PUBLIC HEALTH REPORTS

VOL. 32 FEBRUARY 9, 1917 No. 6

LAUNDRIES AND THE PUBLIC HEALTH.

A SANITARY STUDY INCLUDING BACTERIOLOGIC TESTS.[1]

By M. C. SCHROEDER and S. G. SOUTHERLAND, Bureau of Laboratories, Department of Health, New York City.

The purpose of this study was to ascertain the methods employed in New York City in laundering clothes, with especial inquiry into the efficacy of such methods in destroying pathogenic bacteria and thus preventing the spread of disease. The survey covered the following points:

1. Methods employed in handling clothes in the homes.
2. Methods employed in handling clothes in the homes of laundresses.
3. Methods employed in handling clothes in the hand laundries (white, Chinese).
4. Methods employed in handling clothes in the steam laundries.
5. Series of special tests of goods to note the effect of heat upon bacterial life.
6. A canvass of steam-laundry managers to ascertain their opinions concerning the use of nets in laundries.

PART I.—HAND LAUNDRIES.

Laundry cared for in homes.—As a rule, clothing washed in homes receives a good deal of care. The white clothes receive a preliminary soaking in soap solutions and a thorough washing and scalding or boiling, together with drying in the open air. The colored clothes are also carefully handled, and care is given to the ironing processes of both types of clothes. The danger, therefore, from infected linen under ordinary conditions is negligible.

Laundry cared for in homes of laundresses.—The methods employed in this type of washing vary according to the standards set by the individual. There are no rules governing the sanitary conditions in the homes, and there is no municipal supervision of any kind. The clothes from two or more families are frequently washed in the same water. The drying facilities usually consist of pulleys in the back yards or lines on roofs or lines strung in the kitchen or bedroom.

[1] These studies were taken up at the suggestion of the Public Health Committee of the Association for Improving the Condition of the Poor, and we had their cooperation in the early part of the work. We are also indebted to the Brooklyn Steam Laundrymen's Association for their aid in procuring valuable data and to Dr. W. H. Park for his supervision and suggestions.

The ironing is usually done with some care, and this tends to eliminate infectious material; but, owing to the close quarters in which the laundresses live, there is a possibility of a reinfection of the clean linen, if communicable diseases are present among the members of the laundress's family.

Laundry cared for in hand laundries.—Most of the clothes washed in New York City to-day pass through the so-called hand laundries, which number approximately 2,800. The laundries may be roughly divided into three groups:

Group 1. Laundries known as feeders for the steam laundries and maintained by them for receiving, sorting, marking, and distributing only.

Group 2. Laundries operated by private individuals who do some washing and practically all the drying and ironing on the premises.

Group 3. Laundries operated by private individuals practically doing on the premises all the washing and ironing for the patrons. This group comprises all of the Chinese laundries and a few of the smaller laundries.

Group 1. This type of laundry is usually in first-class sanitary shape. The premises are not used for living purposes and the business is conducted with due regard to sanitation.

Group 2. In this group we have data concerning 69 laundries.

The average hand laundry in New York City is simply a collecting and distributing station, where all kinds of clothes from all classes of people are received and handled.

Location.—These "hand laundries" are usually located in stores which are partitioned off either by full or dwarf partitions into various rooms used for the reception of clothes, washing and ironing, packing for distribution, eating, cooking, and sleeping.

The largest hand laundry in the Borough of Manhattan occupied 1,786 square feet of space, with 174 square feet of window light. It had no communicating living quarters and employed six workers.

The smallest laundry in Manhattan had 125 square feet of floor space with 56 square feet of window light, with one communicating living room. It contained two ironing benches and employed two workers. Drying was done indoors on lines strung below the ceiling.

In one laundry we found 459 square feet of space divided into three rooms by means of dwarf partitions. There were eight persons living in this laundry.

The laundries in Brooklyn on the average had larger and better quarters than those in Manhattan.

Of the 69 laundries controlled by white persons which were visited, 45 or 65.21 per cent had communicating living rooms. The number of living rooms attached varied from one to three and the number of persons living in these rooms varied from one to nine.

A number of laundries were operated by the members of the family living on the premises, children and adults working alike. In many cases, however, we found that help was hired and these additional persons must be remembered in forming an opinion concerning overcrowding.

In Table I a summary of occupancy is given.

TABLE 1.

One room.		Two rooms.		Three rooms.		Four rooms.	
Size of plant.	Number of persons.[1]	Size of plant.	Number of persons.[1]	Size of plant.	Number of persons.[1]	Size of plant.	Number of persons.[1]
Sq. ft.		*Sq. ft.*		*Sq. ft.*		*Sq. ft.*	
544	6	175½	2	187	3	225	5
392	6	210	2	212½	2	378	3
360	4	459	8	168¾	1	252	6
520	6	336	4	308	4	407	5
418	6	247½	4	216	9	212½	7
420	6	253	4	261	7		
252	6	212½	6	420	7		
260	2	392	5	198	5		
125	2	135	4	160	6		
233½	3	240	5	252	6		
713	4	210	4	243	6		
		240	5				
		180	6				
		162	4				
		180	4				
		156	1				
		330	5				
		308	2				
Av.... 385	4.7	245.9	4 1/16	238.7	5 1/17	294	5⅛

[1] Average number of persons living or working on the premises.

In considering this table we must bear in mind that most of the clothes sent to the steam laundries are returned "wet" to the hand laundries. The presence of large quantities of wet clothes in the process of drying adds materially to the crowded conditions. The dampness arising from the wet garments constitutes another possible injurious influence upon the health of the worker. Taken together, all of these factors result in a large number of instances in a condition of overcrowding which may be considered as dangerous to public health and, taken in conjunction with the fact that work for the general public is done in these places, forms a violation of the State factory law.

Methods employed in handling clothes.—A large number of statements have been gathered as to the close contact of soiled clothes and clean linen ready to be sent to the homes of the patrons, and of soiled clothes in contact with the wet clothes returned from the steam laundries. While no well-authenticated direct infection can be traced to these practices, it is not impossible that infection can and does take place.

The marking is done by hand, and it is stated on good authority that infection among workers has taken place from this cause.

Sorting.—As a rule the shirts and collars, bed and table linen, are bundled separately and then the rest of the clothes are placed in large netted bags, popularly known as "nets." These nets again are divided into three types—white, colored, flannels. In the lower-grade establishments the shirts, collars, and cuffs, and bed and table linen may be slipped into the center of a "net" in order to avoid paying the higher prices for this type of work. In the better-class establishments an effort is made to separate the white from the colored clothes and to place them in appropriate bags, but in the majority of places this care is not exercised and the "net" is not so divided. Consequently, anything from the finest white waists to dark overalls or socks may be found in the same receptacle marked white, colored, or flannels, as it may happen. These nets are *not opened* during the process of washing.

We examined 22 nets (10 white, 10 colored, 2 flannel), taken from 10 different laundries, and found the following interesting contents:

TABLE 2.

[Contents of white nets; total number of nets, 10.]

Collars in 4 nets.	Towels in 8 nets.
Shirts in 8 nets.	Bath towels in 2 nets.
Nightshirts in 2 nets.	Wash cloths in 3 nets.
Undershirts in 7 nets.	Waists in 3 nets.
Underdrawers in 10 nets.	Aprons in 4 nets.
Combination suits in 2 nets.	Chemises in 6 nets.
Pajamas in 2 nets.	Corset covers in 3 nets.
Handkerchiefs in 9 nets.	Drawers in 4 nets.
Hose of all kinds in 5 nets.	Nightdresses in 8 nets.
Pillowcases in 3 nets.	Skirts in 6 nets.
Tablecloths in 3 nets.	Lace curtains in 2 nets.
Napkins in 4 nets.	

[Contents of colored nets; total number of nets, 10.]

Shirts in 10 nets.	Bath mats in 1 net.
Nightshirts in 2 nets.	Aprons in 3 nets.
Undershirts in 9 nets.	Skirts in 1 net.
Underdrawers in 9 nets.	Waists in 4 nets.
Pajamas in 3 nets.	Lace curtains in 1 net.
Handkerchiefs in 2 nets.	Bath robes in 1 net.
Hose in 3 nets.	Dresses in 3 nets.
Neckties in 1 net.	Wrappers in 1 net.
Towels in 3 nets.	Overalls in 1 net.

[Contents of flannel nets; total number of nets, 2.]

White shirts in 2 nets.	Hose in 2 nets.
Undershirts in 2 nets.	Neckties in 1 net.
Underdrawers in 2 nets.	Aprons in 2 nets.
Combinations in 2 nets.	

The contents of a few of the "nets" were listed and showed as follows:

TABLE 3.—*Résumé of contents of nets.*

List of articles.	White nets.					Colored nets.		Flannels.	
	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.	No. 7.	No. 8.	No. 9.
Collars	1								
Shirts	2	4	3	1	9	2	11	13	2
Nightshirts			3		1				
Undershirts	8	4	6		8	1	5	5	11
Underdrawers	8	4	6	2	7	8	6	5	12
Combinations								1	2
Pajamas				1			1		
Handkerchiefs	13	2	17		19				
Hose	14			6	16		6	16	2
Neckties								1	
Pillowcases	2	4				1			
Tablecloths	3		1						
Napkins				7	4				
Towels	1	11	30		15	1	1		
Bath towels			15	11					
Piece muslin			1						
Wash cloth			1	7					
Waists	1				2	7	1		
Bath mat						1			
Aprons		2						2	3
Chemises	4			1	1				
Corset covers			2		2				
Drawers		3	4						
Nightdresses	2	1	4	3	1				
Skirts		2	6	1	4				
Lace curtains		2			1				
Doll's cap			1						
Guimpes			2						
Bath robe						1			
Dresses	3		7	1		4			
Wrappers						4			
Piece of lace			1						

Washing.—Of the 69 laundries forming the basis of this analysis, we found that 32, or 46.37 per cent, had absolutely no washing facilities on the premises. Of the 37 laundries which possessed such facilities, only 15 establishments washed clothes on the premises and that only to a limited extent. The entire group of 69 laundries were registered as sending their patrons' clothes to the steam laundries to be washed.

Drying clothes.—Upon completion of the washing process, most of the clothes are returned to the hand laundries wet.

The facilities for drying clothes indoors are most primitive—namely, lines strung below the ceilings or on racks run up on the side walls. The clothes are hung so closely on these lines that there is not sufficient opportunity for air, light, or heat to reach them effectively. These drying lines are placed in the store portion and also in the living quarters, and when all the lines are in use the entire place is so filled that it is difficult to pass through the rooms. Frequently a stooping attitude must be assumed to avoid contact with the wet garments hung overhead.

Ironing.—All flat work—i. e., sheets, pillowcases, bedspreads, towels, tablecloths, etc.—as a rule, is "finished" in the steam laundries. In some instances shirts, collars, and cuffs are also "finished." The only work done by the hand laundries on this class of goods is to sort out

and return the clothes belonging to the different patrons. All other garments are ironed by hand in the hand laundry.

In some establishments we found the store serving as laundry crowded with ironing benches and just enough room left to afford passage for a single person.

Summary covering hand laundries.—It will be seen from the foregoing data that the term "hand laundries," as understood by the general public, is a misnomer and that practically the only work done by hand is the receiving, marking, some ironing, and distributing.

If we then consider the facts just presented concerning the oftentimes crowded living quarters connected with the laundries and that cooking, eating, and sleeping are carried on in close proximity to clothing intended for intimate wear by the general public, and the probability of infectious diseases occurring among the persons living in such quarters without proper means of isolation, and thus possibly furthering their spread among the patrons of the laundry; the slack methods employed for sorting clothes, allowing the contact of clean and soiled linen; the packing of nets with a heterogeneous mass of clothes too varied in color and type to permit the steam laundries to apply the proper degree of heat or amount of disinfectants necessary for good work, and too closely packed to permit proper penetration of the wash water; the lack of proper facilities for sorting and drying the clean wet clothes received from the steam laundries; and, finally, the general insanitary conditions under which the work is carried on, it would seem that the hand laundries of the type inspected are to some degree a menace to the public health.

Chinese Hand Laundries.

There are about 1,200 Chinese laundries scattered throughout New York City. Forty-three of these were inspected. There was a better division of the premises in these laundries than in those maintained by white people, the front of the store being in all cases devoted to the reception of clothes, marking, sorting, and ironing, none of this work being done in the living quarters.

Division of space.—Eleven of the laundries had full partitions reaching to the ceiling and dividing the space, 8 had dwarf partitions, and 15 laundries had both full and dwarf partitions. The use of the dwarf partitions provided for better ventilation.

Ventilation.—The ventilation was good in 9 instances, fair in 8 instances, and poor in 25.

Lighting.—In 19 laundries there were good lighting facilities; 15 laundries had fair light; 8 laundries had poor light.

Condition of premises.—Eight of the laundries visited were clean, 12 were fair, 11 were poor. In the remaining 11 laundries no information was obtained on this point.

We found sleeping accommodations in 33, or 78 per cent, of the cases, and have reason to believe that they may be found in all Chinese laundries. The highest number of bunks in any one laundry was found to be four. The rear of the store was usually divided into two portions, one portion being devoted to the washing of the clothes and cooking. The other portion was, as a rule, inclosed by full partitions and served as a drying room.

All of the laundrymen admitted the cooking of food and its consumption on the premises.

Methods employed in handling clothes—Marking and sorting.—Soiled linen was usually received over a counter specially devoted to it and marked by hand. In no instance was soiled linen found in contact with clean linen. The sorting of clean linen is done on the ironing tables, which are always clean.

Washing.—All washing is done by hand on the premises, the clothes being laid upon a board and scrubbed with stiff brushes. A few cradle washing machines were found. In every laundry visited large copper boilers were in evidence, which, according to statements made to us, were used in boiling the white clothes. A few temperatures were taken of these boilers while in operation, and it was found that the temperature of the water varied from 180 to 210° F. The colored clothes and flannels are not boiled, being merely subjected to warm or hot water rinses.

Drying.—All the laundries visited had a drying room. The center of the room was occupied by a stove, usually red hot. Unfortunately the temperature of these rooms was not taken. The clothes were strung below the ceiling and along the side walls.

Dampening the clothes.—Three types of dampeners were found in use:

Type 1 was the ordinary large rubber bulb used by the florists for flowers.

Type 2 was a can supplied with two openings, spray and mouthpiece. The water in the can was forced out in the form of a spray by blowing into the mouthpiece.

Type 3 was simply a whisk broom used to sprinkle the clothes by whisking water over them.

Types 1 and 3 fulfilled their purpose admirably without infecting the clothes in any way, but were infrequently used. Type 2 was in evidence in every establishment visited and has in it the elements of danger when handled by a person having an infectious disease like tuberculosis, syphilis (mucous patches), diphtheria, etc., as infection might possibly take place. The can is used indiscriminately by the employees.

Upon completion of the ironing processes, the clean clothes are hung on lines to dry. When dry, they are gathered together on the large clean ironing tables, where they are sorted and wrapped. In no instance did we find clean and soiled linen in contact.

PART II.—STEAM LAUNDRIES.

The occasional reports concerning the suspected transmission of disease through the medium of the laundries and the lack of sufficient sanitary regulations concerning the methods employed in steam laundries led to this brief study of some of the problems involved.

The investigation covered practically all of the prominent steam laundries in New York City.

The bacteriological methods employed were:

1. The testing of the bactericidal strength of water plus the soap and disinfecting solutions and the possible mechanical elimination of large numbers of bacteria in the process of washing.

2. The testing of the penetrative power of the heat employed in washing.

3. The testing of the value of the ironing processes in the destruction of bacteria.

4. The testing of the bactericidal value of the drying processes.

The testing of the bactericidal strength and eliminative action of the water used in the cleansing processes was effected in three ways:

(*a*) By the addition of enormous numbers of *Bacillus coli* to the wash water and the taking of samples of the water for bacterial analysis at stated intervals throughout the process.

(*b*) By the routine bacteriological examination of a large number of wash waters taken throughout the various steps of the washing process.

(*c*) By the use of strips of cloth of various types which had been previously sterilized and soaked in horse serum to insure a viscous covering, and then inoculated with pure cultures of *Bacillus coli*, and placing these prepared strips in small laundry bags and washing them with the clothes.

Testing of the Penetrative Powe · of the Degree of Heat Employed.

To test this factor, small containers were devised. These consisted of pieces of rubber tubing one-fourth inch in diameter and about 5 inches in length. The ends were fitted with "no-air" rubber stoppers. When required for a test, the tubes, closed at one end, were sterilized by boiling for half an hour and then filled with a 24-hour culture of *Bacillus coli* in broth. The open end was then stoppered and both ends were capped with sterile capping skin. The tubes thus prepared were inclosed in towels, tied, and placed in the center of the washing wheel among the garments being washed. Maximum thermometers tied in a similar fashion were also used.

Testing the Bactericidal Value of the Ironing Processes.

This was accomplished by infecting various types of garments with cultures of coli bacilli and subjecting them to the action of the different forms of irons and presses used. (See ironing.)

Testing the Bactericidal Value of the Dry Houses and Drying Tumblers.

This was done in two ways—by hanging strips of infected material in the dry houses and then testing these strips bacteriologically, and by the use of maximum thermometers, which were so placed among the garments that they passed through the dry house simultaneously with the clothes, and thus registered the maximum degree of heat to which the clothes were subjected.

All of these tests were made at the various types of steam laundries and then the testing material was transported to the laboratory, where the bacteriological analysis was made, the samples being kept iced during transit. The culture media employed were plain agar for the quantitative count and Endo's medium and lactose neutral red fermentation tubes for the qualitative presumptive test for *B. coli*.

The incubation period of the plates was 48 hours at 37° C. of the fermentation tubes; three days at 37° C.

A special card for the collection of data concerning the washing processes was also prepared.

SANITARY SURVEY AND BACTERIOLOGICAL STUDIES.

There are approximately 125 steam laundries scattered throughout New York City exclusive of the laundries attached to institutions and hotels. They may be roughly classified into four groups:

Group 1. Laundries connected with infectious disease hospitals.

Group 2. Laundries which deal directly with families or individual patrons and in which the clothes are washed and finished.

Group 3. Laundries dealing indirectly with families or individual patrons through the medium of hand laundries.

Group 4. Wet wash laundries.

The methods employed in the infectious disease hospitals' laundries are distinctly different from those employed in an ordinary public laundry, and will, therefore, be described separately. Groups 2, 3, and 4 will be considered collectively.

Group 1. Management of Linen for Contagious-Disease Hospitals.

New York City possesses at present two laundry centers dealing with linen which is to a considerable extent known to be infected. These laundry centers are situated at the Kingston Avenue Hospital in Brooklyn and at the Riverside Hospital on North Brothers Island.

These laundries take care of all the soiled clothes from 59 milk stations; 15 eye and dental school clinics; 3 ambulance stations; 3 venereal disease clinics; 3 hospital plants containing 2,310 beds; and the Bureau of Laboratories. They handle approximately 11,900 pieces per day.

Owing to the infectious nature of the material handled the laundries are so arranged that a partition separates the sorting room from the

rest of the building and permits the loading of the washing wheels through chutes leading from the sorting room directly into the washers.

Sorting.—The sorting is done by workers who are attired in a special gown having long, loose, closed sleeves which cover the hands. The hair is covered with a cap. This uniform was adopted two years ago. Since then there has been no case of infection among the sorters.

Washing.—The washing is done in the regular compartment washers, which are fitted with thermometers registering the temperature of the water.

A summary has been prepared giving the types of clothes washed, the number of processes employed in washing, the length of time in minutes in which clothes were exposed to the action of steam, the total amount of time used in washing, and the manner in which the clothes were finished:

TABLE 4.—*Summary of methods of laundering clothes (contagious disease hospitals).*

Type of goods.	Number of processes employed in washing.	Time exposed to steam.	Total time used in washing.	How finished.
		Minutes.	*Minutes.*	
Bedclothes, bath towels	5	30	50	Mangle.
Clinic gowns	5	30	50	Do.
Uniforms, doctors', nurses'	5	60	90	Ironed by hand.
Table linen, napkins, waitresses' aprons	5	45	65–70	Ironed by hand and mangle.
Colored goods—maids' aprons, uniforms	4	45	60	Ironed by hand.
Overalls, jumpers, socks, visitors' gowns, covers, shirts.	4	[1] 10	25	Roughly, sent through dry house, 250° F.
Flannel blankets	4	[1] 15–20	25–30	In dry house.

[1] Hot water only; no steam.

All clothes were subjected to the action of high temperatures during the process of either washing or drying. A few of the temperatures used in the washing machines are shown in Table 5:

TABLE 5.—*Table showing temperatures.*

Number of the washing wheel.	Nature of goods washed.	Method of washing.	Process of washing when temperatures were taken.	Temperature.	Method of finishing.
				° *F.*	
1	Bed linen.	Loose...	Beginning of hot suds	165	Mangle.
2	...do...	...do...	End of hot suds	.....	Do.
3	...do...	...do...	First hot suds	100	Do.
4	Diapers...	...do...	Beginning of hot suds	180	Do.
5	...do...	...do...	End of hot suds	200	Do.
6	Pajamas..	...do...	Beginning of hot suds	175	Dry house (214° F.).
7	Underwear	...do...	End of hot suds	190	Do.

A review of the methods employed leads one conclusively to the belief that the destruction of pathogenic organisms was insured.

Analysis of Groups 2, 3, and 4.

As to the location and housing of laundries, the conditions varied greatly from the first-class laundry, properly housed and equipped in a most sanitary, efficient manner, to the wet-wash laundry, located in a subcellar and conducted under the most insanitary conditions. This irregularity of type also existed throughout in the methods employed for handling the clothes.

Collection of clothes.—As a rule, collections and deliveries are made by the same wagon, only the first-class laundries maintaining separate services. Some of the laundry wagons carry clean and soiled linen promiscuously, delivering clean linen and collecting soiled.

Receiving and sorting clothes.—In the average laundry the clothes packed in bundles or large nets were received either in the wash room or in the sorting room, where clean and soiled linen were in close proximity and handled in a more or less insanitary manner. Insanitary surroundings seemed particularly prevalent in the wet-wash laundries visited. In the better-class laundries, in which the clothes were finished and which dealt directly with families and individual patrons, we found receiving rooms partitioned off from the wash room either by railings or dwarf partitions. The sorting and marking of the linen is done on tables fitted either with stalls or box compartments over the table level or bags attached to the side. Some laundries sort directly into bins or trucks.

Clothes obviously infected with vermin, or known to have come from a house where an infectious disease is said to be present, or clothes excessively polluted are either refused and returned to the person sending them or else washed and handled separately in what is known as the "dirty-clothes washer." The watch for vermin-infected clothes is kept rather sharply, as these pests have been known to infect an entire laundry and cause severe financial loss.

Washing Methods.

Machinery employed in washing clothes.—The routine washing is done in regulation washing wheels or "washers," which vary in size from one measuring 32 by 36 inches to one measuring 42 by 96 inches.

The "washer" consists of a double cylinder made of wood, copper, or brass, so arranged as to furnish a double rotary motion, which subjects the clothes to an alternate squeeze and rinse or splash movement. The inner shell is perforated and permits the free access of water to the clothes during the washing process The interior of this shell is divided into one or more compartments by vertical and transverse partitions, by means of which different lots of clothes are held apart, though subjected to the action of the same wash water.

These partitions also serve to diminish friction. From 2 to 10 lots may be contained in the same washer.

Some of the washers are built so that the water enters into them either cold or lukewarm and is heated by means of steam to any desired temperature. This method is used in the disinfecting sterilizers and in many of the earlier machines.

A new system coming rapidly into use on account of its convenience and economy is that in which the water is heated in large combination tanks by means of brass coils containing superheated steam. The heated water is then piped directly to the washing machines as required. This latter method eliminates the separate steam connections necessary in earlier types of washing machines.

Methods employed in washing.—As a rule the processes employed vary according to the types of goods being washed, the amount of clothes in the washer, and the amount of soil upon the garments, which may require an increase or lessening of the amounts of washing material used. The personal standards of the foreman of the washmen are important factors also, as he is absolute in his domain.

In loose washing the clothes are handled practically as clothes at home are managed. This method is in use in first-class laundries which deal directly with families or individual patrons. We found that as a rule the white goods which were washed "loose" received a sufficient amount of disinfectants and heat to practically destroy pathogenic bacteria.

A brief summary of the methods employed in washing white goods "loose," together with the results obtained in testing the processes bacteriologically, is given in Table 6. This table is interesting, as it shows the effect of various processes, temperature, and time upon pathogenic bacteria in clothes. We have reason, however, to believe that this table does not represent the actual conditions usually employed by the laundrymen, but that their zeal to obtain a perfect score led them into washing overtime.

The effect of the heat exposure was tested by the use of the containers described on page 232. We found that even with the lowest temperature and shortest exposure tabulated the coli bacilli (which approximated 500,000,000 per c. c.) were invariably killed.

TABLE 6.—*White goods washed loose.*

Type of goods washed.	Number of processes employed; breakers, suds, rinses.	Total amount of time consumed.	Maximum temperature obtained.	Length of exposure to maximum temperature.	Bacteriological analysis. Water samples at end of first rinse. Bacteria per c. c. nutrient agar.	Water samples at end of first rinse. Bacteria B. coli group in c. c. l. n. r. f. t.[1]	Water samples at end of last hot suds. Bacteria per c. c. agar.	Water samples at end of last hot suds. Bacteria B. coli group in c. c. l. n. r. f. t.[1]	Broth culture in rubber tubes inserted containing 500,000,000 B. coli per c. c. Contents tested at end of process.
		Hrs. Min.	*° F.*	*Min.*				*c. c.*	
Family wash	11	45	181.9	20	6,730,000	+ in $\frac{1}{10,000}$	57	−1	Sterile.
Do	7	1 32	170.0	45	1,600,000	+ in $\frac{1}{10,000}$	150	−1	Do.
Do	6	1 35	167.0	30	9,000,000	+ in $\frac{1}{10,000}$	150	−1	Do.
Do	5	1 25	170.0	35	28,000,000	+ in $\frac{1}{10,000}$	350	−1	Do.
Flat goods	6	1 6	140.0	26	16,200,000	+ in $\frac{1}{100}$	70	−1	Do.
Do	6	1 10	158.0	40	374,000	+ in $\frac{1}{100,000}$	80	−1	Do.
Do	7	1 33	156.0	38	13,000,000	+ in $\frac{1}{100}$	150	−1	Do.
White goods	6	1 35	167.0	40	18,000,000	+ in $\frac{1}{10,000}$	30	−1	Do.
Do	5	55	170.0	25	90,000	+ in $\frac{1}{10,000}$	50	−1	Do.
White aprons	7	1 35	124.0	30	1,560,000	+ in $\frac{1}{10,000}$	100	−1	Do.
Aprons	7	1 50	124.0	8	1,500,000	+ in $\frac{1}{10,000}$	750	−1	Do.
Collars	10	1 50	151.0	16	300,000	+ in $\frac{1}{10,000}$	7,000	−1	Do.
Do	10	2 27	185.0	30	1,700,000	+ in $\frac{1}{10,000}$	.....	.....	Do.
White shirts	9	1 50	158.0	30	14,000,000	+ in $\frac{1}{10,000}$	600	.....	Do.
Do	8	1 10	149.0	23	259,000	+ in $\frac{1}{10}$	.....	.....	Do.
Towels	9	1 50	138.6	45	483,000	+ in $\frac{1}{10,000}$	200	.....	Do.

[1] Lactose neutral red fermentation tubes.

The material washed according to the "loose" method forms a comparatively small percentage of the clothes received by steam laundries. Fully 90 per cent of the clothes washed in the steam laundries of New York City are washed in "nets," and this presents a most serious problem.

Net washing.—"Nets" vary in size from 18 by 20 inches to 42 by 48 inches. They weigh from 10 to 35 pounds dry and 60 to 80 pounds wet. At present they are being used by the hand laundries in an unsuitable manner.

Thirty expert laundrymen and owners frankly stated that in their opinion the system of washing clothes in large, tightly packed nets is responsible for the following evils:

First. That the soapsuds employed are immediately "cut"[1] and lose their efficiency.

Second. That the water does not penetrate properly to the center of the nets in the time allotted to the washing process.

Third. That owing to the miscellaneous character of the contents of the nets it is impossible to treat them with a sufficient amount of disinfectants or heat to destroy the pathogenic bacteria and vermin.

In a series of tests made by us in laundries it was found that sugar and salt wrapped up in packages and placed in the center of tightly packed nets were only partially melted, and we have in some instances

[1] Term used by laundrymen to note the condition which results when an excessive amount of soil is brought into contact with soapsuds.

recovered over 50 per cent of this material unmelted after the nets had been washed the regulation period.

Washing colored clothes.—Colored clothes are washed in the same type of machine as the white clothes. One method is the cold process, where cold or lukewarm water is employed. The second or hot method approaches closely the method employed in washing white clothes.

The main points of difference are these: First, lower temperatures are used to prevent the fading of the clothes; second, fewer processes are employed.

Of the 80 laundries investigated where positive information could be obtained upon this latter point it was found that the number of processes used for colored clothes varied from two to eight. If only two processes were used, they consisted of a lukewarm suds followed by a cold rinse. If the clothes were treated with three or more processes, the additions usually consisted of a cold rinse and second hot suds, followed in the better-class laundries by an increased number of rinses. For example, in a place using five processes the method of procedure was as follows: 1, cold rinse; 2, hot suds; 3, hot rinse; 4, cold rinse; 5, cold rinse with blue.

The statistics gathered are grouped together in Table 7.

TABLE 7.—*Summary of methods employed in washing colored goods.*

COLORED GOODS WASHED LOOSE AND SUBJECTED TO INFLUENCE OF DRYING HOUSE OR TUMBLER.

Number of laundries.	Total number processes employed.	Average time consumed, all processes.	Details of processes—Average time.			Washing classified according to type—Method used.			
			Breaker process.	Suds.	Rinses.	Cold.	Lukewarm.	Warm.	Hot.
		Minutes.	*Minutes.*	*Minutes.*	*Minutes.*				
7	4	54	6	26	22	1	.....	5	1
8	5	71	12½	33	17.5	.....	1	2	5
2	6	70	7.5	17.5	40	.....	.....	1	1
4	7	66.5	10	37.5	26.5	.....	.....	.....	4
Total 21 (average)..	5.5	65.3	9	28.5	26.5	.....	.....	.....	.....

COLORED GOODS WASHED LOOSE AND RETURNED TO PATRONS WET.

3	3	33	1½	21.6	10	.....	2	1	.....
3	4	55	5	16.6	16.6	.....	1	2	.....
11	5	58	15	24	17.8	.....	3	5	3
2	6	87	12.5	45	32	.....	.....	1	1
Total 19 (average)..	4.5	58.21	8.2	26.8	19.4	.....	.....	.....	.....

COLORED GOODS WASHED IN NETS AND RETURNED TO HAND LAUNDRIES WET.

2	4	42.5	7½	17.5	12.5	.....	.....	2	.....
7	5	60.5	13.7	25.7	20.7	.....	.....	5	1
8	6	62.5	7.5	32.5	22.5	.....	.....	1	1
1	7	80	10	50	20	.....	.....	1	1
2	8	82.5	10	62.5	40	.....	.....	2	.....
Total 14 (average)..	6	65.6	9.7	37.6	23.1	.....	.....	.....	.....

These figures show that 40 of the steam laundries visited washed the colored goods according to the "loose" method. Of these 40 laundries, 21 laundries dried the clothes in the drying house or tumbler, where they were subjected to a temperature of at least 210° F. or over, and 19 of the laundries returned the goods to the patrons wet. Fourteen steam laundries washed the colored goods in nets and returned them to the patrons wet. There were thus 33, or 58.9 per cent of the laundries visited which returned the colored clothes to the patrons wet. It may therefore be stated that practically only 38.8 per cent of the colored goods were "safe" when considered from a bacteriological point of view.

The average number of processes employed in washing and the final disposal of the garments varied as follows:

TABLE 8.

Number of laundries.	Average number of processes.	Final disposal of goods.
21	5.5	Sent to dry house.
19	4.5	Sent out wet.
14	6.0	Do.

The average time consumed in washing was 65.3 minutes for clothes washed loose and sent to the "dry house" or "tumbler"; 58.2 minutes for clothes washed loose and sent out wet and 65.6 minutes for colored clothes washed in nets and sent to hand laundries wet.

Tests of Washing Machines.

As a great deal of stress is commonly laid upon the benefits derived in washing from the rotary motion of the washers, a series of tests was made to ascertain just how much movement took place when the "washers" were tightly packed with heavy nets. The testing nets were therefore marked and placed in the center and at each end of the "washer." It was ascertained that there was a very slight amount of lateral displacement in the end nets and no change of position in the center nets.

Study of Soaps, Bleaches, and Disinfectants Employed.

Using the methods employed by the United States Public Health Service, approximately 50 tests were made of the soaps, bleaches, and disinfectants used in washing. A study of the soap solutions used showed that they possessed no germicidal value in the strengths employed. In one instance we were able to isolate a staphylococcus from one of the strong soap solutions which is ordinarily 10 times as strong as the solution used in the washing machine.

In the study of the bleaches we found that the average bleach and disinfectant used required an average germicidal strength of at

least 1 per cent to prove effective in destroying *Bacillus coli* in 30 minutes. This percentage strength can not be used in the actual work for two reasons—one is the prohibitive cost, the other is the corrosive action upon the clothes. One of the large heavy and new canvas bags used in making certain washing tests, on its third trip through the "washer" showed the effect of the caustic solution improperly applied to the clothes in the large hole which suddenly appeared.

The Handling of Woolens.

To ascertain the methods used in washing woolen goods, information was obtained from 31 laundries. The data obtained in these places applies only to the better grades of woolen underwear, as fully 90 per cent of the ordinary underwear is washed in nets. In 13 of these laundries the flannels were washed individually by hand, and the time devoted to each garment varied according to its size and condition, the approximate time varying from 5 to 10 minutes per garment. An analysis of the figures obtained showed that 2 laundries used 2 processes; 8 laundries used 3 processes; 2 laundries used 4 processes; 1 laundry used 5 processes.

Eight of the laundries, or 61.5 per cent, dried the flannels in a "dry house." The drying house was, however, found in a number of instances where flannels were concerned to have a comparatively low temperature, 120° F., and bacteriological tests made during our investigation did not show any perceptible destruction of bacteria.

A review of the data obtained from 18 laundries where no hand washing was done is summarized as follows:

One laundry used 2 processes with an average of 20 minutes' washing time.

Five laundries used 3 processes with an average of 39 minutes' washing time.

Two laundries used 4 processes with an average of 50 minutes' washing time.

Six laundries used 5 processes with an average of 52 minutes' washing time.

Three laundries used 6 processes with an average of 37.5 minutes' washing time.

One laundry used 7 processes with an average of 80 minutes' washing time.

In this group 5, or 27.7 per cent, returned the flannels to the patrons wet; 4, or 22.2 per cent, dried them in the open air; and 9, or only 50 per cent, subjected them to temperatures high enough to destroy ordinary pathogenic bacteria.

If we remember the possibilities of the presence of infectious material upon flannels and that they are practically never subjected to

the same temperatures and methods employed for the average white wash, it can be readily seen that they offer a serious sanitary problem.

When the washing processes have been completed, the clothes, whether washed loose or in "nets," are placed in the "extractors." These machines are so constructed that the inner basket revolves at a high rate of speed, and the removal of the excess water in the garments takes place through centrifugal force.

Comparatively few of the garments cleansed in steam laundries are dried and ironed upon the premises. This is due to the fact that practically 90 per cent of the clothes are washed in nets. These nets are taken from the extractors and returned to the hand laundries wet and unopened.

In the so-called "wet-wash" laundries, which devote themselves exclusively to "family wash," the cleansing processes also terminate with the use of the extractors. In a number of the places visited the clothes were placed in a clean basket or bag and sent back to the patrons, thus giving a false sense of security through a belief in the efficiency of the laundry methods.

The foregoing data concerning the methods employed in washing nets, colored goods, and flannels, were submitted to a group of laundrymen, and they practically agreed that the time and temperature elements in the cases observed were somewhat higher than those usually employed by steam laundries. They stated that the average time limit was from 35 to 45 minutes and the average temperature varied from 90 to 110° F.

Experimental work.—To prove the efficiency of the washing processes when restricted as to time and temperature, but not limited in regard to soaps, bleaches, or water, a series of laboratory tests was arranged. The testing materials consisted of strips of half woolen and woolen goods, 6 by 9 inches. These strips were dipped into water containing *Bacillus coli* and approximating 8,120,000 bacteria per cubic centimeter. The prepared tests used in the earlier experiments were employed also and filled with *coli* broth which contained approximately 812,000,000 per cubic centimeter. The inoculated material and the tubes were wrapped in towels, tied, and placed among the clothes which were to be passed through the washing processes.

The machine was filled with small nets, weighing approximately 2 pounds each. The washing was then done as follows: 2 cold rinses, 5 minutes each; 1 hot suds, 10 minutes duration; total amount of time, 20 minutes.

The result of these experiments showed comparatively slight reduction of the bacteria in either the prepared tests or the broth tubes in the watery suspension.

A second series of experiments was worked out with an increased time limit (54 minutes for total processes and a temperature limit of 93.5° F.). This, as we had been assured by the laundrymen, represented the average temperature plus a slightly increased time limit employed for colored clothes and flannels. No bactericidal destruction took place.

A third series of experiments with the same time limit but at higher temperature was also tried. With nets averaging 25 pounds each and a temperature of 150° F. there was a reduction of 50 per cent in the number of bacteria present in the tests inclosed in the center of the nets.

These experiments show conclusively that the temperature and time limits employed were wholly inadequate to destroy bacteria of the pathogenic type.

Methods Employed in Finishing Goods.

Clothes finished in steam laundries are handled in one of three ways—roughly dried, mangled, ironed by hand or machine.

Rough dry or family wash.—In order to eliminate the evils of the nets and wet-wash systems, a number of the better-class laundries have begun to establish what is known as "rough dry," "pound," or "family wash."

This type of washing is taken from the "extractors" and sent through the drying houses or tumblers, where it is subjected to a high temperature, 210 to 250° F. A series of tests was made of a number of drying houses and tumblers to ascertain the exact temperatures and the results are given in Table 9.

TABLE 9.—*Time and temperature employed in laundries in the drying houses.*

Type of drier.	Type of clothes dried.	Time.	Maximum temperature.
		Minutes.	°*F.*
Metal lined, steam coils	Colored goods	10	210
	do	30	270
Metal lined, chain conveyors, steam coils	Colored shirts	30	275
	Collars	15	210
	Flannels	30	275
Metal lined, sliding racks, steam coils	do	30	210
	Colored shirts	50	212
Metal lined, metal sliding racks, steam coils	do	30	225
	do	20	225
Automatic chain drier, 34 minutes	Collars	45	200
	Colored shirts	55	180
	Flannels	55	180
Metal lined, iron sliding racks, steam coils	Bath towels	20	225
	do	30	225
Automatic chain drier, metal racks	Collars	20	270
	Flannels	30	268
Metal lined, steam coils	do	35	251
	Colored shirts	32	285
Metal lined, metal racks, steam coils	Blankets	40	212
	Colored goods	30	210
Galvanized iron, red-hot coal stove, copper wires across room	General wash	25	200
	do	20	200

The lowest temperature maintained in the dry rooms was 180° F.; the highest, 285° F.; and the average, 226.7° F. The shortest period of time employed in drying was 10 minutes at 210° F.; the longest period of time employed in drying was 55 minutes at 180° F. The average time employed was 29.5 minutes, 226.7° F.

Of the 22 temperatures tested, 20 maintained a temperature of 200° F. or over. This degree of heat, together with the steam arising from the wet garments, insures the destruction of all bacterial and animal life. The additional cost which this drying entails is comparatively slight, ranging from one-half to 2 cents per pound.

Methods Employed in Ironing Clothes.

Goods finished through use of mangle.—Mangles are simply large iron rollers so arranged as to offer a large heating and pressing surface. These presses are employed to iron knit underwear, sheets, pillowcases, bedspreads, towels, tablecloths, napkins, etc.

Strips of various types of material (cotton, cotton and wool, wool) were immersed in coli broth and sent through the mangles. As a result of these tests we found that if the mangles were properly heated and run at the right speed, one passage through the rollers was sufficient to destroy bacterial life upon cotton goods. The tests of the wools showed that it was necessary in some instances to send the tests through at least twice to insure the complete bactericidal effect of the heat. A few of the experiments are given in Table 10.

Ironing, hand.—A number of tests were made to ascertain the temperature of the hand irons. The result of the tests showed that the degree of heat requisite to insure the proper smoothness was sufficient to destroy bacterial life. The danger of hand ironing of clothes which have not been subjected to high temperatures during the washing or drying processes lies in the fact that double edges and seams, which may contain infectious material, are apt to be overlooked.

Machine ironing.—To ascertain the efficiency of machine ironing, articles of clothing soaked with *Bacillus coli* were ironed in the usual manner and then examined. The bacteriological analysis showed that the machines employed an effective degree of heat.

TABLE 10.—*Mangle test.*

Number of test.	Type of material used in test.	Number of times through mangle.	Time passing through rollers.	Bacteriological results.		
				Endo plates, bacteria per c. c.		Members of B. coli group in—
				Before test (approximately).	After test.	
			M. s.	*Per c. c.*		*C. c.*
1	Half wool	Once	80	500,000,000	Sterile	$-\frac{1}{10}$
2	do	do	40	500,000,000	do	−1
3	do	do	45	500,000,000	do	−1
4	do	Twice	70	500,000,000	do	−1
5	do	do	2 40	500,000,000	do	−1
6	do	3 times	4 50	500,000,000	do	−1
7	do	do	2 37	500,000,000	do	−1
8	do	do	1 36	500,000,000	do	−1
9	All wool	Once	1 20	500,000,000	do	−1
10	do	do	40	500,000,000	do	−1
11	do	do	45	500,000,000	do	−1
12	do	do	70	500,000,000	do	−1
13	do	Twice	2 40	500,000,000	do	−1
14	do	3 times	4 50	500,000,000	do	−1
15	do	do	2 37	500,000,000	do	−1
16	do	do	1 36	500,000,000	do	−1
17	Half wool[1]	Once	45	500,000,000	do	−1
18	do[1]	do	2 15	500,000,000	do	−1
19	do[1]	Twice	1 55	500,000,000	do	−1
20	do[1]	do	1 10	500,000,000	do	−1
21	do[1]	do	2 40	500,000,000	do	−0
22	do[1]	3 times	4 50	500,000,000	do	−1
23	do[1]	do	2 37	500,000,000	do	−1
24	do[1]	do	1 36	500,000,000	do	−1
25	All wool[1]	Once	45	500,000,000	do	−1
26	do[1]	do	2 15	500,000,000	do	−1
27	do	Twice	2 40	500,000,000	do	−1
28	do	do	1 10	500,000,000	do	−1
29	do	do	1 55	500,000,000	do	−1
30	do	3 times	4 50	500,000,000	do	−1
31	do	do	2 37	500,000,000	do	−1
32	do	do	1 36	500,000,000	do	−1
33	Half wool	Once	1 15	500,000,000	245	+1
34	do	Twice	2 30	500,000,000	1,576	+1
35	do	3 times	3 45	500,000,000	.....	−1
36	do	4 times	5	500,000,000	.....	−1
37	All wool	Once	1 15	500,000,000	1	−1
38	do	Twice	2 30	500,000,000	200–3,240	+1
39	do	3 times	3 45	500,000,000	25,000	+1
40	do	4 times	5	500,000,000	.....	+1

[1] Strip dipped in cottonseed oil before inoculation.

Since the collection of the foregoing data New York City has suffered from an epidemic of poliomyelitis (infantile paralysis), and it was thought worth while to ascertain if contagion had been conveyed through laundries. Fifty-five cases taken at random were investigated. It was found that the majority of the families did not send their laundry out of the homes. In a few instances it was ascertained that a number of the afflicted families had patronized the wet-wash laundries, but no direct contagion could be traced to them. The better class of steam laundries refused to handle the clothes which were known to have come from infected houses.

SUMMARY.

Hand Laundries.

1. The sanitary conditions existing in the average "hand laundry" managed by white persons are of a very low grade, falling far below those existing in Chinese laundries.

2. The State factory laws concerning living quarters are violated in both Chinese and hand laundries.

3. All clothes sent to the average Chinese laundries are washed and dried on the premises, in separate rooms maintained for this purpose.

4. The use of the "blow can" for dampening clothes is universal in Chinese laundries and may lead to infection.

5. The methods employed in the average "hand laundry" of marking and sorting the clothes are unsuitable and a possible source of danger to the health of the employees and community.

6. Very little washing is done in the average hand laundry. The practice now prevails of tightly packing a heterogeneous collection of soiled clothes into large bags or nets. These nets are then sent to the steam laundries, where they are washed as units and returned to the hand laundries wet.

7. The drying facilities employed in the hand laundries are limited and of a very primitive type. The process is not such as would secure the death of all the pathogenic germs which may have survived the washing process.

Steam Laundries.

8. The comparatively few steam laundries which use standard routine methods of washing and keep a record of the time, material, and solutions employed are getting better results than the average establishments.

9. The methods employed by steam laundries in the collection and delivery of clothes are found to be defective in many respects in a considerable proportion of the laundries. Soiled and clean clothes are carried on the same wagon and come into direct contact with each other. They are also frequently sorted in close proximity, as comparatively few establishments maintain separate receiving rooms where the clothes may be properly handled.

10. In the majority of laundries the clothes are washed under conditions prejudicial to the health of the employees, the "washers" being usually located in basements poorly lighted and ventilated, with defective floors, and without adequate provisions for the disposal of waste water and steam.

11. The method at present commonly employed by certain steam laundries of returning "wet" clothes to the patrons and to hand laundries is a possible menace to the public health.

12. Wet clothes infected with bacteria and subjected to the action of the usual degree of heat found in drying houses, tumblers, mangles, and hot presses are freed from living organisms.

13. The practice of "net washing" as now done in steam laundries is insanitary. The miscellaneous character of the contents of the nets prevents the proper application of disinfectants, soap, water, and heat, and thus permits the survival of vermin and pathogenic organisms. The size of the nets and the methods of tight packing employed prevent the penetration of water and heat in the allotted time.

14. Owing to the difficulty of ascertaining whether clothes have been properly heated during the washing processes and the possibility of the transmission of infection when not properly treated, all clothes washed in steam laundries should be dried upon the premises.

15. The absence in the average steam laundry of proper sorting rooms for the clean linen and the consequent contact with soiled linen may result in a possible reinfection of the clean clothes.

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.

State Reports for December, 1916.

Place.	New cases reported.
New York:	
Chenango County	1
Cortland County	1
Westchester County	1
New York City	10
Total	13
Ohio:	
Crawford County—	
Bucyrus	1
Cuyahoga County—	
Cleveland	2
Defiance County—	
Defiance	3
Gallia County	1
Hamilton County—	
Cincinnati	1
Madison County	1
Mahoning County	1
Ohio—Continued.	
Muskingum County	1
Summit County—	
Akron	2
Total	13
Virginia:	
Accomac County	1
Alleghany County	1
Floyd County	1
Henry County	1
Orange County	1
Page County	2
Powhatan County	1
Prince George County	1
Russell County	1
Wise County	1
Total	11

Arkansas Report for October, 1916.

During the month of October, 1916, one case of cerebrospinal meningitis was reported in Jackson County, Ark.

City Reports for Week Ended Jan. 20, 1917.

Place.	Cases.	Deaths.
Boston, Mass	2	3
Chicago, Ill		2
Cleveland, Ohio	1	
Detroit, Mich	2	
East Orange, N. J		1
El Paso, Tex	1	
Hartford, Conn	1	
Indianapolis, Ind	1	
Jackson, Mich	1	
Kansas City, Mo	2	1
New Bedford, Mass		1
New Britain, Conn		1
New York, N. Y	4	4
Omaha, Nebr		2
Orange, N. J	1	
Philadelphia, Pa	2	
Providence, R. I	1	
St. Louis, Mo	3	
St. Paul, Minn	1	1
Springfield, Ill		1
Winston-Salem, N. C		1

DIPHTHERIA.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 259.

ERYSIPELAS.

City Reports for Week Ended Jan. 20, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Ann Arbor, Mich	1		Newark, N. J	5	
Baltimore, Md		1	New Bedford, Mass		2
Boston, Mass		2	New Castle, Pa	1	
Bridgeport, Conn	1		New York, N. Y		9
Buffalo, N. Y	6		Niagara Falls, N. Y	1	
Chicago, Ill	35	3	Omaha, Nebr	2	
Cleveland, Ohio	5	1	Philadelphia, Pa	13	1
Denver, Colo	1		Pittsburgh, Pa	8	
Detroit, Mich	13	2	Portland, Oreg	1	1
Erie, Pa	1		Providence, R. I		1
Flint, Mich	2		Reading, Pa	1	
Hartford, Conn	3		Rochester, N. Y	2	
Jackson, Mich	2		St. Joseph, Mo	2	
Kalamazoo, Mich	2		St. Louis, Mo	9	3
Kansas City, Mo	1	1	St. Paul, Minn	2	2
Lancaster, Pa	2		San Francisco, Cal	10	
Lexington, Ky		1	Seattle, Wash	1	
Los Angeles, Cal	7	2	Springfield, Ill	1	
Lowell, Mass		1	York, Pa	1	
McKeesport, Pa	1		Zanesville, Ohio		1
Milwaukee, Wis	2				

LEPROSY.

City Report for Week Ended Jan. 20, 1917.

During the week ended January 20, 1917, one case of leprosy was reported in San Francisco, Cal.

MALARIA.

State Reports for December, 1916.

Place.	New cases reported.	Place.	New cases reported.
Ohio:		Virginia—Continued.	
Fairfield County	1	Mecklenburg County	1
		Middlesex County	10
Virginia:		Nansemond County	33
Accomac County	25	Nelson County	1
Albemarle County	3	New Kent County	2
Brunswick County	2	Northampton County	11
Buckingham County	1	Northumberland County	12
Campbell County	3	Nottoway County	2
Caroline County	9	Orange County	1
Charles City County	5	Pittsylvania County	11
Charlotte County	4	Powhatan County	8
Cumberland County	4	Prince Edward County	2
Essex County	3	Prince George County	18
Fairfax County	1	Princess Anne County	10
Gloucester County	5	Richmond County	2
Greensville County	34	Rockingham County	3
Halifax County	23	Southampton County	7
Hanover County	5	Spotsylvania County	1
Henrico County	2	Stafford County	1
Richmond	1	Surry County	11
Isle of Wight County	26	Sussex County	7
James City County	5	Warwick County	17
King and Queen County	4	Washington County	1
King William County	2	Westmoreland County	2
Louisa County	2	York County	22
Lunenburg County	8		
Mathews County	3	Total	376

MALARIA—Continued.

Arkansas Report for November, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Arkansas—Continued.	
Bradley County	5	Ouachita County	32
Calhoun County	10	Perry County	6
Carroll County	3	Phillips County	32
Dallas County	8	Polk County	10
Faulkner County	9	Pope County	38
Garland County	2	Pulaski County	4
Greene County	22	Scott County	10
Hempstead County	10	Sevier County	160
Hot Spring County	1	St. Francis County	28
Izard County	3	Union County	37
Jackson County	5	Washington County	1
Lafayette County	15	White County	6
Logan County	7		
Monroe County	5	Total	474
Newton County	5		

Arkansas Report for October, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Arkansas—Continued.	
Calhoun County	16	Perry County	4
Clay County	2	Phillips County	71
Dallas County	16	Pope County	45
Faulkner County	5	Pulaski County	6
Garland County	3	Saline County	100
Greene County	26	Scott County	16
Hempstead County	20	Sevier County	110
Izard County	11	St. Francis County	57
Jackson County	16	Stone County	4
Lafayette County	37	Union County	61
Logan County	21	Washington County	2
Mississippi County	7	White County	7
Monroe County	6		
Newton County	4	Total	673

City Report for Week Ended Jan. 20, 1917.

During the week ended January 20, 1917, one case of malaria was reported in New Orleans, La.

MEASLES.

Illinois—Cairo.

Senior Surg. Gassaway reported that during the week ended January 27, 1917, 26 cases of measles were notified in Cairo, Ill., and that the city health officer considered the disease to be epidemic in that city.

Kentucky—Louisville.

Passed Asst. Surg. Herring reported that during the month of January, 1917, 120 cases of measles were notified in Louisville, Ky. During the month of December, 1916, 56 cases were notified, while in November only 7 cases were notified.

MEASLES—Continued.

Washington—Seattle.

Surg. Lloyd reported that during the week ended January 20, 1917, 112 cases of measles were notified in Seattle, Wash., making a total of 5,951 cases of the disease reported since the beginning of the present outbreak, February 15, 1916.

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 259.

PELLAGRA.

Virginia Report for December, 1916.

Place.	New cases reported.	Place.	New cases reported.
Virginia:		Virginia—Continued.	
Augusta County	1	Powhatan County	1
Brunswick County	1	Princess Anne County	1
Cumberland County	1	Washington County	1
Dinwiddie County	3	Wise County	1
Halifax County	1	York County	1
James City County	1	Total	17
Lancaster County	2		
Mathews County	1		
Norfolk County—			
Portsmouth	1		

Arkansas Report for November, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Arkansas—Continued:	
Bradley County	1	Pulaski County	1
Drew County	7	Sevier County	1
Hempstead County	1	Union County	1
Jackson County	2	White County	4
Mississippi County	1	Total	25
Monroe County	1		
Pope County	5		

Arkansas Report for October, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Arkansas—Continued.	
Bradley County	3	Pope County	2
Drew County	11	Pulaski County	1
Hempstead County	1	Saline County	4
Hot Spring County	1	Stone County	2
Jackson County	1	Union County	4
Monroe County	2	Total	36
Perry County	1		
Phillips County	3		

City Reports for Week Ended Jan. 20, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Birmingham, Ala	.....	3	Kansas City, Kans	1	.....
Coffeyville, Kans	.....	1	Richmond, Va	.....	1

PNEUMONIA.

City Reports for Week Ended Jan. 20, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Ann Arbor, Mich	1	.....	Montclair, N. J	2	.....
Baltimore, Md	31	25	Morristown, N. J	5	1
Binghamton, N. Y	6	2	Newark, N. J	79	26
Braddock, Pa	3	.....	Newburyport, Mass	3	3
Chicago, Ill	370	162	New Castle, Pa	5	.....
Cincinnati, Ohio	2	13	Philadelphia, Pa	209	107
Cleveland, Ohio	51	33	Pittsburgh, Pa	59	50
Detroit, Mich	9	18	Reading, Pa	3	3
Dubuque, Iowa	3	3	Rochester, N. Y	12	2
Flint, Mich	8	1	Rockford, Ill	2	3
Grand Rapids, Mich	19	7	Sacramento, Cal	1	1
Harrison, N. J	1	.....	Saginaw, Mich	15	7
Jackson, Mich	1	1	St. Joseph, Mo	7	9
Johnstown, Pa	1	5	San Francisco, Cal	14	9
Kalamazoo, Mich	4	1	Schenectady, N. Y	12	1
Kansas City, Kans	1	.....	Steelton, Pa	4	.....
Kansas City, Mo	11	32	Toledo, Ohio	9	12
Lancaster, Pa	3	.....	Topeka, Kans	2	2
Lincoln, Nebr	2	2	Wichita, Kans	10	.....
Los Angeles, Cal	12	8	Wilkinsburg, Pa	1	2
McKeesport, Pa	1	5	York, Pa	3	.....
Manchester, N. H	6	6			

POLIOMYELITIS (INFANTILE PARALYSIS).

State Reports for December, 1916.

Place.	New cases reported.	Place.	New cases reported.
Indiana:		Ohio—Continued.	
Dekalb County	1	Mahoning County	1
Hamilton County	1	Washington County—	
Posey County	1	Marietta	1
Wabash County	1	Total	7
Wayne County	1		
Total	5	Oregon:	
		Clackamas County	1
New York:			
Albany County	1	Virginia:	
Columbia County	1	Accomac County	1
Delaware County	3	Amherst County	2
Herkimer County	1	Augusta County	1
Jefferson County	1	Bath County	1
Lewis County	2	Campbell County—	
Oneida County	2	Lynchburg	2
Onondaga County	2	Charlotte County	1
Oswego County	1	Clarke County	1
Rensselaer County	1	Hanover County	1
Tompkins County	1	Lunenburg County	1
Westchester County	3	Mecklenburg County	1
New York City	18	Powhatan County	1
Total	37	Scott County	1
		Total	14
North Dakota:			
Barnes County	1	Washington:	
		Pierce County—	
Ohio:		Sumner	1
Cuyahoga County—		Klickitat County—	
Cleveland	1	Goldendale	1
Franklin County	1	Total	2
Hamilton County—			
Cincinnati	2		
Norwood	1		

Oregon Report for November, 1916.

Place.	New cases reported.	Place.	New cases reported.
Oregon:		Oregon—Continued.	
Douglas County	2	Washington County	1
Multnomah County—		Total	4
Portland	1		

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

Arkansas Report for October, 1916.

During the month of October, 1916, one case of poliomyelitis was reported in Scott County, Ark.

City Reports for Week Ended Jan. 20, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Boston, Mass.	1	2	New York, N. Y.	3	4
Haverhill, Mass.	1	.....	San Francisco, Cal.	1	.....
Lincoln, Nebr.	1	1	Springfield, Mass.	.....	1
Los Angeles, Cal.	1	.....			

RABIES IN MAN.

Colorado—Denver—Case of Rabies in Spite of Pasteur Treatment.

Dr. S. R. McKelvey, secretary Colorado State Board of Health, has reported a death from rabies in Denver in a boy aged 14. The boy had been bitten on the hand by a rabid dog October 30, 1916. He was given the Pasteur antirabic treatment between November 5 and 25, 1916. The report states:

"This boy was a student in the high school and continued his studies without missing a single day in attendance until Friday, January 19. He did not attend school on account of not feeling very well but without special symptom, except a 'tingling' sensation which had been noticed in one arm during the previous three or four days. While the boy did not attend school on Friday, he remained cheerful and devoted some time to singing and playing on the piano. On Saturday, January 20, the family physician was called. The patient died on January 21, 1917, after having been in convulsions much of the time during the 24 hours preceding death.

"Three other persons were bitten by same dog and all took the treatment at same time."

Virginia Report for December, 1916.

During the month of December, 1916, one case of rabies in man was reported in Virginia.

RABIES IN ANIMALS.

City Reports for Week Ended Jan. 20, 1917.

During the week ended January 20, 1917, two cases of rabies in animals were reported in Detroit, Mich., and four cases in Niagara Falls, N. Y.

SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 259.

SMALLPOX.

Connecticut.

Collaborating Epidemiologist Black reported that during the week ended February 3, 1917, 19 new cases of smallpox were notified in Connecticut as follows: Greenwich 1, New London 2, Stonington 7, Torrington 1, Waterbury 8.

Minnesota.

Collaborating Epidemiologist Bracken reported that during the week ended February 3, 1917, five new foci of smallpox infection were reported in Minnesota, cases of the disease having been notified as follows: Goodhue County, Sumbrok 5; Morrison County, Randolph 10; St. Louis County, Eveleth 1; Swift County, Killdare Township 7; Wabasha County, Mazeppa 1.

Texas—Waco—Virulent Smallpox.

The city health officer of Waco, Tex., reported that during the period from January 14 to 29, 1917, 5 new cases of smallpox were notified at Waco, and that 6 deaths were registered during the same period, making a total of 112 cases, with 27 deaths, reported since April 1, 1916.

Ohio Report for December, 1916.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Ohio:						
Ashtabula County—						
Conneaut	6				5	1
Belmont County	3			1	2	
Clark County	5				3	2
Cuyahoga County	61			2	25	31
Darke County—						
Greenville	3				2	1
Defiance County—						
Defiance	1				1	
Erie County	1				1	
Hamilton County—						
Cincinnati	1				1	
Huron County	2				2	
Jefferson County	2					2
Lucas County—						
Toledo	8				1	7
Mahoning County	4			1		3
Miami County—						
Piqua	6				2	4
Pike County	1					1
Putnam County	1					1
Shelby County	2					2
Stark County	1					1
Trumbull County	97				27	70
Total	205			4	72	129

SMALLPOX—Continued.

Ohio Report for November, 1916 (Supplemental).

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Ohio:						
Cuyahoga County—						
Bedford Township	10	.....	.....	.....	10	.....
Trumbull County—						
Niles	84	.....	.....	1	69	14
Total	94	.....	.....	1	79	14

Miscellaneous State Reports.

Place.	Cases.	Deaths.
Arkansas (Nov. 1-30):		
Clay County	1	.....
Faulkner County	1	.....
Garland County	4	.....
Jackson County	1	.....
Mississippi County	4	.....
Pulaski County	2	.....
Scott County	2	.....
Sevier County	13	.....
Total	28	.....
Arkansas (Oct. 1-31):		
Garland County	1	.....
Jackson County	1	.....
Mississippi County	15	.....
Phillips County	1	.....
Total	18	.....
Indiana (Dec. 1-31):		
Clark County	9	.....
Floyd County	1	.....
Hamilton County	25	.....
Jay County	28	.....
Lake County	8	.....
Madison County	1	.....
Marion County	15	.....
Miami County	1	.....
Posey County	7	.....
Randolph County	2	.....
St. Joseph County	2	.....
Switzerland County	1	.....
Tippecanoe County	1	.....
Tipton County	31	.....
Vanderburgh County	11	.....
Vermilion County	2	.....
Vigo County	46	.....
Warren County	4	.....
Warrick County	2	.....
Wayne County	1	.....
Total	198	.....
North Dakota (Dec. 1-31):		
Billings County	6	.....
Cass County	2	.....
Foster County	5	.....
Griggs County	2	.....
North Dakota (Dec. 1-31)—Continued.		
Kidder County	3	.....
Morton County	16	.....
Nelson County	2	.....
Stutsman County	7	.....
Ward County	2	.....
Total	45	.....
Oregon (Dec. 1-31):		
Baker County	1	.....
Douglas County	1	.....
Marion County	1	.....
Multnomah County—		
Portland	28	.....
Total	31	.....
Oregon (Nov. 1-30):		
Douglas County	1	.....
Multnomah County—		
Portland	15	.....
Total	16	.....
Virginia (Dec. 1-31):		
Pittsylvania County	11	.....
Roanoke County—		
Roanoke	1	.....
Total	12	.....
Washington (Dec. 1-31):		
Chelan County	1	.....
Columbia County—		
Dayton	1	.....
Cowlitz County	1	.....
King County—		
Seattle	2	.....
Lewis County	1	.....
Centralia	6	.....
Toledo	4	.....
Spokane County—		
Hillyard	1	.....
Spokane	16	.....
Total	33	.....

SMALLPOX—Continued.

City Reports for Week Ended Jan. 20, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Ann Arbor, Mich	2		Milwuakee, Wis	1	
Butte, Mont	9		Minneapolis, Minn	24	
Chicago, Ill	3		Muscatine, Iowa	1	
Cleveland, Ohio	7		New Orleans, La	11	
Columbus, Ohio	1		Oklahoma City, Okla	3	
Danville, Ill	1		Omaha, Nebr	3	
Detroit, Mich	4		Portland, Oreg	6	
El Paso, Tex	4		St. Louis, Mo	5	
Evansville, Ind	15		St. Paul, Minn	1	
Flint, Mich	1		Sioux City, Iowa	10	
Indianapolis, Ind	3		Steelton, Pa	1	
Kalamazoo, Mich	1		Toledo, Ohio	5	
Kansas City, Kan	1		Topeka, Kans	1	
Kokomo, Ind	1		Wilmington, N. C	1	
Little Rock, Ark	3				

TETANUS.

City Reports for Week Ended Jan. 20, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Detroit, Mich		1	Pittsfield, Mass	1	
Fort Worth, Tex		1	Richmond, Va		1
Lexington, Ky		1	St. Louis, Mo		1
New Bedford, Mass	1		Trenton, N. J		1

TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 259.

TYPHOID FEVER.

State Reports for December, 1916.

Place.	New cases reported.	Place.	New cases reported.
Indiana:		Indiana—Continued.	
Allen County	1	Pike County	2
Blackford County	2	Randolph County	2
Brown County	3	Ripley County	1
Carroll County	2	Rush County	2
Cass County	2	Scott County	1
Daviess County	1	St. Joseph County	19
Decatur County	3	Sullivan County	4
Delaware County	4	Vanderburgh County	6
Floyd County	3	Vigo County	1
Gibson County	1	Washington County	1
Grant County	5	Wayne County	3
Hamilton County	4		
Hendricks County	3	Total	128
Howard County	4		
Huntington County	17	New York:	
Jay County	1	Albany County	23
Jennings County	1	Allegany County	5
Johnson County	5	Broome County	2
Kosciusko County	2	Cattaraugus County	2
Lake County	2	Cayuga County	1
Laporte County	2	Chautauqua County	3
Lawrence County	3	Chemung County	3
Marion County	10	Clinton County	2
Marshall County	1	Columbia County	3
Martin County	2	Delaware County	4
Newton County	1	Erie County	24
Orange County	1	Essex County	1

TYPHOID FEVER—Continued.

State Reports for December, 1916—Continued.

Place.	New cases reported.
New York—Continued.	
Fulton County	1
Greene County	1
Jefferson County	6
Livingston County	1
Monroe County	16
Niagara County	8
Oneida County	3
Onondaga County	3
Ontario County	3
Orange County	2
Orleans County	3
Oswego County	4
Putnam County	2
Rensselaer County	4
Rockland County	5
St. Lawrence County	2
Schuyler County	1
Seneca County	2
Steuben County	8
Tioga County	2
Ulster County	1
Warren County	2
Washington County	2
Wayne County	2
Westchester County	11
Yates County	3
New York City	90
Total	261
North Dakota:	
Cavalier County	1
Walsh County	4
Total	5
Ohio:	
Allen County—	
Lima	1
Ashland County	1
Athens County	1
Belmont County	8
Clark County	5
Clermont County	4
Columbiana County	1
Cuyahoga County	14
Crawford County	2
Darke County	4
Defiance County	2
Delaware County	1
Erie County—	
Sandusky	1
Franklin County—	
Columbus	3
Gallia County	4
Guernsey County—	
Cambridge	2
Hamilton County	7
Hancock County	1
Hardin County	1
Harrison County	3
Holmes County	1
Jefferson County	4
Lake County	1
Licking County	1
Lorain County	3
Lucas County—	
Toledo	13
Mahoning County	1
Marion County	1
Mercer County	3
Miami County	2
Monroe County	1
Montgomery County	1
Noble County	2
Ottawa County	1
Paulding County	4

Place.	New cases reported.
Ohio—Continued.	
Perry County	1
Ross County	2
Sandusky County	1
Scioto County	1
Stark County	6
Summit County	2
Trumbull County	3
Tuscarawas County	5
Union County	2
Warren County	1
Wayne County	5
Wyandot County	1
Total	135
Oregon:	
Multnomah County—	
Portland	6
Virginia:	
Accomac County	4
Alexandria County	4
Alexandria	1
Alleghany County	2
Amherst County	2
Augusta County	3
Bedford County	1
Campbell County—	
Lynchburg	3
Culpeper County	1
Cumberland County	1
Elizabeth City County	1
Essex County	1
Fluvanna County	1
Frederick County	2
Gloucester County	2
Halifax County	1
Hanover County	5
Henrico County—	
Richmond	3
Henry County	1
Isle of Wight County	2
James City County	1
King and Queen County	2
Lancaster County	1
Lee County	3
Madison County	1
Montgomery County	6
Nansemond County	2
Nelson County	1
New Kent County	1
Norfolk County—	
Portsmouth	8
Northampton County	1
Northumberland County	9
Orange County	1
Page County	2
Pittsylvania County	1
Danville	9
Pulaski County	1
Richmond County	1
Roanoke County—	
Roanoke	2
Russell County	3
Shenandoah County	7
Smyth County	7
Surry County	1
Tazewell County	11
Washington County	4
Westmoreland County	1
Wise County	6
Wythe County	3
York County	1
Total	138

TYPHOID FEVER—Continued.

State Reports for December, 1916—Continued.

Place.	New cases reported.	Place.	New cases reported.
Washington:		Washington—Continued.	
Chelan County	1	Pacific County—	
Wenatchee	2	Pasco	1
Clark County—		Skagit County—	
Camas	2	Sedro Woolley	1
Island County—		Spokane County—	
Langley	1	Spokane	1
King County	1	Whitman County—	
Seattle	7	Pullman	1
Lewis County	1	Yakima County	2
Chehalis	2	Total	23

State Reports for November, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Arkansas—Continued.	
Bradley County	2	Union County	3
Calhoun County	1	Washington County	3
Carroll County	2	White County	4
Dallas County	4		
Faulkner County	4	Total	85
Greene County	6		
Hempstead County	2	Oregon:	
Izard County	3	Clackamas County	3
Lawrence County	1	Clatsop County	1
Logan County	3	Malheur County	4
Phillips County	4	Marion County	1
Polk County	15	Multnomah County—	
Pope County	5	Portland	2
Pulaski County	2	Umatilla County	2
Scott County	1		
Sevier County	8	Total	13
St. Francis County	12		

Arkansas Report for October, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Arkansas—Continued.	
Bradley County	3	Perry County	1
Calhoun County	1	Polk County	5
Conway County	2	Pope County	6
Dallas County	2	Pulaski County	7
Faulkner County	1	Saline County	6
Garland County	4	Sevier County	12
Greene County	1	Sharp County	1
Hempstead County	2	St. Francis County	1
Hot Spring County	2	Stone County	2
Izard County	2	Union County	5
Jackson County	1	Washington County	19
Lafayette County	2	White County	15
Lawrence County	2	Woodruff County	3
Logan County	15		
Mississippi County	4	Total	129
Newton County	2		

TYPHOID FEVER—Continued.

City Reports for Week Ended Jan. 20, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Alameda, Cal	3		New Haven, Conn		1
Atlantic City, N. J	2		New Orleans, La	12	2
Baltimore, Md	7		Newton, Mass	2	
Bayonne, N. J	1		New York, N. Y	10	3
Beaver Falls, Pa	1		Niagara Falls, N. Y	1	
Berkeley, Cal	1		Norfolk, Va	1	
Binghamton, N. Y	1	1	Norristown, Pa	1	
Boston, Mass	1		Oakland, Cal	3	
Bridgeport, Conn		1	Philadelphia, Pa	4	
Buffalo, N. Y	6	1	Pittsburgh, Pa	1	1
Cairo, Ill		1	Portland, Me	1	
Cambridge, Mass	1		Portland, Oreg	1	1
Camden, N. J	1		Quincy, Ill		1
Chelsea, Mass	3		Richmond, Va	1	
Chicago, Ill	7		Sacramento, Cal		1
Cincinnati, Ohio	1		Saginaw, Mich		1
Cleveland, Ohio	3	1	St. Joseph, Mo	2	
Columbus, Ohio	3		St. Louis, Mo	1	1
Covington, Ky	1	1	Salt Lake City, Utah	1	1
Denver, Colo	3		San Diego, Cal	7	
Detroit, Mich	6		San Francisco, Cal	5	
Elizabeth, N. J	1		Schenectady, N. Y	1	1
Fall River, Mass	2		Seattle, Wash	6	
Fort Wayne, Ind	6		Sioux City, Iowa	2	
Grand Rapids, Mich	1		South Bend, Ind	2	
Hartford, Conn	1	1	Toledo, Ohio	4	
Indianapolis, Ind	1		Trenton, N. J	1	
Jersey City, N. J	1		Troy, N. Y		1
Lawrence, Mass	5	1	Washington, D. C	2	
Lexington, Ky	1		Watertown, N. Y	1	
Lincoln, Nebr	4		Wheeling, W. Va	1	
Los Angeles, Cal	3		Wichita, Kans	1	
Lynchburg, Va	1	1	Wilkinsburg, Pa	1	
McKeesport, Pa	1		Wilmington, Del	1	
Milwaukee, Wis	1		Wilmington, N. C	1	
Minneapolis, Minn	1		Winston-Salem, N. C	1	
Newark, N. J	1		Worcester, Mass	1	
New Castle, Pa	1		Zanesville, Ohio	1	

TYPHUS FEVER.

Texas—El Paso and Laredo.

Senior Surgeon Pierce reports for the week ended January 27, 1917, 3 new cases of typhus in El Paso and Laredo, making a total of 60 cases from July 1, 1916, to date.

During the week 32,624 persons were inspected. Of this number 3,331 were disinfected for destruction of vermin and 2,943 were vaccinated. Forty-nine were refused admission because of illness.

City Report for Week Ended Jan. 20, 1917.

During the week ended January 20, 1917, two cases with one death of typhus fever were reported in El Paso, Tex.

PREVENTABLE DISEASES.

Massachusetts Report for Week Ended Jan. 27, 1917.

	Cases reported.		Cases reported.
Cerebrospinal meningitis	2	Poliomyelitis (infantile paralysis)	3
Chicken pox	193	Scarlet fever	158
Diphtheria	178	Septic sore throat	5
German measles	10	Smallpox	1
Malaria	1	Tuberculosis (pulmonary)	179
Measles	404	Tuberculosis (other forms)	10
Mumps	235	Typhoid fever	13
Ophthalmia neonatorum	41	Whooping cough	93

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for December, 1916.

State.	Cases reported.			State.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.		Diphtheria.	Measles.	Scarlet fever.
Indiana	485	1,258	507	Oregon	21	349	102
New York	1,595	1,777	996	Virginia	286	1,544	182
North Dakota	25	250	27	Washington	63	2,549	97
Ohio	875	1,408	766				

State Reports for November, 1916.

During the month of November, 1916, 50 cases of diphtheria, 108 cases of measles, and 34 cases of scarlet fever were reported in Arkansas, and 27 cases of diphtheria, 143 cases of measles, and 144 cases of scarlet fever were reported in Oregon.

Arkansas Report for October, 1916.

During the month of October, 1916, 60 cases of diphtheria, 8 cases of measles, and 29 cases of scarlet fever were reported in Arkansas.

City Reports for Week Ended Jan. 20, 1917.

City.	Population as of July 1, 1916 (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	589,621	244	23	2	5	1	12	.....	47	35
Boston, Mass	756,476	294	73	3	110	.....	41	.....	41	28
Chicago, Ill	2,497,722	911	191	23	276	6	396	13	209	88
Cleveland, Ohio	674,073	231	39	3	66	.....	13	.....	21	17
Detroit, Mich	571,784	227	102	15	11	.....	98	3	21	9
Los Angeles, Cal	503,812	159	14	.....	47	.....	18	.....	72	24
New York, N. Y	5,602,841	1,916	221	27	218	8	126	.....	502	192
Philadelphia, Pa	1,709,518	693	67	9	17	.....	30	3	154	73
Pittsburgh, Pa	579,090	262	18	5	84	1	17	.....	24	27
St. Louis, Mo	757,309	287	83	7	116	.....	54	1	44	26
From 300,000 to 500,000 inhabitants:										
Buffalo, N. Y	468,558	173	32	4	4	.....	12	.....	30	20
Cincinnati, Ohio	410,476	149	34	1	3	.....	12	.....	22	15
Jersey City, N. J	306,345	116	11	1	1	.....	26	.....	18	12
Milwaukee, Wis	436,535	133	22	4	15	1	80	.....	19	6
Minneapolis, Minn	363,454	.....	24	.....	5	.....	27	.....	.....	.....
Newark, N. J	408,894	144	24	.....	9	.....	18	.....	46	20
New Orleans, La	371,747	.....	18	.....	1,062	4	1	.....	38	20
San Francisco, Cal	463,516	146	36	3	99	.....	27	.....	31	13
Seattle, Wash	348,639	57	1	.....	112	.....	4	.....	16	7
Washington, D. C	363,980	143	15	1	12	.....	15	.....	25	11
From 200,000 to 300,000 inhabitants:										
Columbus, Ohio	214,878	71	5	1	94	1	8	.....	7	8
Denver, Colo	260,800	75	5	.....	101	.....	5	.....	.....	15
Indianapolis, Ind	271,708	.....	20	.....	16	.....	11	.....	3	.....
Kansas City, Mo	297,847	107	8	1	2	.....	45	1	18	14
Portland, Oreg	295,463	47	1	.....	102	1	28	.....	5	3
Providence, R. I	254,960	107	13	1	3	.....	6	1	.....	12
Rochester, N. Y	256,417	77	7	.....	4	.....	25	.....	3	5
St. Paul, Minn	247,232	72	11	1	14	.....	13	.....	15	10

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

City Reports for Week Ended Jan. 20, 1917—Continued.

City.	Population as of July 1, 1916 (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 100,000 to 200,000 inhabitants:										
Birmingham, Ala.	181,762	63	6	3	26	.....	.....	.....	4	2
Bridgeport, Conn.	121,579	53	12	2	13	.....	9	.....	5	7
Cambridge, Mass.	112,981	38	16	.....	18	.....	8	.....	7	2
Camden, N. J.	106,233	.....	3	.....	.....	.....	6	.....	2	.....
Fall River, Mass.	128,366	52	2	1	58	2	1	.....	14	7
Fort Worth, Tex.	104,562	28	.....	.....	.....	.....	.....	.....	.....	3
Grand Rapids, Mich.	128,291	52	.....	.....	27	.....	22	.....	7	4
Hartford, Conn.	110,900	67	4	1	1	.....	7	.....	4	1
Lawrence, Mass.	100,560	43	3	1	1	.....	.....	.....	4	4
Lowell, Mass.	113,245	43	5	1	20	.....	2	.....	8	3
Lynn, Mass.	102,425	21	4	1	2	.....	4	.....	3	2
Nashville, Tenn.	117,057	29	1	.....	116	.....	.....	.....	3	2
New Bedford, Mass.	118,158	43	2	.....	14	.....	5	.....	14	1
New Haven, Conn.	149,685	.....	8	.....	14	.....	.....	.....	3	2
Oakland, Cal.	198,604	.....	2	.....	10	.....	5	.....	5	2
Omaha, Nebr.	165,470	47	3	.....	1	.....	11	1	1	5
Reading, Pa.	109,381	36	1	.....	.....	.....	4	.....	1	1
Richmond, Va.	156,687	87	6	.....	15	.....	8	.....	.....	8
Salt Lake City, Utah.	117,399	34	2	1	149	1	14	1	.....	1
Springfield, Mass.	105,942	47	14	1	.....	.....	3	1	5	1
Syracuse, N. Y.	155,624	63	4	.....	3	.....	18	1	4	5
Tacoma, Wash.	112,770	.....	2	.....	29	.....	4	.....	.....	.....
Toledo, Ohio.	191,554	85	7	1	5	.....	64	1	16	11
Trenton, N. J.	111,593	39	4	1	.....	.....	.....	.....	5	1
Worcester, Mass.	163,314	57	5	1	.....	1	9	.....	1	4
From 50,000 to 100,000 inhabitants:										
Atlantic City, N. J.	57,660	16	.....	.....	31	.....	.....	.....	8	.....
Bayonne, N. J.	69,893	.....	2	.....	.....	.....	3	.....	.....	.....
Berkeley, Cal.	57,653	9	1	.....	6	.....	2	.....	.....	.....
Binghamton, N. Y.	53,973	.....	20	.....	16	.....	2	.....	4	1
Brockton, Mass.	67,449	24	.....	.....	.....	.....	1	.....	1	.....
Canton, Ohio	60,852	12	2	.....	.....	.....	2	.....	.....	.....
Charleston, S. C.	60,734	24	5	.....	.....	.....	3	.....	.....	3
Covington, Ky.	57,144	27	.....	.....	.....	.....	1	.....	2	4
Duluth, Minn.	94,495	.....	.....	.....	6	.....	2	.....	4	.....
Elizabeth, N. J.	86,690	23	5	2	1	.....	9	.....	7	1
El Paso, Tex.	63,705	52	2	.....	7	.....	4	.....	.....	9
Erie, Pa.	75,195	.....	2	.....	4	.....	.....	.....	3	33
Evansville, Ind.	76,078	22	3	.....	4	.....	1	1	.....	3
Flint, Mich.	54,772	21	6	.....	2	.....	5	1	5	.....
Ft. Wayne, Ind.	76,183	18	5	.....	1	.....	2	.....	1	.....
Harrisburg, Pa.	72,015	28	7	1	3	.....	.....	.....	11	3
Hoboken, N. J.	77,214	27	2	1	1	.....	15	.....	6	3
Johnstown, Pa.	68,529	.....	.....	.....	3	.....	2	.....	.....	1
Kansas City, Kans.	99,437	.....	3	.....	1	.....	6	.....	4	.....
Lancaster, Pa.	50,853	.....	.....	.....	3	.....	1	.....	1	.....
Little Rock, Ark.	57,343	21	.....	.....	4	.....	.....	.....	.....	.....
Malden, Mass.	51,155	13	3	1	2	.....	2	.....	2	.....
Manchester, N. H.	78,283	30	2	.....	4	.....	.....	.....	1	1
Mobile, Ala.	58,221	20	.....	.....	.....	.....	.....	.....	.....	4
New Britain, Conn.	53,794	.....	.....	.....	.....	.....	.....	.....	.....	2
Norfolk, Va.	89,612	6	.....	.....	2	.....	1	.....	.....	4
Oklahoma City, Okla.	92,943	19	1	.....	65	.....	5	.....	2	3
Passaic, N. J.	71,744	19	1	.....	1	.....	2	.....	2	3
Pawtucket, R. I.	59,411	25	5	.....	.....	.....	.....	.....	.....	2
Portland, Me.	63,867	24	1	.....	1	.....	.....	.....	.....	2
Rockford, Ill.	55,185	11	1	.....	2	.....	1	.....	2	1
Sacramento, Cal.	66,895	26	.....	.....	1	.....	2	.....	6	4
Saginaw, Mich.	55,642	18	3	.....	.....	.....	11	.....	1	1
St. Joseph, Mo.	85,236	39	8	.....	3	.....	7	.....	5	6
San Diego, Cal.	53,330	20	1	.....	1	.....	3	.....	1	2
Schenectady, N. Y.	99,519	29	3	.....	37	.....	.....	.....	7	4
Sioux City, Iowa.	57,078	.....	2	.....	.....	.....	.....	.....	.....	.....
Somerville, Mass.	87,039	32	5	.....	19	.....	1	.....	5	1
South Bend, Ind.	68,946	15	.....	.....	2	.....	9	2	.....	1
Springfield, Ill.	61,120	27	7	1	6	.....	4	.....	.....	1
Troy, N. Y.	77,916	.....	1	1	37	.....	4	.....	8	4
Wichita, Kans.	70,722	.....	6	1	2	.....	.....	.....	4	1
Wilkes Barre, Pa.	76,776	17	9	3	.....	.....	1	.....	3	.....
Wilmington, Del.	94,265	40	3	.....	1	.....	1	.....	6	.....
York, Pa.	51,656	.....	.....	.....	1	.....	2	.....	4	.....

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

City Reports for Week Ended Jan. 20, 1917—Continued.

City.	Population as of July 1, 1916 (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:										
Alameda, Cal.	27,732	13			2		5			
Auburn, N. Y.	37,385	12	1				3		2	1
Austin, Tex.	34,814	18	1							
Bellingham, Wash.	32,985	4			20					
Brookline, Mass.	32,730	11	2		2		2		1	2
Butler, Pa.	27,632	7					2			1
Butte, Mont.	43,425	29	2		12		1			4
Chelsea, Mass.	46,192	15	4		1				7	
Chicopee, Mass.	29,319	5	2				5		2	
Cumberland, Md.	26,074	5			1				1	
Danville, Ill.	32,261	10			2		1			
Davenport, Iowa.	48,811						2			
Dubuque, Iowa.	39,873		1		20				1	1
East Chicago, Ind.	28,743		1				1			
East Orange, N. J.	42,458	16	1		2		8			1
Elgin, Ill.	28,203	9			35		3			2
Everett, Mass.	39,233	10	4		4		2			
Everett, Wash.	35,486	3			46					
Fitchburg, Mass.	41,781	19	7		1				2	2
Galveston, Tex.	41,863	18	1	1			1		1	2
Haverhill, Mass.	48,477		4	1	6		1		2	
Jackson, Mich.	35,363	12	3		6		3			
Kalamazoo, Mich.	48,886	10			3		5		2	1
Kenosha, Wis.	31,576	9								
Kingston, N. Y.	26,771	12								1
Knoxville, Tenn.	38,676				52					
La Crosse, Wis.	31,677	16	3							
Lexington, Ky.	41,097	21	1	1	5				2	
Lima, Ohio.	35,384	11	2	1	1		2			1
Lincoln, Nebr.	46,515	19	4		2		3			1
Long Beach, Cal.	27,587	17					2		1	
Lorain, Ohio.	36,964						4			
Lynchburg, Va.	32,940	15			16		1		5	5
Madison, Wis.	30,699	4			1		8		1	1
McKeesport, Pa.	47,521	17	5	1			2			
Medford, Mass.	26,234	11			17		3		3	1
Montclair, N. J.	26,318	8					1			
Newburgh, N. Y.	29,603	13	1				1		2	
New Castle, Pa.	41,133				3		2			
Newport, Ky.	31,927	12					1		3	3
Newport, R. I.	30,108	11	1	1			1			
Newton, Mass.	43,715	14	1		18		1			
Niagara Falls, N. Y.	37,353	16	2		7		1		5	2
Norristown, Pa.	31,401	18	5	2					2	1
Ogden, Utah.	31,404	11			120		4			
Orange, N. J.	33,080	13	2		1				2	2
Pasadena, Cal.	46,450	12			1				7	5
Perth Amboy, N. J.	41,185		4				1			
Pittsfield, Mass.	38,629	19			1				3	1
Portsmouth, Va.	39,651	13	1		7		4	1		
Quincy, Ill.	36,798	14			1					
Quincy, Mass.	38,136	9							1	
Racine, Wis.	46,486	16	1				1			1
Roanoke, Va.	43,284	9	3		21				1	1
Steubenville, Ohio.	27,445	12								
Superior, Wis.	46,226	5	3		2					
Taunton, Mass.	36,283	15	2						2	1
Topeka, Kans.	48,726	23	4		66					3
Waltham, Mass.	30,570	9	1		3		2			2
Watertown, N. Y.	29,894	13			2					
West Hoboken, N. J.	43,139	9					3			
Wheeling, W. Va.	43,377	24	2	1	3				1	1
Williamsport, Pa.	33,809						1			2
Wilmington, N. C.	29,892	7								
Winston-Salem, N. C.	31,155	18	1		73		5		3	3
Zanesville, Ohio.	30,863	10					1			

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

City Reports for Week Ended Jan. 20, 1917—Continued.

City.	Population as of July 1, 1916 (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 10,000 to 25,000 inhabitants:										
Ann Arbor, Mich	15,010	11			1		3		3	
Braddock, Pa	21,685		1						1	
Cairo, Ill	15,794	5			2					
Clinton, Mass	[1] 13,075	4								
Coffeyville, Kans	17,548		1							
Concord, N. H	22,669	12			3					1
Galesburg, Ill	24,276	5	1							
Harrison, N. J	16,950		1						1	
Kearny, N. J	23,539	8	1							
Kokomo, Ind	20,930	8	2		23		1		1	1
Long Branch, N. J	15,395						1		1	
Marinette, Wis	[1] 14,610	6	1		7					
Morristown, N. J	13,284	6					1		1	
Muscatine, Iowa	17,500				77					
Nanticoke, Pa	23,126	7	1						2	
Newburyport, Mass	15,243	7			2		2		1	
North Adams, Mass	[1] 22,019	11					1			
Northampton, Mass	19,926	8			2		1		3	
Plainfield, N. J	23,805						2		1	
Rocky Mount, N. C	12,067	3	1		44					
Rutland, Vt	14,831	7			5		2			
Sandusky, Ohio	20,193				2					
Saratoga Springs, N. Y	13,821	8	1				1		1	1
Steelton, Pa	15,548	2							3	
Wilkinsburg, Pa	23,228	7	2				1			
Woburn, Mass	15,969	6								

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

FOREIGN.

CUBA.

Examination of Rats—Habana.

During the period from December 24, 1915, to December 27, 1916, 23,345 rats were examined at Habana. No plague infection was found.

Malaria—Habana.

The table given below shows the number of cases of malaria notified in the city of Habana, during the six months ended December 31, 1916.

Month.	Cases.	Deaths.	Month.	Cases.	Deaths.
July, 1916	7	2	November, 1916	72	2
August, 1916	16	2	December, 1916	147	2
September, 1916	10	.....			
October, 1916	36	2	Total	288	10

GREAT BRITAIN.

Examination of Rats—Liverpool.

During the two weeks ended January 13, 1917, 339 rats were examined at Liverpool. No plague infection was found. The last plague-infected rat at Liverpool was reported found during the month of October, 1916.

VENEZUELA.

Mortality, Month of April, 1916.

During the month of April, 1916, 4,356 deaths were reported in the Republic of Venezuela. Of these, 148 were due to infantile tetanus, 473 to malaria, and 148 to typhoid fever.

Tetanus, 1905–1915.

Mortality from tetanus has been reported in Venezuela as follows:

Year.	Total deaths from all causes.	Deaths from tetanus neonatorum (infantile tetanus).	Deaths from all forms of tetanus except puerperal.	Year.	Total deaths from all causes.	Deaths from tetanus neonatorum (infantile tetanus).	Deaths from all forms of tetanus except puerperal.
1905	58,100	.....	3,316	1911	55,428	3,474	4,505
1906	52,949	.....	3,485	1912	65,729	2,824	3,794
1907	52,140	.....	3,713	1913	52,847	2,743	3,662
1908	56,203	.....	4,360	1914	51,697	2,816	3,691
1909	53,364	2,782	3,942	1915	63,133	2,804	3,699
1910	55,436	3,574	4,721				

Rat Destruction, November, 1916.

During the month of November, 1916, 1,163 rats were destroyed in Venezuela. The work of rat destruction was carried on at six localities, including La Guaira, with 105 rats destroyed; Puerto Cabello, with 150 rats; and Maracay, with 725 rats.

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

Reports Received During the Week Ended Feb. 9, 1917.[1]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Dec. 17-23	2	2	
Calcutta	Dec. 3-9	9	.....	
Madras	Dec. 10-16	3	.....	
Rangoon	Dec. 3-16	1	3	
Philippine Islands:				
Manila	Dec. 10-16	18	12	Not previously reported: Cases, 25.
Do	Dec. 17-23	3	4	
Provinces	.....	.....	.....	Dec. 17-23, 1916: Cases, 149; deaths, 101.
Albay	Dec. 17-23	8	6	
Bataan	.....do	2	2	
Bohol	.....do	1	.....	
Bulacan	.....do	10	6	
Capiz	.....do	6	6	
Cavite	.....do	17	6	
Iloilo	.....do	31	28	
Leyte	.....do	44	31	
Masbate	.....do	8	2	
Misamis	.....do	12	7	
Pampanga	.....do	6	5	
Rizal	.....do	3	.....	
Sorsogon	.....do	1	2	

PLAGUE.

Brazil:				
Bahia	Nov. 26-Dec. 2	2	2	
Ceylon:				
Colombo	Dec. 3-9	7	6	
Egypt	.....	.....	.....	Jan. 1-Dec. 30, 1916: Cases, 1,702; deaths, 828.
Alexandria	Dec. 25	1	1	
India	.....	.....	.....	Nov. 26-Dec. 2, 1916: Cases, 10,706; deaths, 8,028. Dec. 3-9, 1916: Cases, 12,471; deaths, 8,857.
Bassein	Nov. 26-Dec. 2	.....	1	
Bombay	Dec. 10-23	22	18	
Karachi	Dec. 17-23	1	1	
Madras	Dec. 10-16	1	1	
Madras Presidency	.....do	812	547	
Moulmein	Dec. 3-9	.....	1	
Prome	Nov. 26-Dec. 9	.....	44	
Rangoon	Dec. 3-16	9	8	
Toungoo	Dec. 3-9	.....	1	

SMALLPOX.

Brazil:				
Bahia	Nov. 26-Dec. 2	1	.....	
Rio de Janeiro	Dec. 10-30	18	6	
India:				
Bombay	Dec. 10-23	3	.....	
Madras	Dec. 10-16	6	1	
Rangoon	Dec. 10-16	4	.....	
Mexico:				
Mexico City	Dec. 24-30	8	.....	
Do	Dec. 31-Jan. 6	6	.....	
Russia:				
Moscow	Nov. 13-25	35	8	

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

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

Reports Received During the Week Ended Feb. 9, 1917—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Spain:				
Cadiz	Nov. 1-30	.....	2	
Straits Settlements:				
Penang	Nov. 26-Dec. 2	2	2	
Singapore	Dec. 3-9	1	.....	
Tunisia:				
Tunis	Dec. 30-Jan. 5	8	4	
Turkey in Asia:				
Trebizond	Dec. 10-16	.....	1	

TYPHUS FEVER.

Austria-Hungary:				
Austria—				
Vienna	Dec. 17-23	4	.....	
Egypt:				
Alexandria	Dec. 17-23	4	2	
Greece:				
Saloniki	Nov. 21-Dec. 4	10	.....	
Mexico:				
Ciudad Juarez	.....	.....	.....	July, 1916-Feb. 5, 1917: Cases, 100 (estimated.
Mexico City	Dec. 24-Jan. 6	349	.....	
Netherlands:				
Rotterdam	Dec. 23-30	2	.....	
Russia:				
Moscow	Nov. 13-25	12	3	

YELLOW FEVER.

Gold Coast	.....	.....	.....	In 1915: Cases, 2; deaths, 2. European and native.

Reports Received from Dec. 30, 1916, to Feb. 2, 1917.

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Nov. 5-Dec. 9	11	10	
Calcutta	Oct. 15-Nov. 25	.....	43	
Madras	Nov. 5-11	2	.....	
Rangoon	Nov. 26-Dec. 2	1	.....	
Indo-China	.....	.....	.....	June 1-July 31, 1916: Cases, 3,578; deaths, 2,578.
Provinces—				
Anam	June 1-July 31	904	691	
Cambodia	.....do	8	6	
Cochin-China	.....do	231	144	
Kouang-Tcheou-Wan	July 1-31	83	62	
Laos	June 1-July 31	433	417	
Tonkin	June 1-30	1,276	775	
Japan:				
Fukuoka	Jan. 19	33	.....	
Nagasaki	Nov. 27-Dec. 3	9	4	
Osaka	Nov. 16-Dec. 5	8	11	Aug. 13-Dec. 5, 1916: Cases, 966; deaths, 625.
Do	Jan. 6-16	9	.....	
Taiwan Island—				
Keelung	Nov. 13-Dec. 9	5	4	
Taihoku	.....do	13	3	
Yokohama	Nov. 6-Dec. 3	5	3	
Districts	.....do	1	1	
Java:				
West Java	.....	.....	.....	Nov. 17-30, 1916: Cases, 16; deaths, 11.
Batavia	Nov. 17-30	1	1	

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

Reports Received from Dec. 30, 1916, to Feb. 2, 1917—Continued.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands:				
Manila	Oct. 29-Dec. 9	177	52	Not previously reported: Cases, 19; deaths, 2.
Provinces				Oct. 29-Dec. 9, 1916: Cases, 3,191; deaths, 2,030.
Albay	Oct. 29-Dec. 9	246	147	
Antique	Nov. 18-25	8	7	
Bataan	Oct. 29-Dec. 9	93	77	
Batangas	Oct. 29-Nov. 18	1	1	
Bohol	Oct. 29-Dec 9	46	18	
Bulacan	do	96	67	
Camarines	do	61	37	
Capiz	do	45	34	
Cavite	do	156	113	
Iloilo	do	237	148	
Laguna	Nov. 5-25	12	10	
Leyte	Oct. 29-Dec. 9	127	98	
Misamis	do	126	79	
Negros Occidental	Oct. 29-Dec. 9	910	553	
Pampanga	Dec. 3-9	4	3	
Rizal	Oct. 29-Dec. 9	27	14	
Samar	Nov. 5-18	13	10	
Sorsogon	Oct. 29-Dec. 2	131	71	
Tayabas	Nov. 5-18	1	1	
Zambales	Oct. 29-Dec. 2	7	1	
Straits Settlements:				
Singapore	Oct. 22-28	2	2	
Turkey in Asia	Sept. 22-Nov. 3	189	81	
Turkey in Europe:				
Constantinople	Oct. 1-29	6	1	

PLAGUE.

Brazil:				
Bahia	Nov. 5-25	11	7	Jan. 1-Nov. 11, 1916: Cases, 14; deaths, 7. Nov. 5-11: Cases, 4; deaths, 2.
Joazeiro				June 1-Nov. 6, 1916: Cases, 67; deaths, 51.
Ceylon:				
Colombo	Oct. 28-Dec. 2	17	9	July 23-29, 1916: Cases, 9; deaths, 8.
China:				
Amoy, vicinity	Nov. 19-Dec. 2			Present.
Kansu Province—				
Taochow	Oct. 1-24		20	Pneumonic. Reported present in other localities in Province.
Ecuador				Sept. 1-Nov. 30, 1916: Cases, 156; deaths, 57.
Duran	Oct. 1-31	1		
Guayaquil	Sept. 1-30	21	7	
Do	Oct. 1-31	43	12	
Do	Nov. 1-30	88	35	
Milagro	do	1		
Nobol	Oct. 1-31	1	1	
Santa Rosa	Sept. 1-30	1	1	
Egypt				Jan. 1-Dec. 21, 1916: Cases, 1,701; deaths, 827.
Alexandria	Nov. 12-25	3	2	1 case on s. s. Proton, arrived Nov. 16, 1916, from Sidi Barand and Sollum.
Port Said	Dec. 11	1		
India				Oct. 15-Nov. 25, 1916: Cases, 39,800; deaths, 30,261.
Bassein	Oct. 22-Nov. 25		2	
Bombay	Nov. 5-Dec. 9	42	31	Oct. 8-14, 1916: Cases, 13; deaths, 7. Received out of date. Original report lost on s. s. Arabia.
Karachi	Oct. 29-Nov. 25	2	1	
Madras	Nov. 19-Dec. 11	5	2	Oct. 8-14, 1916: Cases, 1; deaths, 1.
Madras Presidency	Nov. 5-Dec. 11	3,191	2,130	Oct. 8-14, 1916: Cases, 534; deaths, 353. Sept. 17-23, 1916: Cases, 429; deaths, 280.
Mandalay	Oct. 28-Nov. 18		2	
Prome	Oct. 22-Nov. 25		52	
Rangoon	Oct. 28-Dec. 2	18	16	Oct. 1-7, 1916: Cases, 9; deaths, 9.
Toungoo	Oct. 22-Nov. 25		9	

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

Reports Received from Dec. 30, 1916, to Feb. 2, 1917—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Indo-China				June 1-July 31, 1916: Cases, 168, deaths, 104.
Provinces—				
Anam	June 1-July 31	44	29	
Cambodia	do	35	33	
Cochin-China	do	62	36	
Kouang-Tcheou-Wan	July 1-31	27	6	
Saigon	Nov. 6-19	3	1	
Japan:				
Yokkaichi	Nov. 12-Dec. 9	9	4	
Java:				
East Java—				
Djocja Residency	Nov. 4-17	1	1	
Kediri Residency	Aug. 26-Sept. 22	12	10	
Pasoerocan Residency	do	2	2	
Surabaya Residency	Nov. 4-17	13	13	Surabaya City, Nov. 4-17, 1916: Cases, 5; deaths, 5.
Surakarta Residency	do	6	6	
Mid-Java—				
Samarang	do	1	1	
Siam:				
Bangkok	Oct. 22-Nov. 18	4	3	
Straits Settlements:				
Singapore	do	5	5	
Union of South Africa:				
Cape of Good Hope State—				
Uitenhage district	Oct. 31-Nov. 12	2	2	Total, Oct. 23-Nov. 12, 1916: Cases, 24; deaths, 13.

SMALLPOX.

Austria-Hungary:				
Austria—				
Vienna	Nov. 12-Dec. 9	8	1	
Hungary—				
Budapest	Nov. 5-Dec. 9	69	1	
Brazil:				
Bahia	Nov. 12-18	3		
Rio de Janeiro	Nov. 12-Dec. 9	32	6	
China:				
Amoy	Oct. 31-Dec. 9			Present.
Chungking	Oct. 28-Dec. 9			Do.
Dairen	Nov. 5-Dec. 26	48	8	
Foochow	Oct. 29-Dec. 16			Do.
Harbin	Nov. 6-12	1		
Hongkong	Oct. 28-Dec. 9	105	71	
Mukden	Dec. 9-23			Do.
Nanking	Nov. 12-25			Do.
Tsingtao	Dec. 1-9	3		
Cuba:				
Casa Blanca	Jan. 12	1		Vicinity of Habana. Case landed Jan. 1, 1917, from s. s. Alphonso XII, from Santander, Spain.
Encrucijada	Jan. 10	1		In Santa Clara Province. Case landed from s. s. Montevideo from Barcelona, via Las Palmas, Canary Islands, and Porto Rico; arrived at Habana Jan. 6, 1917.
Guanabacoa	Jan. 9	1		Vicinity of Habana. Case landed from s. s. Montevideo.
Habana	Jan. 10-20	2		At Mariel quarantine station. From s. s. Montevideo.
Ecuador:				
Guayaquil	Nov. 1-30	10	1	
Egypt:				
Cairo	June 11-July 1	50	20	
Do	July 2-Aug. 19	50	17	
Port Said	June 11-17	1	1	
France:				
Marseille	Oct. 1-Nov. 30		14	

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

Reports Received from Dec. 30, 1916, to Feb. 2, 1917—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Hawaii:				
Honolulu	Jan. 9	1		From s. s. Tenyo Maru from Oriental ports.
Do	Jan. 21	1		From s. s. Ecuador from Hongkong.
India:				
Bombay	Oct. 8–14	3	3	Received out of date. Original report lost on s. s. Arabia.
Calcutta	Nov. 5–11		1	
Madras	Nov. 5–Dec. 11	16	7	
Moulmein	Oct. 28–Nov. 4		4	
Rangoon	Oct. 28–Dec. 2	10	1	
Indo-China				June 1–July 31, 1916: cases, 111; deaths, 35.
Provinces—				
Anam	June 1–July 31	14	6	
Cambodia	do	21	7	
Cochin-China	do	48	16	
Tonkin	do	28	6	
Saigon	Nov. 6–Dec. 10	26	6	
Japan:				
Kobe	Dec. 4–10	1	1	
Java:				
East Java				Sept. 16–Nov. 10, 1916: Cases, 21; deaths, 1.
Surabaya	Nov. 4–10	1		
Mid-Java				Sept. 16–Nov. 17, 1916: Cases, 51; deaths, 3.
Samarang	Nov. 4–10	3		
West Java				Sept. 29–Nov. 30, 1916: Cases, 206; deaths, 32.
Batavia	Sept. 29–Nov. 30	16	2	
Mexico:				
Mexico City	Dec. 10–23	12		
Nuevo Laredo	do	1		
Portugal:				
Lisbon	Nov. 19–Dec. 2	6		
Portuguese East Africa:				
Lourenco Marques	Sept. 1–30		1	
Russia:				
Moscow	Oct. 16–Dec. 18	43	12	
Archangel	Nov. 25–Dec. 8	5		
Petrograd	Oct. 8–Nov. 25	95	31	
Spain:				
Madrid	Nov. 1–30		91	
Seville	do		22	
Valencia	Nov. 19–Dec. 23	5	1	
Straits Settlements:				
Penang	Oct. 28–Nov. 18	5		
Singapore	Nov. 19–25	1	1	
Tunisia:				
Tunis	Nov. 25–Dec. 15	51	27	
Turkey in Asia:				
Trebizond	Nov. 11–18	1		
Union of South Africa:				
Johannesburg	Sept. 10–Nov. 28	25		

TYPHUS FEVER.

Argentina:				
Rosario	Nov. 1–30		1	
Austria-Hungary:				
Austria—				
Vienna	Nov. 5–Dec. 9	11	1	
Hungary—				
Budapest	do	1		
Belgium:				
Ghent	Oct. 29–Nov. 4		1	
Liege	do		1	
China:				
Antung	Nov. 27–Dec. 10	6		
Hankow	Nov. 12–18	1		
Tientsin	Oct. 29–Nov. 4	1		
Cuba:				
Santiago	Dec. 7–13	1	1	

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

Reports Received from Dec. 30, 1916, to Feb. 2, 1917—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Egypt:				
Alexandria	Nov. 12-Dec. 26	19	9	Nov. 19-25, 1916: 1 case.
Cairo	June 11-July 1	275	142	
Do	July 2-Aug. 19	211	111	
Port Said	June 11-17	20	9	
Do	July 2-Aug. 19	5	5	
Germany:				
Berlin	Oct. 15-Dec. 9	.....	5	
Bremen	Oct. 22-Nov. 18	1	2	
Frankfort-on-Main	Nov. 12-18	.....	1	
Königsberg	Nov. 12-Dec. 23	5	5	
Nuremberg	Oct. 29-Nov. 11	3	.....	
Great Britain:				
Glasgow	Dec. 3-30	4	.....	
Greece:				
Saloniki	Nov. 7-20	.....	11	
Java:				
East Java	.....	.....	.....	Sept. 16-22, 1916: Cases, 2.
Mid-Java	.....	.....	.....	Sept. 16-Nov. 10, 1916: Cases, 21;
Samarang	Nov. 4-10	7	.....	deaths, 2.
West Java	.....	.....	.....	Sept. 29-Nov. 30, 1916: Cases, 53;
Batavia	Sept. 29-Nov. 30	44	3	deaths, 3.
Mexico:				
Aguascalientes	Dec. 22	.....	.....	Epidemic.
Durango	Dec. 12	.....	.....	Present.
Mexico City	Dec. 3-23	658	.....	
Nuevo Laredo	Dec. 10-16	4	.....	July 1-Dec. 16, 1916: Cases, 23.
Netherlands:				
Rotterdam	Nov. 26-Dec. 2	6	.....	
Russia:				
Moscow	Oct. 16-Nov. 18	43	1	
Archangel	Nov. 25-Dec. 8	10	4	
Petrograd	Oct. 8-Dec. 2	139	42	
Spain:				
Madrid	Nov. 1-30	.....	2	
Sweden:				
Stockholm	Nov. 23-Dec. 4	1	.....	
Switzerland:				
Zurich	Dec. 3-9	1	.....	
Tunisia:				
Tunis	Dec. 16-22	1	.....	
Turkey in Asia:				
Haifa	Oct. 16-22	1	.....	

YELLOW FEVER.

Brazil:				
Victoria	Jan. 27	.....	.....	Present.
Ecuador:				
Babahoyo	Nov. 1-30	1	1	
Chobo	....do	1	.....	
Duran	Oct. 1-31	1	.....	
Guayaquil	Sept. 1-30	17	5	
Do	Oct. 1-31	15	12	
Do	Nov. 1-30	6	3	
Milagro	Sept. 1-30	1	.....	
	Oct. 1-31	2	1	

×