord. 32, Aug. 1, 1916.)

SEC. 44. The penalty for violation of any of the provisions of this ordinance, where not otherwise stated, shall be by fine of not less than $5 nor more than $100, or by imprisonment in the city jail not exceeding 60 days, or by both such fine and imprisonment.

SALT LAKE CITY, UTAH.

Board of Health and Employees of Health Department—Appointment and Salaries. (Ord. Mar. 13, 1916.)

SECTION 1. That sections 34, 35, and 40 of chapter 5 of the revised ordinances of Salt Lake City of 1913, relating to appointments and salaries in the board of health be, and the same are hereby, amended so as to read as follows:

SEC. 34. *Appointment, officers, members.*—The board of commissioners of Salt Lake City, Utah, may appoint a board of health consisting of the health commissioner, and first assistant health commissioner, each of whom shall be a graduate of a reputable medical college, two citizens of Salt Lake City, Utah, and the commissioner of public safety. The commissioner of public safety shall be ex officio chairman of the board of health, which is included in the department of public safety under the general direction of the commissioner of public safety.

SEC. 35. *Salaries.*—The compensation of each member of the board of health, exclusive of the commissioner of public safety, health commissioner, and assistant health commissioner, is hereby fixed at $5 for each meeting attended.

SEC. 40. *Appointments.*—The board of commissioners shall appoint all officers, assistants, and employees of the board of health and may employ the following

officers, assistants, and employees who shall receive annual salaries payable monthly, in the amounts as follows:

Health commissioner, $2,400.

First assistant health commissioner, $1,500.

Second assistant health commissioner, $1,500.

The health commissioner and assistant health commissioners shall each receive the sum of $25 per month for transportation and expenses.

Bacteriologist, $1,500.

Chief sanitary inspector, $1,500.

Chief veterinary inspector, $1,500.

Chief dairy inspector, $1,500.

Sealer of weights and measures and oil inspector, $1,500.

Chemist, $600.

Registrar of vital statistics, $1,200.

Twenty-two inspectors of the grades and at the salaries provided in section 41.

Ten nurses of the grades and at the salaries provided in section 41x.

Stenographer and copyist, $900.

Steward, emergency hospital, $900.

Janitor, emergency hospital, $900.

SEC. 2. That a new section is hereby added to chapter 5, revised ordinances of Salt Lake City, 1913, the same to be known as section 41x, and to read as follows:

SEC. 41x. The board of commissioners may appoint 10 nurses in said department of health, each of whom shall be a graduate of a reputable training school for nurses, who shall be divided into two grades as follows: First and second grades.

Nurses without previous experience in health department work shall be appointed to second grade only, and may, after service of one year, be promoted to the first grade.

Nurses of the first grade must have served at least one year in the second grade or two years or more in health-department service elsewhere, or possess special qualifications for health-department service to be determined by the board of health.

Nurses of the first grade shall receive a yearly salary of $1,080. Nurses of the second grade shall receive a yearly salary of $960.

All nurses of the health department shall be suitably uniformed and wear a badge sanctioned by the board of commissioners.

All nurses shall be included within the division of health and serve in the emergency hospital and the public schools under the direction of the health commissioner and his assistants.

SAN ANTONIO, TEX.

Communicable Diseases—Notification of Cases—Care of Patients. (Ord. Jan. 31, 1916.)

SECTION 1. *Definitions.*—The term contagious disease or diseases as hereinafter used shall be held to include the following diseases, to wit: Asiatic cholera, bubonic plague, typhus fever, yellow fever, leprosy, smallpox, scarlet fever, (scarlatina), diphtheria, (membraneous croup), and epidemic cerebrospinal meningitis: *Provided, however*, That this ordinance shall not be held to repeal or affect any other ordinance provision relating to any contagious disease, unless the same be in direct conflict herewith.

SEC. 2. *Physicians, notices, etc.*—Whenever it shall become known to any physician, or whenever any physician shall have reason to believe or suspect that any person residing or sojourning in this city is or may be suffering from any contagious disease, said physician shall immediately upon first visiting or seeing such person and discovering such conditions, advise the city health officer or the secretary of the city health department by telephone, stating the name and street address of the patient

and the diagnosis and circumstances of the case; and in addition to such advice by telephone, said physician shall incorporate the same information in a written notice, which he shall promptly and within 24 hours after discovering the indication of such contagious disease duly deposit in the United States mail addressed to the city health officer; and said attending physician shall also immediately place such patient under appropriate restrictions, as hereinafter and by law specified and required; and it shall be the duty of the head of any family when any member of such family shall have any symptoms indicating any contagious disease promptly to call a legally qualified practicing physician and to cause him to make an immediate medical examination of such afflicted person; and in case the head of any family shall be absent or fail or refuse for any reason whatsoever to call a physician and cause examination to be made as aforesaid, then it shall be the duty of each and every adult member of such family to notify the city health officer at once both personally or by telephone and also by letter or written notice, and the city health officer shall thereupon cause a proper medical examination to be made of such afflicted person.

SEC. 3. *Prescribed conditions.*—Every person in this city afflicted with any contagious disease, whether in any hospital, either public or private, or on private premises, shall be kept, cared for, and treated under the following conditions, to wit:

(1) *Room, etc.*—The room or apartment in which the patient shall be kept shall be clean and shall have sound and tight walls, roof, floor, windows, and doors; and shall have ample and suitable facilities for light and ventilation; and such room shall be so situated or arranged as to be completely shut off and isolated from members of the family or other persons not authorized by the health authorities to enter such room; and all furniture, bedding, and other things in such room shall be kept at all times in a clean and sanitary condition.

(2) *Physician.*—A legally qualified physician shall be in attendance on the patient, and shall make not less than one visit to said patient each day prior to convalescence.

(3) *Nursing.*—The patient shall be placed and remain at all times prior to convalescence in the care of a trained nurse, who shall be in constant attendance.

(4) *Food, drugs, etc.*—The patient must be regularly provided with proper and sufficient food, drugs, and medical supplies suited to the case.

(5) The enumeration of the foregoing conditions shall not be held to excuse the absence or neglect of any other requirements duly made by law, ordinance, or the health authorities.

SEC. 4. *Hospital treatment.*—Whenever it shall appear to the city health officer that any person in this city is afflicted with any contagious disease, and that such person is not being kept, cared for, or treated in compliance with the requirements of this ordinance, or any other requirements or restrictions imposed by law upon such person, or that such person neglects, fails, or refuses to observe and obey the provisions of this ordinance or any law for such cases made and provided, then and thereupon it shall be and become the duty of said city health officer, and he is hereby authorized and directed to proceed to remove, or cause to be removed, at once such afflicted person to the contagious diseases annex of the county and city hospital or to any other public hospital which may be established by ordinance of this city for the purpose of treating contagious diseases, where such afflicted person shall be kept, cared for, and treated under the direction of the health authorities and at public expense: *Provided, however,* That at the option of the patient he may be removed to any other hospital willing to receive the patient and in the opinion of the city health officer able and willing to provide the required isolation, care, and treatment: *And provided further,* That it is hereby made the duty of the chief of police of this city upon the request of the city health officer to provide such police assistance as may be required by said city health officer on enforcing the provisions of this ordinance.

SEC. 5. *General provisions.*—It shall be unlawful for any person afflicted with any contagious disease to be or remain in this city, or for any physician to treat any such

afflicted person, or for any person to keep, nurse, or care for any such afflicted person, unless notice of the presence of such contagious disease be given to the health authorities as herein and by law required, and also unless such afflicted person be kept, cared for, and treated under the conditions herein and by law prescribed; and the presence and treatment otherwise than as aforesaid of any person afflicted with a contagious disease is hereby prohibited and declared to be a public nuisance and a menace to the health of the city, which it shall be unlawful for any person to permit, maintain, or continue in any apartment or on any premises in this city owned or occupied or controlled by him.

SEC. 6. *Penalty clause.*—Any person who shall violate, or who shall fail or refuse to observe and comply with any provision of this ordinance shall be guilty of a misdemeanor, and upon conviction thereof shall be fined in a sum not less than $10 nor more than $200; and each day during which such violation, failure, or refusal shall continue shall be a separate and distinct offense.

SEC. 7. *Construction.*—The commissioners hereby declare that a public necessity exists for the regulations hereby enacted, and each and every provision, phrase, and word thereof would be enacted and is intended to stand, irrespective of any other provision, phrase, or word; and in the event any part or provision hereof, or any application thereof, shall for any reason be held to be void or unenforceable, such invalidity shall not be held to nullify any other part or provision of this ordinance or any other application of the same provision. The word person as used herein shall be deemed to include person, persons, firm, or corporation; and the singular shall include the plural, and vice versa; and the masculine the feminine.

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