PUBLIC HEALTH REPORTS

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PLAGUE-ERADICATIVE WORK.

Detailed statements of plague-eradicative work being carried on in the United States and insular possessions will be found on pages 2526 to 2530 of this issue of the Public Health Reports.

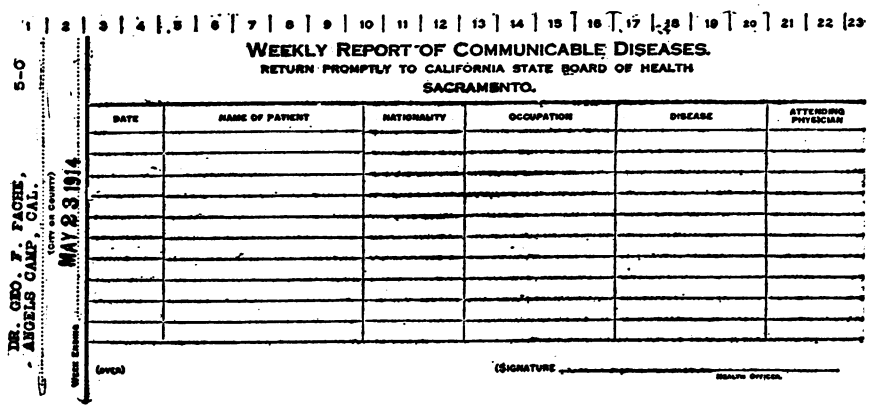
Later telegraphic advices from New Orleans state that 3 additional human cases have been notified and 36 additional plague-infected rats have been found, making the total number of human cases notified since the beginning of the outbreak 28, and the number of plague rats found 128.

MORBIDITY REPORTS.

METHOD OF SECURING AND RECORDING IN CALIFORNIA.

[From the California State Department of Health.]

California requires a weekly report of cases of communicable disease from the 290 health officers in the State, 58 of whom are county health officers, reporting for that portion of the county lying outside of incorporated cities, the remaining 232, who are city health officers, reporting for the territory lying within the corporate limits.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5-0

WEEKLY REPORT OF COMMUNICABLE DISEASES.

RETURN PROMPTLY TO CALIFORNIA STATE BOARD OF HEALTH

SACRAMENTO.

DATE	NAME OF PATIENT	NATIONALITY	OCCUPATION	DISEASE	ATTENDING PHYSICIAN

DR. GEO. F. FACHE, ANGELS CAMP, CAL.

MAY 2 3 1914

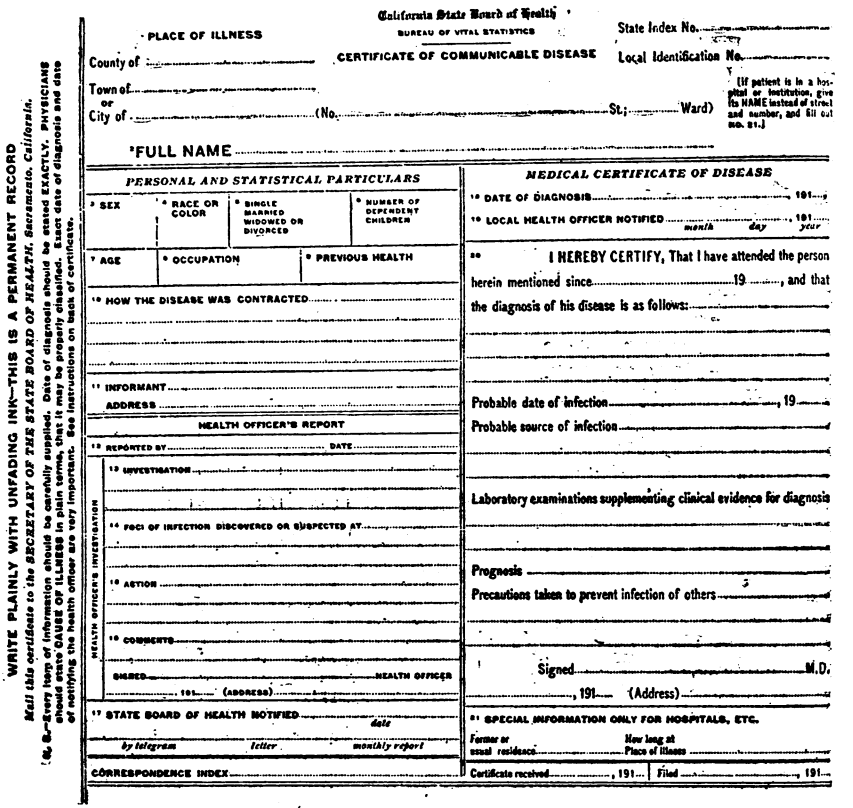
(SIGNATURE

FIG. 1.—Blank used for the weekly report made by city and county health officers to the State department of health.

In order to facilitate reporting, blank forms and addressed return envelopes are forwarded to the health officer at the beginning of each month, together with circular letters and printed information for the use of the health officer. Although the report blanks are forwarded monthly, a weekly report is required from the health officer. These

report blanks are addressed by means of an addressing machine, a different-colored blank being used for each week. By using different colors of paper the work of assembling the reports by weeks is simplified.

The California laws require the reporting of 32 different communicable diseases, a misdemeanor penalty being imposed for failure to report. In case any health officer neglects to forward a weekly report a postal card calling his attention to the matter is sent to him. In nearly all cases this brings an immediate response. Most of the health


MARGIN RESERVED FOR BINDING

WRITE PLAINLY WITH UNFADING INK—THIS IS A PERMANENT RECORD

Mail this certificate to the SECRETARY OF THE STATE BOARD OF HEALTH, Sacramento, California.

No. 8.—Every item of information should be carefully supplied. Date of diagnosis should be stated EXACTLY. PHYSICIANS should state CAUSE OF ILLNESS in plain terms, that it may be properly classified. Exact date of diagnosis and date of notifying the health officer are very important. See instructions on back of certificate.

California State Board of Health
BUREAU OF VITAL STATISTICS
CERTIFICATE OF COMMUNICABLE DISEASE

PLACE OF ILLNESS
County of
Town of
or
City of (No. St.; Ward)

State Index No.
Local Identification No.
(If patient is in a hospital or institution, give its NAME instead of street and number, and fill out no. 21.)

*FULL NAME

PERSONAL AND STATISTICAL PARTICULARS

* SEX | * RACE OR COLOR | * SINGLE MARRIED WIDOWED OR DIVORCED | * NUMBER OF DEPENDENT CHILDREN
* AGE | * OCCUPATION | * PREVIOUS HEALTH
* HOW THE DISEASE WAS CONTRACTED
* INFORMANT
ADDRESS

HEALTH OFFICER'S REPORT
* REPORTED BY DATE
HEALTH OFFICER'S INVESTIGATION
* INVESTIGATION
* FOCI OF INFECTION DISCOVERED OR SUSPECTED AT
* ACTION
* COMMENTS
SIGNED HEALTH OFFICER
191 (ADDRESS)
* STATE BOARD OF HEALTH NOTIFIED date
by telegram letter monthly report
CORRESPONDENCE INDEX

MEDICAL CERTIFICATE OF DISEASE
* DATE OF DIAGNOSIS 191
* LOCAL HEALTH OFFICER NOTIFIED month day 191 year
20 I HEREBY CERTIFY, That I have attended the person herein mentioned since 19, and that the diagnosis of his disease is as follows:
Probable date of infection 19
Probable source of infection
Laboratory examinations supplementing clinical evidence for diagnosis
Prognosis
Precautions taken to prevent infection of others
Signed M.D.
191 (Address)
* SPECIAL INFORMATION ONLY FOR HOSPITALS, ETC.
Former or usual residence How long at Place of illness
Certificate received 191 Filed 191

FIG 2.—Blank for reporting communicable diseases.

officers report promptly, however, although there is a disposition on the part of those officials in the smaller cities, where cases of communicable diseases are of comparatively rare occurrence, to report monthly rather than weekly. The more serious communicable diseases, such as diphtheria, scarlet fever, smallpox, and poliomyelitis are generally reported immediately upon diagnosis, the law requiring such reports in writing within 24 hours after diagnosis. Cards bearing a list of the reportable diseases are supplied to the health officers for distribution among the physicians in their territory.

In the office of the State board of health the reports are filed by counties alphabetically, the reports for cities in each county being filed by counties alphabetically. For convenience each county and city is assigned a number. For example, Alameda County is No. 1–0, and the city of Alameda next following is No. 1–1; Berkeley, next in order, is No. 1–2, etc. This method enables the filing to be done much more quickly. For convenience, in referring to morbidity conditions throughout the State, colored signals are used which are attached to the top of the report blank. The figures from 1 to 23 are printed on the top of the report, each number referring to a certain reportable disease, different colored signals being used for each disease. By this means it is very easy to determine at a glance the exact number of cases of any of the communicable diseases that may be present in the State.

For certain diseases, in which more detailed information is desired than the weekly report blank calls for, certificates of communicable disease are forwarded to the health officer in order that the information may be supplied in a standardized form.

It has not been found practicable to use these certificates for tuberculosis, for the reason that more specific data of an altogether different sort are required in reports of tuberculosis cases than this certificate calls for.

This plan in general has been used for nearly a year and is giving good results. Considerable labor is involved in placing the signals upon the reports, but it is believed that the time is well spent, for the reason that it makes the morbidity statistics at all times instantly available. The statistics are tabulated in such a way that the morbidity records for any city in the State for any given disease are at all times available.

An occasional case of willful neglect on the part of the physician requires the health officer to refer the matter to the district attorney for prosecution.

COOPERATIVE PUBLIC HEALTH ADMINISTRATION.

AN EXPERIMENT IN SMALL COMMUNITIES.

By EARLE B. PHELPS, Professor of Chemistry, Hygienic Laboratory, United States Public Health Service.

INTRODUCTORY.

In all the complex machinery by which public health laws are enacted and administered that part is the most vital which comes into direct contact with the people themselves. Great advances in our knowledge of contagious diseases are being made in the scientific laboratories of the world under National, State, municipal, or private leadership. The long delayed application of the scientific method to

the study of the health of mankind has at last come into its own and has given a good account of itself. Legislative bodies are constantly enacting wiser and better laws for the conservation of the public health. Federal, State, and municipal authorities are successfully working together to prevent the introduction of disease from foreign shores and to interpose barriers against its spread from State to State. State health authorities are directing, with increasing wisdom and skill, legislative enactment and the enforcement of regulations and are supervising in more or less detail the administration of public health works within their respective jurisdictions.

All these forces may act with wisdom and with vigor, deriving mutual strength and support the one from the other; the various parts of this vast machine may in the course of time be more effectively coordinated and more skillfully and efficiently run than ever before, but despite all this the carelessness or incapacity of an untrained local health authority, however conscientious or zealous, may permit the outbreak of a preventable epidemic or the unnecessary spread of a disease which has established itself in the community. He alone stands guard and his single failure may lead to a loss of life, health, and happiness, annul in large measure the most efficient work possible on the part of the other forces, and bring just reproach upon that greatest of conservation efforts, the conservation of the public health. It is as if some great textile mill were fully equipped for the production of its finished cloth. All the complex organization for the raising, gathering, and preparation of its raw material may be well developed and performing its function. The material may have been cleansed, sorted, carded, and spun. The loom may stand ready to receive its yarn and to transform it into the finished product. But if some small part of the actual weaving machinery be incapacitated, through improper design or poor material, for the performance of its own function, all these other forces will have been organized in vain, and the benefit that might have been derived from them will be lost to the world.

Fortunately this vital part of the public health machine has been well developed in most of the larger centers of population and in many of the smaller communities. These have provided themselves with experienced health officers, surrounded by an efficient organization and supported by a comfortable appropriation and a sound public sentiment. Despite the splendid examples of this sort which are to be found in all sections of our country and the obvious benefits derived from their services, this condition is far from universal. In many of our States, including some which justly lay claim to great prosperity and enlightenment, matters of local health administration have been sadly neglected or only nominally cared for. Despite

our great advances in the knowledge of combating communicable diseases, a knowledge which to-day requires years of special training to acquire; despite the great publicity and general public interest given to everything pertaining to the public health, to the cause and treatment of epidemics, to the scientific care and protection of the milk supply, the water supply, the food supply, and the general sanitary conditions and surroundings of the community, a vast majority of our smaller towns still intrust their public health administration to unpaid boards of local business men, usually including at least one medical practitioner.

This board may meet once a month to arrange for the collection of garbage, approve a bill for the burial of a dead dog, write an annual report showing that the "health of the town has never been better" or, as the case may be, "the town has been visited by an unusual amount of sickness during the year,"[1] and wait for something to happen. Sometimes it is a health officer instead of a board, usually a physician busily engaged in local practice. His duties differ little from those outlined except that he does not find it necessary to hold the usual monthly meeting. In our New England States it is often the board of selectmen who guard the health of the smaller towns in addition to looking after their general business welfare.

These men may be, and usually are, conscientious, diligent, and well meaning in the performance of their duties. They are selected by their fellow townsmen with much greater care and more personal knowledge than are the officers of the larger cities. Nevertheless they are absolutely incapable of performing public-health functions, which require the fullest abilities of the trained specialist. They bear about the same relation to a modern health organization that the old volunteer force with its hand pump bears to an up-to-date and fully equipped fire department.

Special training is even more important in the field of public health than in the field of law or medicine. The lawyer deals with property and private rights, the doctor relieves pain or saves an individual life, but the trained health officer guards the health of the community, wards off epidemics, and prevents the spread of communicable diseases.

Evidence of the responsibilities which rest upon him are easily found. To-day we read of a typhoid fever epidemic which might easily have been prevented had the local health officer known that a surface water supply might at any time become accidentally infected and that a simple and cheap preventive measure might long ago have been applied. On another occasion is recorded a similar epidemic because a surface privy had been too long tolerated in the

[1] Quoted from recent town health reports.

neighborhood of a public well and because of the visit to this household of an unsuspected case of typhoid fever. Again and again we read of scarlet fever claiming its toll of youthful lives or the more dreaded septic sore throat holding a community at its mercy because the guardian of the public health has not learned that pasteurization of milk is the only guarantee that it will not communicate disease, or perhaps because he was not aware that milk was being delivered at one house in unwashed milk bottles refilled at the doorsteps of the house next door which possibly he had already "quarantined."

Instances almost without end might be cited, not merely of preventable disease but of preventable epidemics, in which life and health have been sacrified because the people themselves thought that they could not afford to pay for a health officer as much as they would pay for a fire or police chief. It is difficult indeed to convince the people that the functions of a health officer are not unlike those of the other two. One hears constantly the statement, "We have no sickness here, therefore we do not need a health office." It might be said with equal truth that there had not been a fire or burglary during the past year, therefore the fire and police departments might be dispensed with.

The work of the modern health office is preventive. The day has passed when the placarding of a house in which diphtheria has appeared, followed possibly by a "fumigation" upon recovery and the recording of the case in a book, is the beginning and end of the health officer's duty. He now investigates the throats of the other members of the family and of immediate playmates, and will often, without further cause, visit the source of milk supply and make careful inquiries there. The occurrence of a second isolated case having the same milk supply is a sufficient cause for a thorough examination by bacteriological means of the throats of those persons coming into close contact with the milk at its source. Similar measures are taken throughout the whole list of contagious diseases because this specialist knows that all epidemics start in just such ways and that the time for his greatest activities is not during the epidemic but before it begins. He is therefore constantly on guard, and each isolated case of disease is to him one visible point upon an otherwise hidden trail which he knows leads eventually to another case or to an unsuspected carrier.

Enough has been said to demonstrate the vital importance of the local health office, that part of the health machinery which finally administers to the people. Therefore, for the purpose of greater emphasis the words which opened this introductory section may very well close it. In all the complex machinery by which public health laws are enacted and administered that part is the most vital which comes into direct contact with the people themselves.

THE EQUIPMENT AND DUTIES OF A LOCAL HEALTH OFFICE.

Modern public-health practice is not only a highly specialized science, but it is a science of specialties. These various specialties are of so diverse a character that there is required for their general supervision a man of special educational training, and even such a man can not hope to become expert in the details of every branch. A brief enumeration of the various branches of public-health activities, as exemplified in the work of any large city health department, will serve to make clear this important phase of the present discussion. There is, first, an administrative officer responsible for the smooth running of the organization and the proper interrelation of its parts and responsible also for all records, licenses, and accounts and for all official contact with the public. This officer is in most intimate contact with the vital statistics which constitute at once the record of achievement and the barometer of forthcoming events. The proper interpretation of vital statistics is in itself a special branch of mathematical and economic science and one with which the administrative officer should be especially familiar.

Under the general administrative head there is, first and foremost, a laboratory fully equipped for chemical and bacteriological investigations of milk, water, and food, and for the diagnostic examination of specimens for the determination of diphtheria, typhoid fever, tuberculosis, malaria, and for the Wassermann and Neisser tests, as well as for special studies of unusual forms of throat infection and allied matters. The laboratory work is in charge of a well-trained bacteriologist competent to carry out these various duties.

Next in order of importance comes the care of the general food supply, especially milk. With the assistance of the laboratory results the milk inspector follows up the unsatisfactory supplies, assists the producers in placing their supply upon a proper sanitary basis, oversees the work of pasteurization, and in those cities where the modern system of classification is in force sees that the regulations governing it are properly complied with.

The isolation and care of cases of contagious disease is another important function of the health office requiring most careful treatment. Every such case presents two important questions, namely, whence it came and to what it may lead. Studying the cases in groups by the methods of vital statistics, or individually, as a detective seeks the author of a crime, this office endeavors to trace backward the path of infection and looks forward to prevent its further spread. The tremendous menace of carriers of disease, who are themselves in apparent good health, is now being fully appreciated by modern sanitarians, and this has placed in the hands of the health officer a powerful offensive weapon. Protective measures

not only involve the old-fashioned isolation, but also include such measures as the notification to the school authorities of the names of other school children in the family or in the same house, a withdrawal of the privileges of the circulating library from those exposed to contagious disease, the stoppage of the return of milk bottles from such houses, and the immediate investigation of any milk supply toward which even the finger of suspicion has pointed.

Health offices are also cooperating with the system of district nursing, which serves the twofold purpose of relieving the needy sick and instructing others in the proper care of infectious material, and also of providing the office with intimate information relative to the presence of infectious diseases which it might not otherwise receive. The health office is frequently responsible for the inspection of plumbing and for the enforcement of housing laws, and requires for these purposes specially qualified persons in each line. The office also acts in an advisory capacity upon all health matters which come before the other municipal departments. Questions of school hygiene, including heating, ventilation, lighting and cleansing of school buildings, of sources and purification of water supplies and routine examination of water, of drainage and sewage disposal, of the sanitary disposal of garbage, of the extermination of flies and mosquitoes, and of other matters too numerous to mention are constantly being referred to it.

It will be seen, therefore, that the functions of a local health office are in no sense simple nor are they of a character that can be performed by any one person, however skilled, or by any group of persons without extensive special training and experience in their various lines. If the importance of a satisfactory administration of local health matters be conceded, it becomes even more evident that this function must be intrusted to a group of skilled experts under the administrative charge of a health officer whose training has been of such broad and at the same time highly specialized character as to enable him properly to oversee, to correlate, and to direct this diversified group of activities.

LOCAL HEALTH ADMINISTRATION.

Various methods have been developed for the administration of health matters in the counties, cities, and towns of the United States. In the larger cities these duties are cared for by an organization in which the branches of the work are in charge of various bureaus and divisions, each under the care of a bureau chief or deputy commissioner. The whole organization is presided over by a commissioner of health or health officer, who is directly responsible for the entire work of the organization. A recent study of the organization, powers, and duties of health authorities made by Asst. Surg.

Gen. J. W. Kerr and Mr. A. A. Moll, United States Public Health Service,[1] describes in detail many of the larger of these organizations and gives a general survey of the types of organization found in the various States. In 27 cities having in 1910 a population of over 200,000 and with a total population of over seventeen million, there is shown an aggregate appropriation for public health work in 1912 of nearly $8,000,000. The appropriations per capita per annum range from 13 cents to $1.75, with an average of 46 cents.

In cities of less population similar organizations upon a smaller basis are maintained and operated at about the same per capita cost. In still smaller communities, and especially in the towns and villages, very different forms of organization are met with. It is obvious that the same per capita charge for public health administration in such communities would not be sufficient to maintain such an organization as has been outlined, even reduced to its lowest limits. In some States an attempt has been made to organize a county health office having general supervision over the health administration throughout the county. Many such offices are merely nominal in character, appointment being by the board of county commissioners or by the court, and usually without special reference to the qualifications of the appointee for the work. In the case of many of these counties there are, in addition, the local health offices of the towns and villages. While the development of the county idea has resulted in an excellent sanitary system in England, it has with certain notable exceptions contributed but little in this country to the efficiency of public health administration.

Local health affairs, therefore, have been left very largely in the hands of local offices. Certain States have constitutional provisions for the appointment of a health officer while the majority provide for the appointment of boards of health with or without power to employ health officers. In most cases the boards serve without pay or at a nominal rate. The offices are elective or appointive; qualifications for appointment are in most cases nominal, duties poorly defined, and appropriations meager. In the New England States the boards of selectmen, elected at the annual town meeting to run the town during the succeeding year, frequently serve also as boards of health.

It is not the purpose of this discussion to criticize this state of affairs, for if such were the case it would be necessary to go into the matter more in detail and especially to point out notable exceptions to the general rule. It is merely the desire to show the general condition of affairs in local health administration in order to emphasize the need of some more satisfactory system. Here as nowhere

[1] Public Health Bulletin No. 54, U. S. Public Health Service, Washington, 1912.

else is the vast difference between accumulated knowledge of the causation and spread of contagion and actual practice in the protection of the public health emphasized. So far as local health administration in the smaller communities is concerned, sanitary science might as well have ceased to advance at least one and possibly two decades ago.

The appointment of a health officer, which is becoming more common in the small cities, is a distinct step in advance, although very often the advance is more apparent than real. In some States, such as New Jersey, definite qualifications for this office have been laid down and appointees must be certified by the State civil-service commission. A medical degree is not a necessary prerequisite for such appointment. In other States the appointee must be a physician, and in still others a person "duly qualified." The appointment of a local practicing physician to care for the poorly defined duties of the local health office at a nominal salary of $100 or $200 and without any definite understanding of the amount of time which his duties as health officer shall entail is a common practice.

A distinctly better position has been obtained by those communities which have provided for a full-time health officer. His work, at least, is not hampered by the pressure of private practice nor does he feel the embarassment of the local practitioner who must consider the ethics involved in his visiting a case of contagious disease which is in the hands of a fellow physician. In the course of an epidemic or other serious trouble he is able to give all his time and attention to his office without sacrificing a rich harvest in professional fees. Furthermore, the independent health officer is in position to take such decisive action as the cause of the public may demand at the time, without considering the effects of such action upon his private practice. Finally, it may be urged that the full-time health officer, even though he be poorly trained, has at least, or should have, but one object before him, namely, to become, through reading, study, and careful attention to the details of his office, as proficient as possible in its duties.

As between the large cities and the smaller cities and towns there are, therefore, two fundamental differences. The town office is poorly supplied with funds and can not by any possibility procure the trained organization that is possible in the city. Even with a full-time officer in charge and even though that officer shall himself have had suitable special training in public health work, the office still lacks the possibilities that come of expert training and experience in many diverse fields. One and the same person, however diligent, can not expect to become expert in plumbing inspection and in the bacteriological diagnosis of disease, or in the cleaning up of a dairy farm and in the control of epidemics. A health organization must

be an organization of specialists in all the various lines of public health activity. Without such a complete organization much can be actually done, it is true, but for the greatest efficiency, for the most complete utilization of the results of the modern sanitary science, and for the fullest protection of the health of the community, a definite minimum requirement along the lines of an organization or group of workers is absolutely essential.

THE MINIMUM REQUIREMENT OF A HEALTH OFFICE.

It has been shown thus far that the health offices of larger and smaller cities may be organized along the same general lines of activity and, at approximately equal per capita appropriations, may perform their duties with similar efficiency. A continuous process of subdividing, however, very soon leads to a point where further reduction in the organization itself involves a definite sacrifice of efficiency in some essential portion of the work. It has furthermore been shown that, in the case of very small towns and villages, any proper appropriation for public health work could not maintain anything like a suitably complete organization. It will be of primary interest, therefore, in this investigation to determine just what are the minimum requirements of an efficient administrative health office.

Owing to the varied character of the work and the need of expert treatment in each of the diverse branches there is necessarily such a minimum requirement of both men and equipment, and below this requirement efficiency is sacrificed. The proposition can not be entertained that in the smaller communities the needs are any less or the problems any simpler than in the cities. It is true that congestion of population brings its own peculiar health problems, but it is equally true and of far greater importance that the health of the cities depends to a great extent upon the health of the rural communities.

The city is fed by the country; its milk, fresh fruits, and vegetables come in from the surrounding communities. Its workers live, to a great extent, in those communities. Its future populations are being raised in the smaller towns. Visitors from the countryside come to the city to trade and mingle with its citizens in the pursuit of pleasure and entertainment. Finally, the city sends out into the country, in ever-increasing numbers, its summer vacationists, tourists, and pleasure seekers.

Furthermore, the splendid isolation of the farm and its occupants, with all the natural sanitary safeguards which such isolation provided, are things of the past. Rural communities, towns, and villages are to-day semiurban in character with all the sanitary problems that are associated with proximity of dwellings and the interchange of foods and social intercourse, but in protective health

measures such communities are still upon a rural basis. Public water supplies are often lacking, sewers are the exception, milk and food are produced and marketed as in days of old, school hygiene is a term little used and less understood. Perhaps the milk supply will best illustrate the rather startling fact that the rural communities of to-day are at least no better off as regards public health conditions than our larger cities. City health officers have given to the problem of milk supply long, continued, and expert study. They have sought the aid of the laboratory and of the experimental method and have developed, by trial and rejection, regulations for the care of milk that have finally produced fairly satisfactory results. They are in many instances encouraging and even insisting upon pasteurization, upon the grading of milk according to its origin and treatment, and upon the tuberculin testing of cattle; they are controlling their supplies by laboratory tests and are successfully prosecuting in court violators of the regulations.

The towns have none of these things. They rely merely upon proximity of the supply to safeguard them from epidemics. Ordinances are lax, there is no laboratory control, no special encouragement to the high grade producer; in fact only nominal and imperfect oversight, and often none at all. It can not be gainsaid that a cleaner and better milk can be obtained to-day in most of the large cities than will usually be found in the country, and it can certainly be maintained that in those cities in which pasteurization is insisted upon the milk supply is on the whole safer and better than the average town supply.

It is apparent that the towns and villages are on common ground with the cities in their need for health administration. While they may escape some of the disadvantages which come from congestion of population, they must face others peculiar to their own characteristics, and the minimum requirements of the town health office are no less than those of the city. It will accordingly be of value to determine from a careful analysis of the city organization the minimum requirement of the smaller health office.

The administrative officer of the large health department must find his counterpart in any smaller organization. This officer should be trained in public-health work and should give his whole time to the duties of the health office. He should first and foremost be independent of local patronage, and if he come to his work from without the community so much the better. It has been said that the efficiency of a health officer is measured by the enemies he makes, but this is only half the truth. By his tactful resourcefulness and honesty of purpose he must command the respect and friendship of his fellow citizens, but his motto for the performance of his official duty should be, "Here all friendship ceases."

His training must be so thorough that he fully understands and appreciates the varied work of the office. He should understand vital statistics thoroughly. He should know all that is known about the transmission of communicable diseases but need not be versed in treatment. He must know how milk should be produced and handled and what are the important factors in a safe and pure milk supply; how nuisances, especially flies and mosquitoes, are related to disease; how foods should be handled in the markets; how cases of contagious diseases should be quarantined and what matters are essential and what nonessential in preventing their further spread; he must also understand the laboratory methods sufficiently to interpret results and appreciate their significance; he should have a working knowledge of the problems and methods of sanitary engineering so that he may advise the authorities in matters of water supply, sewage purification, collection and disposal of garbage, school hygiene, swimming pools, pollution of streams, ice supply, cesspools and drainage, the extermination of flies and mosquitoes, plumbing laws, housing laws, and other incidental matters that may at any time be referred to his office. The training of such a health officer is not a matter incidental to an ordinary college course or any other course except it be a course in public health. Such courses are offered in many of our leading universities, being given either as a specialized medical course or as a specialized course in sanitary engineering.

The administrative office should be equipped with the necessary office furniture, a typewriter, special cards and blank forms for recording vital statistics and complete data on infectious diseases, lists of licenses of milk-men, licenses of plumbers and others, a history of complaints and nuisances and their abatement, and all laboratory records. A suitable filing system should be installed for the preservation of this material and for its ready reference.

Next in importance comes the laboratory. This should be in charge of a trained analyst competent to make all the various examinations that have previously been alluded to. He should be sufficiently well versed in sanitary chemistry and in sanitary and medical bacteriology not only to care for the regular routine matters, but to undertake, at any time, special research and investigations which may be called for. The laboratory should be equipped with the necessary apparatus for carrying out this work and especially with chemical and bacteriological glassware, sterilizers, and incubators, a good standard microscope, a centrifuge for the determination of fat in milk, and a chemical balance. At least one member of the laboratory staff should be especially skilled in the difficult laboratory diagnostic procedure for the identification of the various pathogenic organisms.

There must also be a sanitary inspector. It will be his duty to investigate nuisances and complaints, make sanitary surveys, inspect dairy farms, mosquito breeding grounds, and the drainage area of the watershed upon which the town supply is collected, and to undertake the various miscellaneous outside duties such as the collection of milk samples for laboratory examination, the inspection of markets, etc. The position of sanitary inspector calls for a man who is first of all diligent and responsible. He should have a well-developed detective instinct and an abundant supply of tact. He can learn the technical details of his duties from his chief, but his services become more valuable with added experience.

The position of visiting nurse is every day becoming more indispensable to a modern health office. It is her duty to cooperate with the school authorities and follow up cases of illness, to investigate cases of disease, particularly tuberculosis, that are associated with poverty, to address mothers' meetings and in general to represent the health office before the women and in the homes. A special training is required. The profession of district nurse is now a recognized one, and women are regularly preparing for it.

It is customary in some places to place under the jurisdiction of the health office the inspection of slaughtered animals. For this purpose a trained veterinarian should be associated with the office. He can also be of great assistance in the medical inspection of cattle upon dairy farms. Similarly the plumbing inspector is often placed under the health office, although it is coming to be considered better practice to place this in the office of the superintendent of buildings. An inspector who has had practical experience as a plumber is needed for this work. He, like the veterinarian, need not necessarily devote his whole time to the work of the office but should be definitely associated with it.

The organization which has been outlined is believed to be the smallest possible unit for complete and efficient health work. It can be enlarged indefinitely and its usefulness can be greatly increased at a much less than a corresponding increase in cost by the appointment of clerical, laboratory, and field assistants and by the permanent employment of the veterinary and plumbing inspector. In fact a complete city health department could be built about this skeleton by merely enlarging the different parts, but it is believed that it can not be further condensed without a distinct loss in some vital portion.

COOPERATIVE MEASURES.

The problem of local health administration reduces finally to a problem of finance. Given a sufficient financial support any properly trained health officer can organize and maintain a health office equal to the most efficient city organization. It is obvious, however,

that the minimum organization here outlined is necessarily beyond the financial resources of a small community. For the support of such an organization there should be an annual appropriation of from $10,000 to $15,000. Upon a per capita basis corresponding with the city appropriations of approximately 50 cents per capita per annum, this means a population of from twenty to thirty thousand people, which will be necessary to support such a health office. It is this financial feature more than any other which is responsible for much of the inefficient local health work of the present day. Furthermore, it is evident that if this minimum unit of organization were to be employed by any small community the total work to be done in that community could not fully utilize the services of the organization.

These conclusions lead logically to the idea of cooperative effort. It is apparent that if the size of the minimum efficient local health office is too great for the ordinary small community and can not be further reduced, then recourse must be had to some method which will enlarge the population unit to be served. In health work, as in no other field, cooperative effort is indicated. Epidemics are no respectors of township lines, milk and food supplies cross and recross such lines, and the constant intercommunication of the people has already brought about a social and economic cooperation of which health authorities are bound to take cognizance.

This feature has, it is true, received consideration in the organization of county and district health offices in some States, and the State health authorities themselves are supposed to view the health of the State as a whole and to direct local activities accordingly. None of these features, however, are sufficiently intimately connected with the local problem to furnish a satisfactory solution. A health officer of one town may, for example, become aware of a case of typhoid fever in a certain farmhouse, but may not be aware that milk from that farm is being sold to a second farmer who retails it in the next town. The health officer in the second town may in turn be aware of the milk situation, but not of the typhoid fever. Separately each may do his full duty until the subsequent epidemic discloses the facts. No State, district, or county oversight, as these are to-day administered, could have prevented this epidemic, but a consolidation of the two local health offices would surely have done so.[1]

Cooperation in health work is officially sanctioned in certain States, such as Massachusetts and New Jersey, but up to the present time no serious attempt seems to have been made to work out the problem in detail and to determine just how efficient it can be made,

[1] It is quite probable that the new public health organization of the State of New York, which provides for a uniform State sanitary code, a State public health council of advisory experts, and a staff of full-time sanitary supervisors appointed by the State under civil-service rules and having rather direct supervision over the work of the local offices, may prove an exception to the above statement.

or upon what basis of cost and of cost distribution. It can not be known without definite experiment just how large a community the minimum organization which has been outlined here can serve, nor is it at all probable that the maximum population that can be cared for by each subdivision of this unit will be found to be the same. Such a condition would necessitate the enlargement of the minimum unit to such a point that the work of each subdivision would fit naturally into the requirements of the population served. It has been pointed out already that an increase in the productivity in any subdivision may be made up to a certain point, with less than a corresponding increase in cost.

There is further need of experiment to determine how the towns themselves will react to a new idea of this sort. In several instances that have come to the writer's attention the obvious benefits of cooperative effort in health work have been made secondary to local jealousies; and what appeared at first to be a bright prospect for a practical application of these ideas failed because of local disagreement.

Finally the experimental method must needs be applied to this problem to determine the all important question of costs. While it is possible to estimate salaries and general running expenses with some degree of precision it is apparent that such estimates are deserving of but little confidence. Nothing but the application of a cooperative plan of this sort can make it sufficiently convincing to justify its further extension. While cooperation is frequently undertaken for the purpose of reducing running expenses the conditions in public health administration demand another viewpoint. Cooperation here is a means of providing a sufficient unit of population to pay for the services of an adequate health office. Under actual working conditions in most parts of the country the adoption of such a cooperative plan means a distinct increase in the cost of the so-called health work of the town. If this cost be reduced to a unit of efficient results, however, there is obviously real economy.

With these matters in mind an experimental study of cooperative public health administration in small communities has been undertaken and will here be reported upon. This investigation presented three distinct phases. First, for the information of health authorities and others it seemed necessary and desirable to determine the proper composition and personnel of such an administrative unit as has here been described in outline. The question of the relative importance of various lines of activity as measured by actual saving of life and conservation of health and by the development of a sound public sentiment in the community seemed of paramount importance. This in turn has led to a study of the balancing of the various subdivisions

of the work and the workers against the other possible variable, population served. It will be seen how with a limited community to serve it has been necessary, in order to bring about a correct balance, to undertake partial service, such as milk inspection only, in a certain portion of the total community. This was done with a definite idea of developing each subdivision of the work to its maximum point of efficiency.

The second important line of investigation was into the form of cooperative effort best suited to public health work. Local jealousies, petty town politics, and bitter opposition from those whose positions would suffer from such cooperation are as a rule sufficient to prevent the coming together of adjoining communities for the common good. It is necessary to offer such towns something more than a mere paper plan. A definite experience and a form of organization which has been modified to meet the varying demands made upon it until it has been molded to fit the situation are essential. It was believed that a definite record of such an experience would be the best possible argument against small objectors. If the proposed plan is one that has been well tried out and approved, the common sense of the people may be expected to assert itself sufficiently to carry through its adoption, while with a new and untried scheme, frankly admitted to be an experiment, successful introduction is almost an impossibility.

Finally, the proposed investigation must have reference at all times to matters of cost. Whether the study itself shall, during the period of its experimental stage, be self-supporting is immaterial. If a sufficient amount of support can be obtained from the cooperating towns to give them a feeling of proprietorship in the plan, it matters not if outside funds are found necessary to carry it out in detail. It is essential, however, that the absolute costs of all services and also of miscellaneous expenses be compiled, not only in total but subdivided to show the cost of the various subdivisions of the work. Only upon a basis of cost per capita of population served can any intelligent discussion of this plan be made by other communities considering its adoption.

THE TECHNOLOGY PLAN.

Preliminary Period.

The town of Wellesley, Mass., having a population in 1913 of approximately 5,500 in addition to some 2,000 students at Wellesley College and other educational institutions, had for some years previous to November, 1912, taken a stand in public health affairs somewhat in advance of the usual practice in small Massachusetts towns, in that a trained, full-time health officer had been employed. Mr. Cecil K. Blanchard, a graduate of the department of biology and public health of the Massachusetts Institute of Technology, had held this

position and had organized his office to as high a point of efficiency as was possible with the limited means at hand. A laboratory had been installed and routine diagnostic examinations and chemical and bacteriological tests of milk and water supplies were made. Mr. Blanchard also served in the capacity of plumbing inspector and was, in brief, responsible to the board of health for its entire administrative work except the keeping of the minutes of the meetings. This was done by the secretary of the board. The board itself was composed of two local physicians and a business man and was unpaid except that a nominal payment was made to the secretary. The board held regular monthly meetings and special meetings when required. After deducting from the total health appropriation the cost of garbage removal, hospital charges for the care of cases of contagious disease, and other necessary expenses of the board, approximately $1,500 was available to cover the salary of the health officer and the general running expenses of the office and laboratory.

The occasion of Mr. Blanchard's resignation, to take up more important work elsewhere, automatically brought into effect a recent State law placing plumbing inspectors under the State civil service and requiring practical plumbing experience as a prerequisite. Since the employment of the plumbing inspector was obligatory, under the State law, while that of health officer was optional, this raised a serious question of the board's financial ability to again employ a health officer. The matter was discussed with Prof. William T. Sedgwick, head of the department of biology and public health of the Institute of Technology and seemed to provide a suitable opening for a plan of cooperative health work which Prof. Sedgwick had long had in mind. A similar plan was already in successful operation in Massachusetts in the fields of education and of hospital maintenance. Dr. Charles E. North and the present writer had also given much thought to the development of the details of such a plan and had previously attempted to introduce it upon a practical working basis in certain groups of towns and cities in New Jersey. Inability upon the part of these communities to come to any definite agreement upon the matter of cost distribution had up to this time prevented its successful inauguration. By reason of this experience it was deemed inadvisable to attempt again to bring together a definite group of cooperating towns. Some new mode of procedure seemed to be essential to successfully initiate a cooperative movement.

The whole matter was discussed with the members of the Wellesley board of health and the proposition made that the writer assume full charge of the administration of the Wellesley health office for a period of six months, utilizing for that purpose the available funds of the board and such additional funds as might be found necessary and could be secured elsewhere. It was proposed to handle this work

through a small organization to be brought together for the purpose rather than through a single health officer, and the endeavor was to be made, during the six months' period of this agreement, to interest a sufficient number of adjoining towns in this plan to secure from them, individually and independently, appropriations sufficient to carry on the work for another year. By making each town a definite proposition of a specified service for a specified sum of money without any reference to the services or price of services in other towns it was hoped to avoid the causes of earlier failures.

It was fully realized that this organization would not be self-supporting during the first six months of its existence and that even during the subsequent year it might not be possible to secure a sufficient sum of money from the cooperating towns to place it upon a self-supporting basis. As the matter was properly a research or investigation, it was deemed proper to expend upon it a reasonable sum of money in order that the results of the research might be available for future organizations of a similar character. Fortunately the generosity of an anonymous donor had, for many years previously, supported the work of the Sanitary Research Laboratory of the institute, this work having been carried out along many lines of public health endeavor. Permission was freely given to make this practical experiment in public health administration a part of the work of that laboratory and, if necessary, to support it in part from the laboratory funds.

The organization at the beginning was of the simplest character. Mr. Franz Schneider, jr., an instructor in the department of biology and public health, consented to undertake the additional labors incidental to the duties of administrative officer of the Wellesley office and was relieved, in part, of his duties at the institute by several of his colleagues who volunteered to assist the work in this way. Miss Edith A. Beckler, instructor in bacteriology at Simmons College, was also sufficiently interested in the new work to give a portion of her time to it. She assumed charge of the laboratory and assisted in the management of the office. These two volunteers, with what assistance the writer was able to give, and with the assistance of a plumbing inspector engaged upon a job basis, started upon November 1, 1913, to develop a working organization. It became the writer's special duty to interest a sufficient group of towns and to make such business arrangements as would be necessary for continuing the work after May 1.

Organizing the Group of Towns.

Having thus organized the movement, two things were essential to success. It was necessary first and foremost to demonstrate, even with an imperfect organization, the advantage of expert treatment of board of health work, and it was further necessary to bring this matter

before the attention of the other towns so as to secure their cooperation. Anything that might have been lacking in the way of resources or assistance was more than made up by the activities and enthusiasm of the members of the staff, and it is due wholly to their untiring efforts that the advantages of the plan were so soon demonstrated. The organization and the work having been developed as far as the financial resources permitted and with a view to a much more complete development and a much more extensive handling of board of health work, various other towns were invited to look into this matter and to see if it appeared to justify their support. The work of convincing the town authorities that this service was worth while proved to be no small task.

Unlike Wellesley none of these other towns had previously made any attempt to develop an active health office. Unpaid boards or boards receiving a nominal rate for their services were the rule. These boards were composed of three members, always with one or two local physicians, and their administrative work was handled in various ways or not at all. Plumbing inspectors, who had long outgrown their usefulness, and who, in many cases, were able to retain their positions only because they had been appointed previous to the adoption of the State plumbing inspection law requiring civil-service appointments, were generally the most important paid agents of the board. As a rule the chairman of the board was detailed to act as administrative officer between meetings and it became his duty to receive notices of infectious diseases, attend to the placarding and isolation of the houses, or to the final fumigation and release from quarantine and to other routine matters which might be brought to his attention by the citizens. In one case the town clerk served as clerk of the board and attended to these matters. In another case a physician member of the board served as plumbing inspector. In one of the towns no board of health was in existence, but a new board had been elected and had not yet been organized. It became necessary to present the idea of the group system to the different members of these boards, some of whom would be deprived of certain small financial returns by this plan, and to present it also before the finance committee of the town, sometimes before the board of selectmen themselves, and in two cases before the annual town meetings.

As was anticipated, many difficulties developed. There was in the first place the legal question. It was not entirely clear just how the matter could be handled without very complicated legal procedures and possibly without final recourse to the State legislature. Much thought was given to this question and a careful study of existing laws and powers of boards of health was made. As a result of this study and after consultation with Mr. George A. Sweetser, town attorney of Wellesley, a form of agreement was drawn up which

seemed to comply with the legal requirements and to accomplish the desired result, although in a somewhat indirect manner. The law permits a local board of health to employ agents with power to act for the board in all administrative matters, the board to approve the acts of its agents at its regular meetings and to have control over all appropriations and expenditures.

The agreement which was finally devised was in the form of a contract between the board of health and the writer personally, in which the latter appeared in the rôle of general agent of the board. This contract provided that a definite sum was to be paid the general agent in the form of salary, and that for this sum the general agent agreed to perform certain specified duties without further expense to the board. The general agent was further empowered, subject to the approval of the board, to employ a deputy agent and other assistants such as he might deem necessary for carrying out the terms of the contract, he to be responsible for all salaries of such assistants and for the running expenses of the office. A copy of this contract appears as an appendix to this report. This contract later passed the scrutiny of six town attorneys and seems to have fulfilled the legal requirements of the case. Although the personal nature of these contracts was a source of some embarrassment to the general agent when the suggestion was made, as it was upon more than one occasion, that a considerable profit was accruing to him, there did not seem to be any other satisfactory way out of the difficulty.

A second difficulty which arose was as to the distribution of cost among the towns. This difficulty proceeded from several causes. In the first place, it could not be definitely ascertained just what the cost of the work would be. It was necessary to agree to do certain things, but the experimental nature of the work did not permit any precise estimate of the expense of this service. While there remained the possibility of cutting down the work to meet the available appropriations, it seemed highly desirable to outline a thorough piece of administrative work, even though a deficiency were produced thereby. Another source of difficulty lay in the fact that many of these towns had never made any but a nominal appropriation for board of health work, so that any demands made upon them appeared to be excessive. Finally the town authorities were naturally curious to know what other towns were being asked to give, and considered themselves the best judges of a fair distribution of expense. This matter had to be handled firmly, because in many cases existing appropriations were made use of in order to gain a foothold for the organization when it was realized that the sum of money involved would leave a serious deficit on the part of that town. While it might be possible to make up this deficit from other outside funds available, it would be highly undesirable to allow this meager appropriation to be used

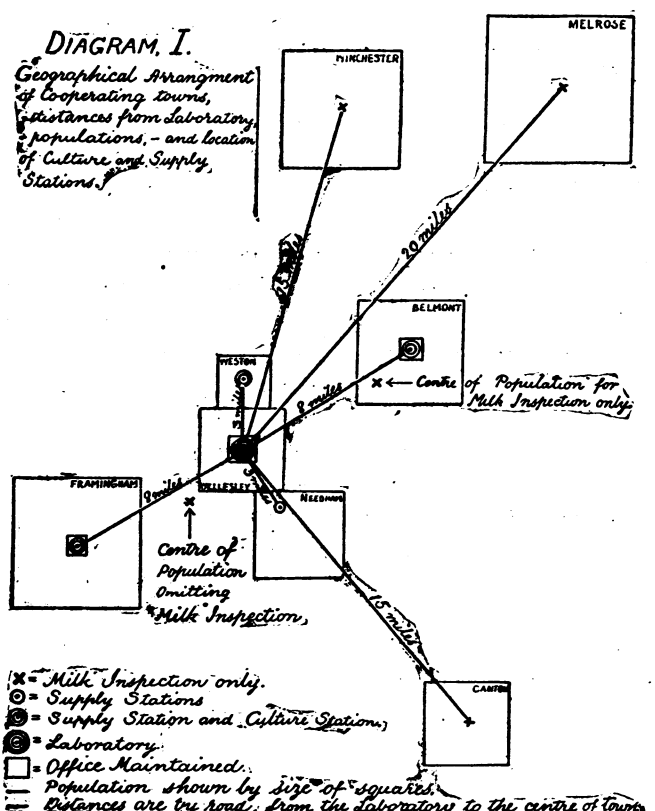
as a basis for bargaining on the part of the others. These and countless other minor difficulties were finally overcome, and satisfactory arrangements were made with six communities to take effect April 1, 1913.

These communities, in the order of their participation, were Wellesley, Belmont, Framingham, Weston, Melrose, and Needham. The city of Melrose, having a population of 16,500, had a well-organized board of health, but lacked proper milk inspection. The services of the organization were, therefore, extended to Melrose only in that direction. Two months later the towns of Winchester and Canton placed their milk inspection in the hands of the organization. In the other five towns all of the work of the board of health was transferred to the office, except that in Framingham the existing arrangement relative to plumbing inspection was continued, and the office had no financial responsibility for that work. A new by-law passed in Wellesley in May, 1913, removed the plumbing inspection from the jurisdiction of the board of health, placing it under the building inspector, where it properly belongs. In only two towns, Belmont and Weston, was the plumbing inspection a part of the work of the cooperative office. These contracts having been secured and the necessary bonds filed to make them legal, work was immediately begun looking toward the placing of the organization upon a permanent and full-time basis. Diagram I shows the geographical relation of these eight communities in a purely diagrammatic manner. The distances by road from each town center to the central office and laboratory are given and the populations are indicated by the size of the squares. The latter have no relation to the areas of the towns. The geographical center of population of the groups is about 6 miles northeast of the laboratory and of the groups in which full service was rendered, 3 miles in the opposite direction. If the milk inspection represents one-third of the total service (which is approximately the case) then the combined center of population for all services rendered is approximately at the laboratory.

Permanent Organization.

Personnel.—Mr. Schneider's resignation from the instructing staff of the institute having taken place on March 15, his further participation in the work was prevented. Mr. Robert N. Hoyt was therefore engaged as the administrative and executive officer of the new organization. Mr. Hoyt is a graduate of the institute in the department of biology and public health and had seen service in board of health work in the town of Summit, N. J., and later at Princeton, N. J., where he served as health officer and registrar of vital statistics. He came to the work, therefore, well equipped and with great enthusiasm for the new plan. Miss Beckler continued to devote

half of her time to the laboratory work until the close of the school year, when she gave up most of her work at Simmons College, and has since devoted practically her whole time to the work of the organization as bacteriologist and executive secretary. Mr. Thomas F. Harris, who had for several years been a plumbing inspector of the board of health of East Orange, N. J., and who was personally known to some of us to be an active and energetic worker, was appointed sanitary and plumbing inspector of the organization. Mr. Frederick Abramson, a graduate of the College of the City of



New York, was made assistant bacteriologist and collector of samples. His services were also utilized in the sanitary inspection, fumigation, and miscellaneous outside work. Following Mr. Abramson's resignation, Mr. A. P. Sturtevant, a postgraduate student and instructor at the institute, served in a similar capacity during the summer months, and the position was later filled by Mr. H. L. Shoub, sanitary bacteriologist, United States Public Health Service. Mr. Shoub's detail upon this work was made by the Surgeon General, United States Public Health Service, because of the general interest

and widespread possibilities which this public health experiment had developed.

The writer was also permitted to remain in general charge of the work after entering the Public Health Service and up to the completion of the first full year. The Public Health Service has, therefore, contributed materially toward the successful outcome of this work. As special problems necessitated additional help from time to time, other assistants have been appointed. Mr. Carl T. Pomeroy was engaged to make a special sanitary survey of Wellesley in connection with a fly and mosquito campaign, which was later undertaken, and Mr. P. S. Platt was similarly engaged for a short time, in the summer, in market and dairy inspection. Arrangements were made to secure the part-time services of two stenographers, and janitor service was provided for at the main office and laboratory. Mr. Charles H. Houlahan, for many years town clerk of Belmont and clerk of the Belmont board, was retained to represent the organization locally in Belmont.

Office equipment.—The necessary office equipment included desks, a typewriter, bookcases, a set of standard reference works and stationery. Another important item and one involving some considerable initial outlay, is that of printed forms and filing cases for records. It is impossible to give too much thought to the detailed preparation of record cards. Local requirements and added experience bring about many modifications and it is almost always possible to improve existing forms. If it were not for the necessities of the situation the proper time to prepare such forms would be at the conclusion of such an investigation as this one. It is not feasible to reproduce here the large number of forms that have been devised to simplify the office routine. They include milk and plumbing license applications, serially numbered blanks for the milk collector, with a detachable tag for the milk bottle and one for the dealer numbered to correspond, elaborate case cards to keep all information on cases of contagious disease, report cards for all the laboratory tests and examinations, nuisance cards, sanitary inspection cards, cards to accompany specimens sent in for examination, and numerous others.

Laboratory equipment.—The next matter which called for serious consideration was the equipment of the laboratory. It was desired to keep this down to a minimum for satisfactory work. It was decided to obtain all bacteriological media from the institute and it is considered quite proper to have resorted to this expedient to decrease the initial installation cost because similar organizations can now readily obtain media from educational institutions or from private laboratories in almost every section of the country. This provision made it unnecessary to install apparaus for the prepara-

tion and sterilization of media. The necessary glassware for the bacteriological and chemical work was provided and the equipment also included an analytical balance, and a 6-tube electrically driven and heated Babcock machine for milk examinations and a supply of chemicals. A detailed list of the necessary equipment for such a laboratory is given as Appendix II.

Transportation and communication.—The question of transportation was next carefully looked into, and it became obvious that in order to cover the territory some special means of transportation would have to be provided. An automobile costing $642, equipped, a motor cycle costing $255.75, equipped, and a second-hand bicycle costing $17.50 facilitated the transportation of the various members of the staff from place to place where their services were in demand. The automobile was used by the executive officer to enable him to maintain regular office hours at Wellesley and at Framingham, the two chief offices. Office hours at Belmont, the third central point, were maintained regularly by Mr. Harris as plumbing inspector and by Mr. Houlahan as clerk, and frequent telephonic communication with the central office kept the chief officer constantly informed of the situation in Belmont. He found it sufficient, therefore, to make occasional trips to Belmont without maintaining definite office hours. The towns of Weston and Needham flank Wellesley on either side and their work was handled entirely from the Wellesley office. Arrangements were made with the post offices so that all mail directed to the local board of health in either town was forwarded promptly to the Wellesley office and the addressed envelopes which were distributed to physicians and others in town for the purpose of communicating with the board of health were so addressed. The telephone number of the Wellesley office was also given in the local directory as that of these two boards, so that no difficulty whatever was experienced in combining the health work of these three adjoining towns under one office.

The entire matter of transportation involved a considerable loss of time in addition to the expense, and the geographical arrangement of the towns was not, in this sense, ideal. In considering the cost of this item of transportation, and, in fact, the cost and efficiency of the entire work, allowance must be made for this fact. The exact relationship of these six communities is indicated upon diagram I (p. 2497). Applying the results of this investigation to any other specific case it will be comparatively easy to make proper allowance for this transportation item.

The Year's Work.

With this personnel and equipment the organization entered upon its active work on April 1, 1913. For the purpose of greater convenience in the accounting, and also in order to systematize the

routine work, the entire work of the office was divided into six departments, known as administration, diagnostic laboratory, milk inspection and control, sanitary inspection and contagious diseases, plumbing inspection, and miscellaneous, respectively. This classification, although somewhat arbitrary, has served a useful purpose and will be maintained in this discussion of the various departments of work.

ADMINISTRATION.

Under this classification there were grouped the major activities of the executive officer, together with the incidental clerical and office work. Administrative work included general supervision over the other departments, care of the correspondence and relations with other officers of the town or State, keeping the vital statistics, including records of contagious diseases and death certificates, and the issuance of burial permits.

All complaints of nuisances and requests for information came to the administrative office and were properly referred. Records of complaints, of action taken, and of the final disposition of the case were kept in a card system filed by street and number. Under this head also came the monthly reports to the boards, attendance on meetings of the boards, and the preparation and distribution of the minutes of those meetings. The keeping of the finances and accounts and the annual report of these accounts to the Massachusetts bureau of statistics upon prescribed forms also comprised a portion of these duties.

Dealings with the public occupied no small amount of time. Many callers were received at the various offices and every effort was made to encourage such direct contact between the office and the public. To this end also considerable attention was given to matters of publicity. Newspapers were supplied with copies of the regular monthly reports, with additional explanatory matter and with occasional news items. It was the policy also from time to time to prepare for publication more serious articles upon some aspect of public health work.

Probably the most important connection with the public was obtained through the local physician. At the outset an endeavor was made to secure the appreciation and hearty cooperation of the physicians practicing in the various towns. With this purpose in view and realizing that all that could be done to simplify the labors of the physician in his dealings with the board of health would be appreciated by him, a neat telescopic box was gotten up, bound in green paper, and labeled plainly on the back, "Board of health." This box was of such a size that it would fit nicely upon any bookshelf, and it had pasted upon the inner cover a copy of the state

regulations relative to the reporting of communicable diseases, with a list of diseases which were notifiable. There was also a list of materials which the box contained when sent out and with which it should be kept supplied, and the address of the nearest laboratory, or substation of the laboratory, at which supplies might be secured. The box itself contained a complete assortment of all the necessary report forms with return stamped envelopes, a combination outfit for the taking of blood specimens for examination for typhoid fever, malaria, or for other purposes, and a sputum bottle for the collection of specimens for examination for the tubercle bacillus. It was deemed inadvisable to supply culture tubes for diphtheria swabs, since the medium dries up so rapidly. Provision was made for distributing this and other materials supplied by the board, including those furnished by the State, such as smallpox vaccine, diphtheria antitoxin, typhoid vaccine, and silver nitrate solution. These could be had at local substations, in accessible drug stores in the various towns. The druggists were glad to assist in this work, it being no doubt to their distinct advantage to serve as distributing points for supplies which the physicians were frequently obliged to call for. At these stations there were also kept a complete supply of forms, return envelopes, and various outfits for specimens.

DIAGNOSTIC LABORATORY.

At the three more important centers, namely—Framingham, Belmont, and Weston—these same substations were equipped with small incubators, electrically heated, into which serum tubes could be placed after having been brushed over with throat swabs from suspected cases of diphtheria. The local physicians were to see to it that the cultures were properly placed in the incubators and the light turned on and arrangements were made for the prompt sending of all such cultures to the laboratory the following morning. In this way specimens deposited previous to midnight could be reported upon by telephone before 10 a. m. the following day. Owing to delays in shipment and to the large volume of work handled at the State laboratory, 48 hours was said to be the minimum time in which a report could be obtained upon a suspected diphtheria culture, so that this feature of the service was greatly appreciated by the physicians. The small incubators were about the size of an ordinary microscope case, heated with an 8-candlepower incandescent lamp controlled by a very simple metal thermostat spring and maintained a constant temperature quite satisfactorily. They were made especially for this purpose and cost about $7 apiece, complete. Current was cheerfully furnished by the local druggists.

The provision for a large amount of diagnostic work which was made possible by this organization was found to be a feature of great

value in the routine administration of the office. In the first place, it gave a feeling of security that if any serious outbreak should occur in any of the towns the entire capacity of the laboratory was available for that particular town and the office would further be in position to do much more thorough and effective work than in the case of a smaller laboratory in a larger community where the routine work practically utilized the resources of the laboratory. This extra equipment also made it possible to adopt preventive measures which upon several occasions proved to be exceedingly valuable. In one single isolated case of diphtheria which occurred about the beginning of this work over 24 throat cultures were taken and examined for possible evidences of a carrier. This precaution and the systematic examination of throats of contacts before admitting them to the schools was undoubtedly of great value. This was well illustrated in the case of a small epidemic of diphtheria which occurred in one of the towns and which was definitely traced to a child who had recently moved into that town from another where less rigid control had been maintained. This child had been in contact with the disease but did not herself come down with it. She was able, however, to transmit it to a sister and to four or five playmates, one of whom died. The system of control which was exercised in the cooperating towns would undoubtedly have detected this carrier and prevented the further spread of the disease.

In another instance four cases of diphtheria were reported in a private school. The throat of each pupil and teacher was examined at once and out of 69 examinations, two carrier cases were found. These were removed and the outbreak ceased. Again a small outbreak of diphtheria in another town seemed to be related to a single milk supply, this information being derived from a study of the case cards which were promptly filled out with a complete history of each case. Investigation of the throats of all those handling the milk disclosed a mild unrecognized case among the milkers. He was removed and the premises thoroughly disinfected and the outbreak ceased.

It is not often that such definite statements of the results of board of health work are possible. The similarity of such an organization to the fire and police departments has already been alluded to. No one can foresee what results would have happened had not energetic measures been taken at the outset. One can state, however, with some measure of assurance that, if our present views of the transmission of contagious diseases are sound, and if the history of past epidemics is any criterion of the future, then such measures as have been adopted would have prevented known epidemics in the past and in all probability they have definitely prevented epidemics which otherwise would have occurred in these towns.

There were made during the year 360 examinations of throat cultures for diphtheria, 80 preparations and examinations of sputum for tubercle baccilli, 70 blood tests for typhoid fever, 100 blood examinations for the malarial parasite, 25 Neisser tests and 6 Wassermans, a total of 641 diagnostic tests. A number of special tests and examinations were also made at the request of physicians.

MILK INSPECTION AND CONTROL.

Existing systems.—It was realized at the outset that some satisfactory system of milk inspection and control was most urgently needed in all the communities in the group. In Wellesley only had there been any systematic attempt at bacteriological control. In Belmont a beginning had been made in having an annual inspection and analysis of all supplies made by an outside consulting laboratory. The State Milk Inspection is confined to a physical examination of the stables and cattle and to occasional chemical examinations of milk taken in the open market. The various boards of health had appointed milk inspectors but their work at most did not exceed an occasional chemical examination. In most of the towns absolutely nothing was done. Winchester which came into the group later had made for one year monthly chemical and bacteriological examinations and had also had in force a very strict system of inspection of stables and cattle.

The policy of milk inspection as it is carried out in Massachusetts by State and local health authorities is one that emphasizes the police duty of the office and antagonizes at the outset the producer and dealer. Duplicate sealed samples are regularly given to the dealer in accordance with the law and all the proceedings are taken with a view to subsequent prosecution. Formal instructions are given in writing in the form of an order. No attempt has heretofore been made, as far as the writer is aware, to develop the theory that the milk inspector should be of assistance to the producer and dealer while at the same time protecting the public.

Publicity and competition.—After very careful consideration of the merits of this policy, it was decided to develop the milk inspection along somewhat different lines. In the first place greater emphasis was to be laid upon bacteriological results, these being indicative of general cleanliness and conditions of handling and storing the milk and thus having to do directly with its sanitary qualities. The minimum attention compatible with observance of the law was to be given to questions of adulteration and legal chemical standards, these referring to fraud rather than to public health and being sufficiently controlled by the State inspector. In the second place it was realized that an attempt to enforce standards of any kind could not be productive of the greatest good in the cleaning up of the milk supply.

The greater part of the milk supplied to these towns would come well within any reasonable bacteriological standard, and the problem was really one of improving the conditions of production and marketing to a point which could not be defended in court proceedings.

While there can be no possible doubt in the minds of health officials that a milk supply averaging 25,000 bacteria throughout the year is a very much safer supply than one averaging 250,000, yet there is very serious doubt whether such a legal standard would be wise or could be satisfactorily defended in court.

In several places, notably and probably first in Montclair, N. J., by Mr. C. H. Wells, health officer, publicity has been resorted to to improve a milk supply. Since it did not seem wise to undertake to emphasize the police duties of the board in this connection, the alternative policy of publicity was decided upon. It was held that the duties of the board had been sufficiently performed if a safe and generally satisfactory milk supply were maintained. In addition to this it was believed that if the case were fully submitted to the consumer through the public press he would very quickly convince the producer and dealer that the cleanest and freshest milk would command the best market, and might at times command a better price than the average.

It was further decided that the duties of the office as regards the processes of producing and handling milk should be advisory after the minimum requirements for a reasonably safe and clean milk had been complied with. Such regulations as those dealing with the cutting off of a supply upon which a case of infectious disease has been reported, the stopping of the return of milk bottles from homes in which such diseases are prevalent, and the prevention of the refilling of bottles with milk carried in bulk were insisted upon. A single trip of inspection was made in order that the milk inspector might become acquainted with the conditions under which the milk was produced and a careful record and score were kept on file. Beyond this instructions were not issued to the producers, nor was any attempt made to improve the conditions of production except upon request.

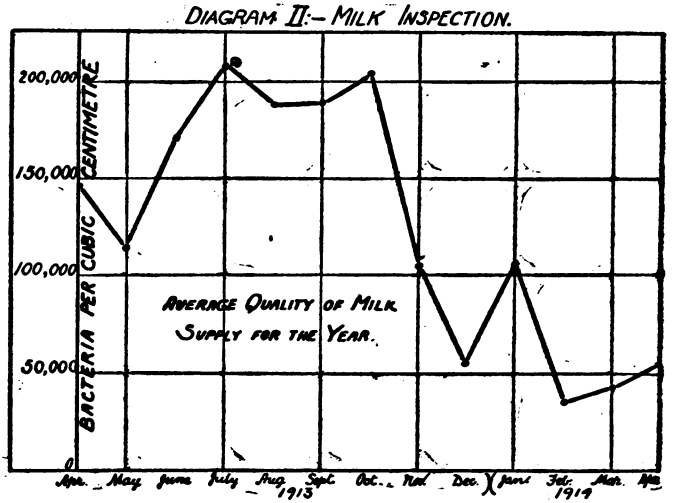
The results of the monthly examinations, both chemical and bacteriological, were communicated promptly to the dealer. They were also published in the daily press and were frequently commented upon editorially. Special contributions from the administrative office to the press were always welcome, and in this way the entire subject was discussed with the consumer so that he might deal with it in an enlightened manner. This machinery having been set in motion it was very soon discovered that there was an active interest on the part of the various producers to improve their sup-

plies. The question was repeatedly asked, "What can I do to get up to the head of the column?"

The matter of cleanliness and sanitation having thus been placed upon a definite commercial basis and the producer having been convinced that there was a cash value attaching to a good standing in the list, the milk inspector immediately assumed in the eyes of the producer a position which he had never before occupied, and his advice, instead of being grudgingly acted upon in his presence and immediately dismissed from thought after he had left the premises, was now eagerly sought and in most cases fully acted upon. On the part of the consumer there was an equally satisfactory interest shown.

While it is undoubtedly true that a considerable portion of any community will take no interest in matters of this kind, there was a considerable public interest in the milk work which was done in these

DIAGRAM II:—MILK INSPECTION.



towns. This interest was reflected in the daily press, in the many requests which were received at the office of the board for more complete information, and in a falling off of the business of certain dealers and a corresponding increase in that of others selling the cleaner milk, many of these changes being reported to the office by the dealers themselves. There were made during the year 1,323 bacteriological examinations and 1,029 determinations of fat and total solids by lactometer. Low lactometer results to the number of 505 were checked by evaporation of samples and direct weighing.

Results.—The general average character of the milk supplies of the six communities which were in charge of the office throughout the entire year is indicated in diagram II. This is a composite plot showing the average number of bacteria per cubic centimeter in the entire milk supply of these six communities for each month of the

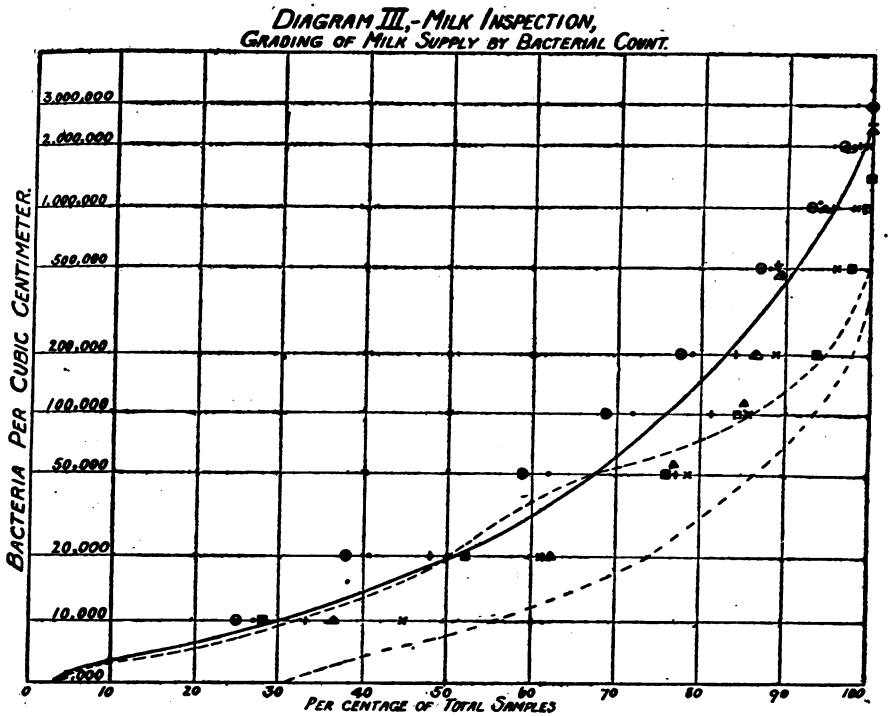
year. To one who is familiar with the very great increase in bacteria which occures normally in a milk supply during the summer months, frequently a ten-fold increase, the relation of the summer figures to those of early spring will indicate a distinct improvement in the conditions of handling the milk. This improvement, however, is more definitely confirmed in the results during the latter part of the year. Starting with 150,000 bacteria per cubic centimeter in April, the count rose to about 200,000 during the summer months and dropped to approximately 50,000 during the winter and up to the following April. The high result in January, 1914, was due to three samples out of the total of 88, and without these three samples the average figure would have been 40,000. These three producers were all again normal in February.

A more detailed examination of the results used in making this average curve will be of interest. The average in April, 1913, 150,000, approximately, was made up of town averages ranging from 67,000 in one instance to 519,000 in another. It is especially significant that the high figure was obtained in the town which had previously had no board of health whatever, and the low figure in the town in which bacteriological control of the milk supply had been in force for three years. The next lowest figure in the set, 85,000, was in the town which had had an annual examination of its milk supply made for several years past.

Average figures do not, however, furnish all the facts necessary for a proper interpretation of the character of a public milk supply. They may, in fact, be quite misleading by covering up a few unsatisfactory cases or they may be too greatly influenced by one or two very high figures. It is equally important to know the distribution of results about the average. To this end diagram III has been prepared.

This diagram shows the percentage of the total number of samples examined which contained less than specified numbers of bacteria. The small circles, squares, etc., refer to the six individual communities, and the solid curve drawn through them is a general average of the whole series. This curve shows, for example, that throughout the year 30 per cent of the samples contained less than 10,000 bacteria per cubic centimeter; 51 per cent less than 20,000; 67 per cent less than 50,000, etc. Improvement is indicated by a displacement of this distribution curve to the right, increasing the percentage of the samples which fall below the specified limits. Such a distribution curve gives a very good picture of a milk supply and is far more significant than average results except where the latter are used for such comparative purposes as are indicated in Diagram II. To further illustrate the improvement which has taken place in the case of the milk supply during the year, two other curves have been drawn

upon Diagram III. The upper dotted curve shows the distribution of samples according to their bacteriological content during April, 1913, and the lower dotted curve the same distribution one year later. Consideration of these two curves will show that in April, 1914, 56 per cent of the samples were below 10,000 as against 32 per cent one year previous; similarly, 74 per cent as against 50 per cent were below 20,000 and 86 per cent as against 67 per cent were below 50,000.



POINTS SHOW ANALYSIS OF SIX SUPPLIES; SOLID LINE, COMPOSITE CURVE FOR YEAR; DOTTED LINES, COMPOSITE FOR APRIL, 1913 (UPPER) AND APRIL 1914 (LOWER).

This showing is all the more remarkable when the uniformly good character of the milk supply as a whole is considered and especially so when it is recalled that the result has been obtained wholly through the policy of publicity and friendly cooperation with the milk producers themselves.

For the purpose of more ready comparison Table 1 has been prepared showing the distribution of milk samples for the entire year and for the month of April in 1913 and in 1914.

TABLE 1.—*Bacteriologic examinations of milk.*

Bacteria less than—	Per cent of samples having less than specified numbers of bacteria per cubic centimeter.		
	Year.	April, 1913.	April, 1914.
10,000	39	32	56
20,000	51	50	74
50,000	67	67	86
100,000	75	85	94
200,000	84	94	98
500,000	91	100	100
1,000,000	95	.....	.....
2,000,000	99	.....	.....
3,000,000	100	.....	.....

Pasteurization.—With the exception of the pasteurized supply furnished by the two Boston contractors and one other small supply the milk furnished in these towns was not pasteurized. The importance of a pasteurized supply in the prevention of epidemics is now too well recognized to require discussion. The supposed disadvantages of pasteurized milk have repeatedly been shown to be without satisfactory bases, and sanitarians have generally recognized the tremendous public health value of pasteurized supplies. The importance of this has been especially impressed upon the cities of Massachusetts by two severe outbreaks of septic sore throat, which have occurred in recent years, one of which was upon a supply which was under most elaborate sanitary control and which approximated a certified milk standard. The second of these occurred in one of the towns of the cooperating group previous to its entrance into this group. It was, in fact, this epidemic which drew the attention of its board of health to the importance of a properly-controlled supply. It had to be frankly admitted, however, that the things which were being done, although in themselves highly desirable, would not have prevented the epidemic.

Sentiment seemed ripe here for a compulsory pasteurization ordinance. Plans were prepared for a central pasteurizing plant to be installed with either public or private funds and to which each of the dealers might bring his milk in the evening and, if he desired, see it bottled with his special device upon the cap. The milk was to be pasteurized during the night and returned to the dealer any time after midnight for delivery.

Bottles would be brought back to the plant for washing. It was estimated that the saving in washing and bottling would more than offset the additional labor of an extra trip to the central station. The actual cost of the pasteurization was to be charged pro rata among the dealers at the end of each week. It was estimated that this cost would be somewhat less than 1 cent per quart and that an

additional charge of 1 cent per quart on all milk sold in the town would be amply justified. In this way both the dealer and consumer would receive benefit. With such a plant installed it was thought to be entirely justifiable to pass a compulsory pasteurizing ordinance, leaving it optional with the dealer whether he used the central plant or a plant of his own, satisfactory to the health authorities. This plan unfortunately was not put into force and still remains upon paper only. It is believed, however, that it possesses merit and that eventually some such system will be enforced. Owing to the distance that lies between the adjoining towns in this movement it would not be feasible to attempt to utilize the resources of the cooperative organization in the construction and control of a central plant. Individual plants in each town, however, could very well be under the supervision of the health office, and with a continuation of the efforts that have already been made toward the securing of a clean raw milk such a system of pasteurization would result in a nearly perfect milk supply and in a great saving of life and money.

Ordinances.—Two very important matters have been developed here which call for a strengthening of the milk regulations, a matter which it is proposed to take up immediately. The license of the dealer should be made conditional upon his filing with his application a complete list of his employees who have anything to do with the handling of the milk and of all the sources from which he purchases milk. There should be no restriction upon his making as many and frequent changes in these matters as he may desire, but the continuance of his license should absolutely depend upon his promptly notifying the the board of any such change. Such a regulation is essential if the health officer is to be in position to take early action in the case of an infected or suspected milk supply. Having on hand a complete file of the employees engaged in handling the milk of the town, he notes at once, from his physicians' reports, the occurrence of contagious diseases among these people or among others of the same family name who may have associated with them. It is not only essential for him to have this information in connection with any particular dairy, but it is absolutely essential that he should be able to so cross-index his milk records as to learn immediately if milk from this source is being sold to other dealers either in his own community or outside the town. Such a regulation would work no hardship upon the producer, and if he were supplied with proper forms for the recording of occasional changes he would without doubt be willing to comply fully with the spirit of the regulation.

A second important matter which should be covered by strengthening the existing regulations relates to the refilling of empty and unwashed bottles on the streets. Most of the milk in these towns is delivered at a very early hour, generally between 2 and 5 o'clock a. m.,

and it is practically impossible by direct regulation to prevent the refilling of unwashed bottles taken from one house and delivered to the next. The expense of bottles is a very heavy one upon the small dealer and he no doubt feels obliged to adopt this procedure to offset the careless habits of his customers in retaining bottles and at times putting them to various other uses. The dangers of refilling unwashed bottles are manifest. The history of epidemics shows more than one epidemic started in this way. It is a common practice, among Massachusetts dealers, at least, to carry in the rear of the wagon one or more large milk cans partially filled. It is usually offered in explanation that this is milk that has been purchased and is being taken back to the barn or milk which is to be sold to another dealer. It is impossible for the inspector to prevent the refilling of bottles if the practice of carrying milk in bulk be permitted. On the other hand it would work little hardship if a special trip had to be made in cases where milk is actually bought or sold in bulk This dangerous practice can only be stopped by making the presence of bulk milk on a wagon dispensing bottle milk "prima facie" evidence of refilling. Milk ordinances should be drawn accordingly.

The system of milk inspection and control that has been adopted in this work will lead naturally to such a classification of supplies as has been recommended by the National Commission on Milk Standards.[1] Here, again, however, the procedure will differ from common practice in that the demand for such classification will come naturally from the better grade of milk dealers who will profit thereby.

Legal responsibility.—The question of legal responsibility on the part of the board of health or milk inspector for any damage done to established trade by the publication of analyses was raised in several instances. The matter was carefully considered and several legal opinions obtained. In one of the communities the attorney did not feel that the board of health was authorized by law to publish these results and therefore decided that individual members might possibly be held liable. In every other case a favorable opinion was received. The general theory seemed to be that, although specific authorization had not been conferred, the board was quite justified in making the examination under the general authority of the State law governing milk inspection, and that the results of analyses automatically became public property as part of the official records of the board. The board is ordered to make annual report of its doings and these results would properly be included in such annual report. Preliminary announcement of results, which are eventually to become public property, would seem, therefore, to be entirely justified and defensible.

Regardless of the legal merits of this matter, it must be obvious that a milk dealer would hesitate before bringing suit against a public-

[1] Reprint No. 78 from U. S. Public Health Reports.

health officer for the publication of accurate data. It is essential, of course, that the data be obtained by competent persons so that there can be no successful questioning of their truthfulness.

SANITARY INSPECTION AND CONTAGIOUS DISEASES.

Because of the similarity between these two kinds of effort, and as they are in charge of the same members of the staff, they have been grouped together.

Sanitary inspection.—Sanitary inspection in the various towns has varied according to local needs. Where the available appropriation has justified the expense, a house to house survey of the town has been made by a sanitary inspector who has noted upon a suitable card the general sanitary conditions. Special note has been made of private wells, privies and cesspools, barns and stables, and the presence of garbage, ashes, or rubbish. These cards have been filed by street and number and furnish a valuable ready reference in case of complaints. They have also in some cases been made the basis for a fly and nuisance map which will be referred to later. Special attention has been paid also to market conditions and some care has been given to the sanitary conditions of barber shops. In these cases it has been proposed, but not yet attempted, to issue to those shops and markets that have passed a satisfactory inspection a certificate in the form of a placard to be exposed in the window or behind the counter. This certificate will state that the shop has been inspected on such a date and found to be in satisfactory condition. This system would entail a monthly routine inspection and, by again appealing to the consuming public, would soon bring about a strong demand for these certificates of inspection. This in turn would place the sanitary inspector upon the same plane as the milk inspector, namely, that of advisory expert whose advice would be sought and followed rather than avoided. The system would do away entirely with the necessity of compulsory enforcement of requirements since the mere withholding of the certificate would be a sufficient penalty. There is no stronger force available to the health officer than appeal to enlightened public sentiment. Full explanation of the methods to be adopted through the public press would make every householder a sanitary inspector and would practically force the shopkeeper to conduct his business upon a high sanitary plane.

In the rural sections the sanitary inspection has largely taken the form of advice relative to water supplies and sewage disposal. Here again the police powers of the board of health have been subordinated to its advisory and consulting duties. Examinations of wells and country water supplies, inspection of drainage systems, and reports upon the matter have been greatly appreciated and encouraged. Advice has also been given in several instances on general systems of

town drainage, upon the proper disposal of garbage and ashes, upon the location and care of piggeries, and upon stable ordinances. The sanitary inspection has also included inspection of schools in cooperation with the school physicians, and tests of ventilating systems and advice relative thereto. It should be extended to a similar supervision over other public buildings, including public halls and churches. In one town the organization was fortunate in being able to assist in a tuberculosis survey carried out under the auspices of the Massachusetts Association for the Prevention of Tuberculosis. The agents of this association furnished the health office with valuable data upon housing and general sanitary conditions and a follow-up campaign was inaugurated which led to a marked improvement in these conditions.

The care of contagious diseases.—The usual routine procedures were adopted in the care of contagious diseases, but promptness and thoroughness were the watchwords. The health officer or his deputy visited each case immediately after it was reported, saw that proper facilities for isolation existed, or had the case removed to a hospital. A complete history of the case was made at this time upon a special card devised to bring out all important facts. Two important aspects of the case were always in view—its origin and the possibility of its spread. Every detail of the history was carefully studied with a view to tracing the infection backward. It has already been shown with what success this procedure has been followed in two cases.

In case of home isolation a bottle of liquid disinfectant was distributed in each case without charge and instructions were given for its use. Emphasis was laid upon bedside disinfection varying in measure according to the character of the disease, and the case was visited at sufficiently frequent intervals to see that instructions were being carried out. Terminal fumigation was resorted to, but only because of long-established custom and in order to avoid prejudice against the new organization. It is sincerely hoped that this expensive and time-consuming operation may be entirely dispensed with, as the benefits derived are without doubt entirely incommensurate with the cost and labor involved. On the other hand, it is believed that much good can be accomplished by the use of liquid disinfectant about the bedside and in the washing of the hands, clothing, and dishes which have come into immediate contact with the patient.

It has been felt that there is strong need for more scientific information upon the period of infectivity, especially in the children's diseases, and upon the proper period for quarantine. In the absence of such information, however, it has been the policy in this work to adopt rather extreme measures, although realizing that in many cases unnecessary hardship was involved. It was thought best to work

possible hardship upon the individual for the general safety of the community.

PLUMBING INSPECTION.

Plumbing inspection was carried out in only two of the eight communities, although the office had charge of this work in a third town. The duties of the plumbing inspector refer largely to the financial protection of property owners and to the prevention of fraud upon the part of the plumber. Inefficient plumbing is no longer regarded as a serious menace to the public health. The work of this department comprises merely the testing of new plumbing, including additions to existing systems. Although this work involved a considerable expenditure of time and money, and led to more complaints of violations than any other department, it involves no features of special interest and has no practical bearing upon the public health aspects of this experiment. It is earnestly to be hoped that the work of the plumbing inspector may in general be completely removed from the jurisdiction of boards of health and assigned to the inspector of buildings, where it properly belongs.

MISCELLANEOUS WORK.

In addition to the work which has been classified under the foregoing heads much work of a special character has been undertaken. It is believed that an organization of this kind should have available time and funds for the prosecution of purely research work, such as the investigation of special problems that may have important local significance but which have not come to the attention of the outside investigator. Many problems of this kind have appeared in the course of this work, and it has been impossible to deal with the majority of them because of the pressure of more immediate matters. Some study, however, has been given to the matter of solubility of lead in a deep well water supply in one of the towns, to the laboratory diagnosis of whooping cough based upon recent discoveries relating to the organism of that disease, and to the significance of special organisms in milk. Some work has also been done upon various sediment testers for milk, and upon sediment standards.

Mosquito work.—Special funds were provided from private sources in two of the communities served to be applied to the extermination of mosquitoes. In both of these cases a mosquito survey was inaugurated and maps of the towns prepared showing all major breeding places which could not be readily eliminated. Crude oil was sprayed upon standing surface waters that could not be otherwise treated, and the standing water in catch basins was similarly sprayed. Minor nuisances were referred by a courteous note to property owners with a request that they be eliminated and an offer on the part of the

board of health to do the work at cost with the estimated cost thereof. The letter also diplomatically referred to the powers of the board to regulate the nuisance referred to, but it was found that the appeal to local and personal pride was in most cases sufficient. Still smaller sources of mosquito breeding, such as tin cans, were destroyed by the inspectors. Although the funds for this purpose were exceedingly limited, an appreciable amount of good resulted, and it became possible to determine the cost of a more comprehensive campaign for the present year. Such a campaign was recommended in both instances, and a special appropriation of $500 has been made in one case.

Antifly crusade.—Private funds were subscribed in one instance by local societies for an antifly crusade. A "Cleaner town movement" was organized under the auspices of the two principal clubs, men's and women's, and with the indorsement of the local board of health. Special literature was gotten out, and the local press was made use of. A large map of the town was prepared showing in different colors the various sources of fly breeding, such as garbage and refuse heaps, manure piles, privies, and cesspools. This map, prepared upon a large scale with full explanation, was exhibited for one week at a time in the principal drug stores of the town and led to much public discussion and a great deal of good. By the encouragement of such a movement, inaugurated by agencies other than the board itself, a tremendous popular impetus is given. The people feel a personal proprietorship in such a movement, and each person so interested becomes a virtual agent of the board in a general program of public enlightenment.

Publicity.—An exceedingly important part of any compaign for improved public health administration is a full knowledge on the part of the people of just what is going on. The general popular interest in public health matters existing at the present day makes it possible to secure all the space that is desired in the local press for the discussion of such matters. The practice was early inaugurated of communicating to the press the outlines of projected work and the results of work that had been completed.

In this way the work of the office was well advertised and much talked about. It became a matter of great public interest and so long as results were being produced satisfactorily this public interest was a tremendous influence for good. In one town the election of a new town government upon an economy program seriously threatened the work. The selectmen publicly and privately questioned the desirability of anything of the kind and advised a return to the old unpaid board of health. It was even stated that a lot of new ideas were being tried out by inexperienced men and that questions of personal profit were largely at the bottom of the interests of the new organization. There can be no doubt that the political methods

employed by these so-called economists would have entirely succeeded in undermining the work of the board and in completely eliminating appropriations for the succeeding year were it not for the widespread public approval of the work and an urgent demand for its continuance. This demand became so pronounced that all opposition ceased automatically.

THE ACCOUNTING SYSTEM.

Since the chief aim of this work was to demonstrate experimentally that a group of small communities could within reasonable cost obtain the same sort of expert board of health administration that is available to larger cities it became an important matter to keep careful records of the cost of the work. For this reason much more elaborate cost-keeping accounts were maintained than would usually be found necessary. The expense of the accounting itself therefore has not been charged against the work as a legitimate operating expense.

Since all financial transactions involved in this work were cash transactions the cash book furnished the basis for the accounts. Incomes were credited directly to the towns, expenditures were in most cases charged directly to one of the six departments of work that have been outlined. In addition to these six job accounts and for the purpose of more detailed information upon certain special items, ledger accounts were also opened with "Stock and fixtures," "Salary," "Printing," "Automobile and motor cycle," and "General unclassified expense." Expenditures for apparatus of a permanent character such as permanent laboratory equipment or the automobile were charged to stock and fixtures and at the close of the year a proper depreciation credit was made on this account and charged to the suitable job account or to the automobile account as the case might be. At the end of the year the salary, printing, automobile, and general expense accounts were closed by distributing their balances among the six job accounts. In order to make this distribution properly, daily time and expense accounts sheets were kept over certain characteristic months showing the distribution of the worker's time among the six classes of work and among the eight cooperating communities. A similar record was made of the automobile mileage. Upon the basis of these time cards the salary items properly chargeable to the six divisions of work were estimated and the salary account distributed in accordance with this estimate. The entire expenses of the automobile and the motor cycle were similarly distributed.

Finally, the time sheets served as a basis for the distribution of certain of the job accounts among the eight communities. It was assumed for this purpose that in the case of administration, sanitary

inspection, and contagious diseases and general studies the distribution of the total expenses in these departments, including salary, should properly be made on the basis of the corresponding salary distribution indicated by the time cards. In the case of the diagnostic laboratory, milk inspection and the plumbing inspection, a more definite basis for distribution was to be had in the total amount of work performed for each of the communities. The average time required in making each of the various diagnostic tests was determined from a careful record over stated intervals and the entire expense of the diagnostic work was distributed in accordance with the respective numbers of tests of each kind made for each community. The expenses of milk inspection were similarly distributed upon a basis of total number of samples collected and examined except that the automobile expenses of collection were distributed upon a basis of mileage involved. In order to be fair to the outlying towns all automobile mileage between towns was charged to general expense.

The books show, therefore, the cost of each town's work and form a valuable exhibit in the preparation of estimates for the ensuing year. As this matter is one of purely local interest it will not be considered here. There is also shown the cost of each of the six departments of work. The character of the work undertaken in each of these departments has already been described somewhat fully in order to give significance to the cost figures. In addition there is special information given on the cost of salaries, printing, and transportation by automobile and motorcycle, while the stock and fixtures account is carried to the final balance sheet as an asset. The town accounts show the profit or loss in each individual case and these, together with the cash balance and accounts receivable and payable at the end of the year, and the capital account showing funds borrowed, or otherwise provided, for the purpose of the work, complete the final balance sheet. Matters of capital account, profit and loss, and individual contributions from the towns will not be shown at this time. The chief interest in the present presentation lies in the actual expenses of the work.

For the purpose of making this presentation as fair as possible the entire period of this work has been divided into two subperiods designated the "Organization period" and the "Full-year period." The first period extends from November 1, 1912, to April 1, 1913, and comprises that period in which the organization was being gotten together and in which only the town of Wellesley was contributing toward its expenses. Owing to the unusual character of the work and the incomplete nature of the organization the expenses of that period are of little significance. From April 1, 1913, to April 1, 1914, the organization was fully developed and six communities were

contributing to its income. Two months later the towns of Canton and Winchester intrusted their work of milk inspection to the office.

Financial results.—The important features of the accounts have been summarized in Table 2.

TABLE 2.—*Detail summary of costs of each service, with populations served, per capita costs, and percentage distribution of costs by services (per capita) and by various cost items.*

Service.	Costs of service.					Population served.	Cost per capita.	Percentage of total per capita.
	Salary.	Communication.[2]	Rent.	Supplies.	Total.			
Administration[1]	$1,500.67	$990.98	$100.00	.....	$2,591.65	32,650	$0.079	31
Diagnostic laboratory	452.16	3.62	100.00	$322.10	877.88	32,650	.027	10.6
Milk inspection and control	1,469.25	151.59	100.00	123.96	1,844.80	62,016	.030	11.8
Sanitary inspection and contagious disease	680.31	13.84	.....	406.69	1,100.84	32,650	.034	13.3
Plumbing inspection	313.32	65.93	.....	164.69	543.94	8,385	.065	25.5
Miscellaneous	309.29	175.65	.....	159.46	644.40	32,650	.020	7.8
Total	4,725.00	1,401.61	300.00	1,176.90	7,603.51	.....	.255	100
Percentage of total cost	62.2	18.4	3.9	15.5	100	.....	.....	.....

[1] Office duties, consultation, records, statistics, monthly reports to each board, board meetings, publicity, general supervision, etc.

[2] Includes transportation, auto and motorcycle expenses, telephone, postage, and express.

NOTE.—Services were rendered to the various communities as follows: Administration, diagnostic laboratory, sanitary inspection and contagious disease, and miscellaneous; to Belmont, Framingham, Wellesley, Needham, and Weston. Milk inspection; to the above and Canton, Melrose, and Winchester. (Canton and Winchester were served for only 10 months; the populations have been corrected accordingly.) Plumbing inspection; Belmont and Weston.

In this table the six departments of service have been set out and against each department will be found the total cost of this service for the year subdivided into items of salary, communication, rent, and supplies. The item, communication, includes all transportation whether by automobile, motorcycle, bicycle, or railroad. It also includes telephone, postage, and express. The rent item is a bookkeeping charge which was credited to the town of Wellesley for rent of the office and laboratory furnished by the town. The total costs of these various services are not directly comparable since the populations are not identical in the several cases. It has previously been pointed out that in order to obtain a proper balance between the work of the various departments so that each might be fully developed to an efficient point, partial service was undertaken in certain towns. Table II finally shows, therefore, the actual populations served in each case and the actual cost per capita of population served.

These costs are strictly comparable. For more ready reference, however, the last column shows these same costs reduced to a percentage basis. The costs of administration may appear unduly high, but this is only apparent. A more precise system of accounting would distribute many of these costs over the other departments because of the general advisory character of that which we have classified as administration. The item of plumbing inspection is

undoubtedly too high, owing to the comparatively small community served. Plans had been formulated for including an additional 6,000 population within this group which would have materially reduced the per capita cost, but these plans miscarried following the adoption of a new building code on the part of the town in question which removed the office of plumbing inspector from the jurisdiction of the board of health.

These cost per capita figures are of interest in showing the low cost of efficient board of health administration. Less than 6 cents per capita covers the expenses of the diagnostic laboratory and milk inspection and control and less than 10 cents will include with these sanitary inspection and control of contagious diseases. The items listed under miscellaneous included fly and mosquito campaigns in two communities, special follow-up work in connection with an anti-tuberculosis crusade, advice on water supplies, sewage disposal, and many other matters. The total expense of approximately 25 cents per capita (19 cents exclusive of plumbing inspection) is of interest in comparison with the cost of city board of health work previously given. These are shown on page 2483 to range from 13 cents to $1.75 per capita per annum with an average in all cities over 200,000 population of 46 cents per capita per annum.

Exclusive of plumbing inspection, one-half of this amount would provide, in the case of these towns, for the fully developed board of health organization which has been outlined as the minimum efficient unit, including, in addition to the present staff, two district nurses and the services of a medical and a veterinary advisor.

A perusal of these costs and results will readily convince anyone versed in public-health affairs that these funds have been well spent and that the effort and expense have been worth while to the community. There might be some question, however, of the feelings of the average citizen. It is especially gratifying to note, therefore, that in every single instance this work was continued for another year, although in half of the towns it was necessary to ask for increased appropriations. In the small Massachusetts towns, with their annual town meetings, matters of this kind are rather fully discussed and in order to obtain the continued support of the community such work must have undoubted and well proven merit. No better test of the satisfactory character and reasonable cost of the service could be devised than the submission of these questions to a New England town meeting. No more gratifying result has been obtained in the whole 18 months work than the unanimous indorsement of this movement by the citizens of the 8 communities, as shown by their determination to continue it for another year, and, in many cases, to enlarge its scope and to support it with more generous appropriations.

CONCLUSIONS.

It was stated earlier that this work was experimental in nature and that there were three phases of the investigation upon which it was desired to obtain certain definite information. These phases were, first, the relative importance of the major lines of board of health work and the proper balancing of these efforts to give the maximum of results with a given expenditure of public funds; second, the determination of the form of organization and cooperative effort best adapted to local conditions, political, financial, and otherwise; and, third, the cost of efficient board of health administration after the work had been properly balanced and adapted so that each of its divisions was receiving a degree of attention justified by the public health requirements.

The first and last of these matters may well be discussed together. The positive results of administrative board of health work are measured by the prevention of disease, the development of a sound public sentiment, and the elimination of public nuisances which may only secondarily affect the public health. Measured by these standards, that work which has here been classified under "Administration" has done much toward the development of public sentiment and has, of course, been essential in the proper organization and supervision of the entire work of the office. The "Milk inspection" and "Sanitary inspection," supplemented in each case by the work of the laboratory, have also given definite and positive results. In the one case the actual improvement in health is indirect and not capable of definite demonstration, but potential danger has at least been reduced. In the other case outbreaks of disease have been definitely prevented.

In these divisions of the work results have been obtained which are apparently well worth the cost, and the distribution of cost is probably very closely representative of the importance of each. In actual demonstrable results the work of the diagnostic laboratory has apparently done more to ward off disease than has that of the milk control. As the latter is a matter of progressive improvement, it might be well to contemplate a reduction of the milk work to a bimonthly basis in those sections where the supplies are satisfactory, and a corresponding increase in the work of the diagnostic laboratory. Additional tuberculosis work, the more complete following up of typhoid-fever convalescents, and a systematic search for malarial foci suggest themselves as fruitful lines of advance. The plumbing inspection, from a public health aspect, is not worth what it has cost. In the miscellaneous division, the work of fly and mosquito suppression alone justifies the costs which have been recorded. This would be true even if public enlightenment were alone considered.

It will be observed that the work of balancing these various departments, so that each shall be developed to a maximum of efficiency, has

necessitated a variation in the populations served in the several cases. A population of about 60,000 was necessary to fully develop the capacity of the organization in the work of milk control. For a complete service in one group, therefore, a population of not less than 60,000 people represents the most efficient unit of population. Upon this basis the work of the administration, diagnostic laboratory, sanitary inspection and contagious disease, and miscellaneous departments would have to be doubled. Since this can be done by the employment of assistants the per capita charge for this work in a community of 60,000 people would be materially reduced. Without including plumbing inspection it is estimated that this charge would not exceed 17 cents per capita per annum. The inclusion of two district nurses would increase the cost to approximately 21 cents per capita.

As to the best form of organization, this will naturally vary from place to place, depending upon local political and financial conditions. There are many difficulties in the way of a mutual consolidation among small town boards of health. Some of these have already been pointed out. They can possibly be overcome in some cases, and a cooperating group composed of the presidents or executive officers of each of the individual boards is not at all impossible. Distribution of cost upon a population basis seems to be the best procedure in such cases. Although the sparsely settled communities lead to the greater expense in the transportation item, this is largely offset by certain additional sanitary problems in the more thickly settled communities. It will be necessary in such a case for the consolidated board to have a certain appropriation immediately available, which appropriation shall be replenished from time to time from the various town treasuries. This procedure involves much more complicated financial arrangements than are involved in the immediate dealing of the individual town with one individual in charge of the work. The financial aspects will have to be worked out to meet local requirements.

A second possibility is that a central State authority may be empowered to organize these local offices and to assess the cost in an equitable manner among the cooperating towns, or that educational institutions may similarly serve except in an advisory capacity.

Again it would be quite feasible, and in most cases highly desirable, to consult expert advice in the organization of a cooperative health office and in the preparation of a schedule of expense and its proper distribution. This plan would assure the nomination of properly qualified workers in the various branches and greatly simplify the initial work of organization. The profession of consulting sanitarian is one which is already recognized and which will become better known in the near future.

Finally, it is believed that in many places this work may well be undertaken wholly under private auspices, as was virtually done in

this case. This provides by far the simplest arrangement, financial and otherwise, places the burden of organization upon one who knows how to deal with it and fixes the responsibility in a most definite and satisfactory manner. If no better plan is possible, it would be far better to intrust the important work of board of health administration to a competent consulting expert in those lines than to forego entirely the benefits of a cooperative organization.

SUMMARY.

The local health office in the smaller communities is the most essential and least efficient part of the present-day public health machine. The highly specialized character of public health work and the financial inability of the smaller community to support a properly trained health organization are in large measure responsible for this condition.

Consolidation of adjoining communities in a cooperative health office will provide a sufficient population to support the requisite minimum organization for efficient health work at a per capita charge much less than that usually imposed in the larger cities for work of a similar character.

The details of such a cooperative effort inaugurated among certain Massachusetts towns by the officers of the department of biology and public health of the Massachusetts Institute of Technology are given.

This work was assisted by the Surgeon General of the United States Public Health Service through the detail of a sanitary bacteriologist and through the devoting of a portion of the writer's time to the general supervision of the work since October 1, 1913.

An organization comprising an administrative officer, a bacteriologist and secretary, a sanitary and plumbing inspector, a field assistant, and two clerks served a population of 32,650 in all departments of the work except plumbing inspection (a population of 8,385 being served) and an additional population of 30,000 in milk inspection and control, at a cost of $7,603.51 for the year.

The output of such a health office can be increased by the appointment of assistants at less than a proportionate increase in maintenance costs.

The prompt measures taken in the preliminary investigation of every case of contagious disease, backed up by the findings of the diagnostic laboratory, have, in at least two cases, prevented serious outbreaks of contagious disease and would undoubtedly have prevented a third outbreak and one death had they been in force in a neighboring town from which a carrier case was imported.

The average bacterial content of the milk supply has been reduced by approximately two-thirds without any restrictive measures having been imposed upon the producers themselves other than those already in force. This has been done by a systematic laboratory

control of the milk supply embodying monthly chemical and bacterial analyses, by a policy of publicity, and by helpful, constructive criticism given to the producers upon request. The improvement is of especial significance in view of the generally good quality of the milk supplies in question. Starting with 32 per cent of the individual supplies below 10,000 bacteria per cubic centimeter and 50 per cent below 20,000, one year later 31 per cent were below 5,000, 56 per cent below 10,000, and 74 per cent below 20,000.

Prompt and energetic measures were adopted in the control of contagious diseases, every effort being made to locate the initial source.

Campaigns for mosquito and fly suppression were carried through successfully.

An accounting system, showing full details of the costs of this work, was employed. The work of the diagnostic laboratory and the milk inspection and control cost approximately 3 cents per capita per annum each, and the work of sanitary inspection and control of contagious disease cost slightly more. The total cost of the work, exclusive of plumbing inspection, was 19 cents per capita per annum.

A population of about 60,000 would develop each of the various subdivisions of the work to a point of maximum efficiency and could support the work of a complete organization, including two district nurses and medical and veterinary advisory services, at a per capita cost (exclusive of plumbing inspection) of one-half the average cost of board of health work in the large cities of the United States.

Such a cooperative office may be organized among the towns themselves, through the initiative of State or educational authorities, or under the direction of a consulting sanitarian, or it may be conducted entirely by an outside consulting office specializing in public health work.

APPENDIX 1.

AGREEMENT made this 1st day of April, 1913, between Earle B. Phelps, of Melrose, Mass., and the town of ———, a municipal corporation in the county of ——— and Commonwealth of Massachusetts.

Earle B. Phelps agrees to act as the general agent of the board of health of the town of ——— and to perform for said board the following duties:

The duties of executive and administrative officer, is so far as the board shall direct; the duties of bacteriologist, of milk inspector, of sanitary inspector, of plumbing inspector, and of disinfector as these duties are understood and interpreted by the board and as they are further described in part in a letter from said Earle B. Phelps to said board of health, dated March 18, 1913, a copy of which is attached hereto and made part of this contract.

It is agreed between the parties hereto that the said Earle B. Phelps may perform the said work through assistants or others who shall be satisfactory at all times to said board of health and who shall be appointed by said board of health, as the official

agent, milk inspector, plumbing inspector, or other agent of the said board or town, if such appointment be necessary to carry on the work of said board. Said appointee, however, to receive no salary whatever except such as may be paid to him or them by said Earle B. Phelps. The services to be performed by the said Earle B. Phelps and his assistants hereunder to be performed to the satisfaction of the said board of health at all times.

For all the services to be performed hereunder the said town of ——— agrees to pay the said Earle B. Phelps the sum of ——— per annum, payable in monthly installments of ——— as near as may be practicable on or about the 15th of the month, but the time of payment shall not be deemed to be of the essence of this contract.

In case any of the work shall be performed by said Earle B. Phelps through assistants or employees the said Earle B. Phelps agrees to make such arrangement or agreement with reference to such assistants or employees and their compensation as may be satisfactory to said board of health, and so that the payment of ——— per month hereinbefore referred to shall be in full for all services of said Earle B. Phelps or said assistants or employees.

The said Earle B. Phelps agrees to give bond in the sum of $1,000 with sureties satisfactory to the board of health conditioned for the faithful performance on his part of all the terms and provisions of this contract.

This contract shall remain in force for 12 months from date hereof and thereafter for successive terms of 12 months unless said Earle B. Phelps or the said town of ——— shall by one month's notice in writing prior to the expiration of any such 12 months' period terminate this contract and upon such notice this contract shall be terminated.

The services contemplated by this contract shall include services to be rendered on Sundays or holidays, as the work of the board may require.

In witness whereof the said Earle B. Phelps has hereunto set his hand and seal, and the town of ——— has caused these presents to be executed by its board of health hereunto duly authorized the day and year first aforesaid.

——— ———

Witness:

——— ———.

Town of ———

By

——— ———

——— ———

——— ———

Board of Health.

A letter of proposal containing more specific details of the nature of the work was made a part of each contract. This letter was adapted to each local condition and necessarily varied in the different cases. The letter which outlined the work to be done in Belmont was as follows:

MARCH 18, 1913.

BOARD OF HEALTH OF BELMONT, MASS.

GENTLEMEN: I have given careful consideration to the work of your board with reference to the possibility of my undertaking certain duties connected therewith. I now beg to make the following offer:

In connection with similar work in other towns, I am prepared to undertake for you the following specific duties as far as they are included under the duties of the Board of Health of Belmont:

Executive and administrative.—I propose to carry out this work with the assistance of a clerk who shall be satisfactory to your board and who shall have permanent head-

quarters in Belmont. He will receive all complaints and communications and so far as necessary will transmit them to the designated agent of the board for action. The agent, whom I will designate subject to your approval and appointment, will have charge of all matters of administration, receiving his instructions directly from your board and carrying out your wishes. He will not have a permanent location in Belmont, but his whereabouts will be known at all times to the clerk and he will devote as much of his time to the actual work of your town as shall be necessary or as your board shall direct. He will take charge immediately of all cases of contagious disease and see that they are properly cared for. He will also be responsible for reporting such cases to the State board of health, for keeping all records of the board, and for supervising work of other members of our staff. He will, if desired, attend all meetings of the board and keep records thereof.

Laboratory and bacteriologist.—I propose to provide you with the services of one or more fully equipped laboratories for chemical and bacteriological analysis of milk, water, and foods, and for all diagnostic work and furthermore with the services of properly trained and qualified analysts and diagnosticians. I propose to maintain at some suitable place designated by your board a culture substation at which all material requisite for the use of physicians in taking specimens for examinations and all such materials as are distributed by the State board of health through local boards will be kept on hand and in fresh condition. There will also be at this point an incubator where cultures may be deposited late at night, thus saving twenty-four hours in the diagnosis of diphtheria.

Milk inspector and sanitary inspector.—One or more members of our staff will, subject to your approval and appointment, be designated milk inspector and sanitary inspector. The milk inspector will visit all dairies producing milk sold in Belmont with sufficient frequence to insure their proper maintenance and operation. He will also personally or through associates properly delegated, secure samples of all milk sold in Belmont at monthly intervals, and cause the same to be conveyed to the laboratory for examination. Monthly reports of the results of such examination will be made to your board. The sanitary inspector will view all markets, bakeries, etc., and will attend to all complaints of nuisances, etc.

Plumbing inspection.—The plumbing inspector will be responsible for the careful enforcement of the plumbing rules, will receive copies of all applications for permits and will see that the work done thereunder is done in accordance with the rules and, before approval and acceptance, is properly tested.

In general it will not be possible for me to indicate any definite amount of time to be given to the Belmont work on the part of these various officials, nor do I deem such a definite arrangement necessary or desirable. The work will be centralized in the hands of the delegated agent and the various members of the staff will be not only subject to his orders but within his call upon short notice. I have so organized the work that I am confident that it can be carried out expeditiously, even though the workers are obliged to cover a considerable territory. I will agree that there shall be no delays that will seriously inconvenience anyone or interfere with the efficiency of the work, and that as much of the time of these various officials will be given to the work of Belmont as shall be necessary for carrying out that work with promptness and efficiency. My own relation to the movement, which is a very real one, may serve as an additional guarantee that the work will be properly performed.

I am prepared to undertake this work for the period of one year, beginning April 1, 1913, for the lump sum of ———, and payable in equal monthly installments on or about the 15th of each month. This figure includes all expenses connected with the various items of work which I have outlined above, such as traveling expenses, all laboratory and other supplies, material for fumigation, printing all forms, etc., except for the single item of the cost of oiling in mosquito extermination. It may be further noted that this proposal does not contemplate the items of swill, local telephone,

animal inspection, or care of contagious diseases (except expenses incidental to placarding, visiting cases, and fumigating).

I am prepared to file a suitable personal bond if required and enter into any necessary form of contract with the town.

Very truly, yours,

(Signed) EARLE B. PHELPS.

APPENDIX 2.

Laboratory Equipment for a Small Board of Health Laboratory, With Approximate Costs.

Analytical balance	$125.00
Babcock machine and accessories, with special sediment head	100.00
Incubator	125.00
Microscope and accessories	125.00
1 gross diphtheria outfits, complete	15.00
1 gross typhoid and malaria outfits, complete	10.00
6 dozen sputum outfits, complete	5.00
1 gross ophthalmia loops	5.00
Glassware (see schedule)	150.40
Chemicals (see schedule)	22.35
Miscellaneous (see schedule)	78.00
Total	760.75

GLASSWARE.

200 Petri dishes.
100 1-cubic-centimeter pipettes.
100 8-ounce bottles for dilutions.
10 gross 6-inch test tubes for media.
1 counting plate.
1 gross microscope slides.
1 dozen 4-ounce stain bottles.
2 Liebig condensers, 25 inches.
6 1-liter round-bottom flasks.
6 graduated cylinders, 100 cubic centimeters, 250 cubic centimeters, and 1 liter.
6 50-cubic-centimeter burettes, glass stoppered.
6 250-cubic-centimeter evaporating dishes.
2 pounds glass stirring rod.
12 Nessler jars, 50 cubic centimeters.
1 gross 8-ounce reagent bottles.

CHEMICALS.

8 pounds acid, sulphuric.
6 pounds acid, hydrochloric.
1 pound acid, acetic.
1 pound acid, nitric.
1 pound acid, oxalic.
5 pounds alcohol.
4 ounces amidonaphthalene.
1 pound ammonium chloride.
1 pound copper sulphate.
1 pound ether.
1 ounce ferrous ammonium sulphate.

1 pound lead acetate.
1 pound mercuric chloride.
1 pound manganese sulphate.
1 pound phenol.
1 pound potassium permanganate.
1 pound potassium iodide.
5 pounds potassium hydroxide.
1 ounce potassium sulphocyanide.
1 pound silver nitrate.
1 ounce silver nitrite.
1 pound sodium thiosulphate.
1 pound sodium carbonate.
1 pound sodium chloride.
Stains and indicators.
1 ounce methyl orange.
1 ounce phenolphthalein.
1 ounce erythrosine.
1 ounce fuchsine.
1 ounce methylene blue.
1 ounce Bismarck brown.
4 ounces Wright differential blood stain.
1 pound starch (potato).
4 ounces sulphanilic acid.

MISCELLANEOUS.

5 grams No. 18 platinum wire.
1 platinum evaporating dish.
4 Bunsen burners.
4 ring stands
5 pounds rubber tubing.
5 pounds cotton batting.
6 wire baskets for tubes.
Assortment enameled iron dishes and pans.
4 special milk-collecting baskets to order.
Printed forms, etc.
1 dozen box labels.
Other small articles.

PLAGUE-ERADICATIVE WORK.

CALIFORNIA.

The following report of plague-eradicative work in California for the week ended September 5, 1914, has been received from Surg. Long, of the United States Public Health Service, in charge of the work:

SAN FRANCISCO, CAL.

Premises inspected	1,656	Poisons placed	25,000
Premises destroyed	26	Average number of traps set daily	1,734
Nuisances abated	219		

RATS COLLECTED AND EXAMINED FOR PLAGUE.

Collected	493	Found infected	None.
Examined	358		

RATS IDENTIFIED.

Mus norvegicus	272	Mus alexandrinus	77
Mus musculus	66	Mus rattus	78

RATS TAKEN FROM STEAMERS (NOT INCLUDED IN ABOVE).

Steamer *City of Para:*

Mus alexandrinus	14	Mus rattus	10

PORT COSTA, CAL.

Rats trapped in warehouses	44	Rats trapped in sugar refinery	5
Rats trapped on water front	7	Poisons placed on water front	6,800

RATS IDENTIFIED.

Mus norvegicus	12	Mus alexandrinus	14
Mus rattus	15	Mus musculus	2

Record of plague infection.

Places in California.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number rodents found infected since May, 1907.
Cities:				
San Francisco	Jan. 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 28, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties:				
Alameda (exclusive of Oakland and Berkeley).	Sept. 24, 1909	Oct. 17, 1909, wood rat.	Aug. 7, 1914	286 squirrels, 1 wood rat.
Contra Costa	May 17, 1914	None	Aug. 17, 1914	1,562 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 12, 1911	5 squirrels.
Monterey	do	do	Apr. 10, 1914	6 squirrels.
San Benito	June 4, 1913	do	July 3, 1914	35 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 31, 1910	do	July 23, 1913	25 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.

PLAGUE-INFECTED SQUIRREL.

Contra Costa County, Aug. 17, 1914, Moraga Co. land, Moraga, sec. 13, T. 1 S., R. 3 W., 1 squirrel.

Squirrels collected and examined for plague.

County.	Shot.	Examined.	Found infected.
Contra Costa	444	444	1
San Benito	85	85	None.
Santa Clara	26	26	None.
Alameda	124	124	None.
Total	679	679	1

Ranches inspected and hunted over.

Alameda County	17
Contra Costa County	49
San Benito County	10
Santa Clara County	4
Total	80

Operations on water front.

Vessels inspected for rat guards	23
Reinspections made on vessels	31
New rat guards procured	20
Defective rat guards repaired	21
Vessels on which cargo was inspected	4

Amount and description of cargo inspected.	Condition.	Rat evidence.
Steamers Enterprise and Matsonia from Hilo:		
150 sacks coffee and vegetables	O. K	None.
220 bundles hides and empty cement sacks	O. K	None.
20 cases merchandise and household goods	O. K	None.
Steamers Admiral Farragut and Congress from Seattle:		
170 sacks flour and bran	O. K	None.
60 bundles empty cement sacks and rubber tires	O. K	None.
60 cases merchandise and household goods	O. K	None.
4 crates household goods	O. K	None.

Rats trapped on wharves and water front	16	Poisons placed on vessels (pieces)	0
Rats trapped on vessels	11	Poisons placed within P. P. I. E. grounds (pieces)	0
Traps set on wharves and water front	210	Bait used on water front and vessels, bacon (pounds)	6
Traps set on vessels	118	Amount of bread used in poisoning water front (loaves)	31
Vessels trapped on	14	Poison used on water front (pounds)	15
Vessels searched for dead rats after fumigation	3		
Dead rats found on vessels after fumigation	24		
Poisons placed on water front (pieces)	9,400		

Operations are being carried on under Federal supervision on the following-named properties, labor and material being furnished by owners:

Poisoned grain and destructors.

Names.	Location.	Acres treated.		Holes treated.
		Pumps.	Grain.	
Moraga Co	Contra Costa County		1,799.95	
Hooper Co	do		1,171.72	
Peoples Water Co	do		2,090.00	
Brookwood Acres	do		400.00	
A. Texeira Ranch	Alameda County		130.00	
Planada Development Co	Merced County		1,660.00	
Morse Realty Co	do		120.00	
California Pacific Title & Insurance Co	do		60.00	
Southern Pacific right of way [1]	do	*Miles.* 7	*Miles.* 7	2,107

[1] Seven miles inspected.

The work is being carried on in the following-named counties: San Francisco, Santa Clara, Alameda, Contra Costa, San Joaquin, Merced, Stanislaus, San Benito, Santa Cruz, and Monterey.

LOUISIANA—NEW ORLEANS.

The following report of plague-eradicative work in New Orleans for the week ended September 12, 1914, has been received from Asst. Surg. Gen. Rucker, of the United States Public Health Service, in charge of the work:

OUTGOING QUARANTINE.

Vessels fumigated with sulphur	48
Vessels fumigated with carbon monoxide	11
Sulphur burned (pounds)	10,039
Coke consumed in carbon monoxide fumigation (pounds)	32,888
Outgoing freight inspected (tons)	25,291
Total packages freight inspected	202,986
Clean bills of health issued	31
Foul bills of health issued	1

OVERLAND FREIGHT INSPECTION.

Cars inspected	3,169
Cars rat-proofed	1,681
Cars condemned	7

DESTINATION OF RAILROAD CARS INSPECTED WEEK ENDING SEPT. 12.

Alabama	101
Arizona	1
Arkansas	41
California	14
Colorado	15
Connecticut	1
Florida	24
Georgia	40
Idaho	2
Illinois	433
Indiana	20
Iowa	10
Kansas	7
Kentucky	37
Louisiana	1,144
Massachusetts	1
Michigan	15
Minnesota	4
Mississippi	530
Missouri	58
Nebraska	5
New Jersey	4
New York	9
North Carolina	7
North Dakota	2
Ohio	35
Pennsylvania	13
Rhode Island	3
South Carolina	4
South Dakota	7
Tennessee	85
Texas	167
Utah	1
Washington	6
West Virginia	4
Wisconsin	6
Canada	7

FIELD OPERATIONS.

Rats trapped	7,724
Premises fumigated	4
Premises disinfected	118
Premises inspected	5,591
Poisons placed	296,953
Notices served	2,790
Buildings rat-proofed during week ending Sept. 12	389
Buildings rat-proofed to date	677
Abatements week ending Sept. 12	1,151
Abatements to date	5,213
Dead inspected	116

LABORATORY OPERATIONS.

Rats examined	4,325
Mus norvegicus	4,182
Mus alexandrinus	91
Mus rattus	50
Mus musculus	2,679
Unclassified, putrid	209
Total rodents received at laboratory	7,789
Number of suspicious rats	11
Plague rats confirmed	4

Plague rats.

Case No.	Address.	Captured.	Diagnosis confirmed.	Treatment of premises.
89	1513 Baronne Street	Sept. 7	Sept. 7	Disinfected; rat-proofing initiated; intensive trapping and poisoning.
90	Found dead in street, corner Poydras and Dryades.	Sept. 8	Sept. 8	Intensive trapping and poisoning.
91	1503 Dryades Street	Sept. 2	Sept. 10	Disinfected; rat-proofing initiated; intensive trapping and poisoning.
92	Found dead in street, corner South Rampart and Common.	Sept. 11	Sept. 11	Do.

Summary.

Suspicious human cases examined	1
Number of human plague cases	0
Necropsy	1
Total rodents captured to Sept. 12	79,543
Total rodents examined to Sept. 12	68,595
Rodent cases to Sept. 12:	
Mus rattus	5
Mus alexandrinus	3
Mus norvegicus	84
Total rodent cases to Sept. 12	92

HAWAII—HONOLULU.

The following report of plague-eradicative work in Honolulu for the week ended August 29, 1914, has been received from Surg. Trotter, of the United States Public Health Service:

Total rats and mongoose taken	438	Classification of rats killed by sulphur dioxide:	
Rats trapped	425	Mus rattus	1
Mongoose trapped	12	Average number of traps set daily	1,085
Rats found dead	0	Cost per rat destroyed.....cents..	19
Rats killed by sulphur dioxide	1	Last case rat plague, Aiea, 9 miles from Honolulu, Apr. 12, 1910.	
Examined microscopically	346		
Under examination	0	Last case human plague, Honolulu, July 12, 1910.	
Showing plague infection	0		
Classification of rats trapped:		Last case rat plague, Pacific mill, Kukuihaele, Hawaii, Jan. 30, 1914.	
Mus alexandrinus	172		
Mus norvegicus	73	Last case human plague, Pauhau Landing, Hawaii, Aug. 17, 1914.	
Mus musculus	171		
Mus rattus	9		

PORTO RICO.

The following is a summary of reports of plague-eradicative work in Porto Rico for the two weeks ended September 11, 1914, received from the sanitary service of Porto Rico:

Rodents examined for plague infection.

	Rats.	Mice.	Mongoose.
San Juan	115	60	.....
Puerta de Tierra	53	6	1
Santurce	575	39	.....
Rio Piedras	5	.....	.....
Arecibo	44	2	.....
Total	792	107	1

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.

IN CERTAIN STATES AND CITIES.

RECIPROCAL NOTIFICATION.

Minnesota.

Cases of communicable diseases referred during August, 1914, to other State or provincial health departments by the division of preventable diseases of the Minnesota State Board of Health.

Disease and locality of notification.	Referred to health authority of—	Why referred—
Diphtheria:		
Mora, Kanabec County	Schneider, Lake County, Ind..	Infected in Schneider, where sore throat is said to be epidemic.
Typhoid fever:		
International Falls, Koochiching County.	Burris, Ontario, Canada.....	Contact infection, neighbor's child, at Burris; sick with typhoid fever.
New Ulm, Brown County...	Niles, Berrien County, Mich...	Working on a farm at Niles during 3 weeks prior to date of first symptoms.
Mankato, Blue Earth County	Chicago, Cook County, Ill.....	From Chicago, June 23; sputum positive, Chicago laboratory.
Thomas Hospital, Minneapolis, Hennepin County.	La Grange, Cook County, Ill...	Resident of La Grange; sick in Thomas Hospital, Minneapolis.
St. Paul, Ramsey County...	Davenport, Scott County, Iowa.	Left St. Paul, to visit Davenport.
Tuberculosis:		
Thomas Hospital, Minneapolis, Hennepin County.	Moorland, Webster County, Iowa.	Resident of Moorland; sick in Thomas Hospital, Minneapolis.
Minneapolis, Hennepin County.	Albuquerque, Bernalillo County, N. Mex.	Left Minneapolis for Albuquerque.
Do.....	Plaza, Mountrail County, N. Dak.	Resident of Plaza; sick in Minneapolis.
Thomas Hospital, Minneapolis, Hennepin County.	Vehlen, Marshall County, N. Dak.	Resident of Vehlen; sick in Thomas Hospital, Minneapolis.
Pokegama Sanatorium, Pokegama, Pine County.	Brookings, Brookings County, S. Dak.	Resident of Brookings; sick in Thomas Hospital, Minneapolis.
St. Paul, Ramsey County...	Janesville, Rock County, Wis.	Moved from St. Paul to Janesville.

CEREBROSPINAL MENINGITIS.

State Reports for August, 1914.

Places.	New cases reported.	Places.	New cases reported.
Kansas:		Maryland, exclusive of Baltimore City—Continued.	
Harvey County	1	Queen Annes County—	
Smith County	1	Millington, R. F. D	1
Total	2	Somerset County—	
Louisiana:		Marion	1
Red River Parish	1	Total	6
Maryland, exclusive of Baltimore City:		Minnesota:	
Allegany County—		Clay County—	
Mapleside	1	Moorhead	1
Baltimore County—		Wisconsin:	
Glyndon, R. F. D	1	Milwaukee County	2
Prince Georges County—			
Westwood	1		
Clinton	1		

State Reports for February and June, 1914.

Places.	New cases reported.	Places.	New cases reported.
Mississippi (February):		Mississippi—Continued.	
Bolivar County	2	Tate County	1
Chickasaw County	1	Total	9
Coahoma County	1		
Copiah County	1		
Newton County	2	Idaho (June):	
Sunflower County	1	Shoshone County	2

City Reports for Week Ended Sept. 5, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Boston, Mass		1	Evansville, Ind		1
Brockton, Mass	1		New York, N. Y	3	8
Cairo, Ill		1	Philadelphia, Pa	3	
Cincinnati, Ohio	1	1	Pittsburgh, Pa	1	1
Dunkirk, N. Y		1			

DIPHTHERIA.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 2543.

ERYSIPELAS.

City Reports for Week Ended Sept. 5, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Ann Arbor, Mich	1		New York, N. Y		3
Boston, Mass		1	Philadelphia, Pa	3	
Chicago, Ill	3		Pittsburgh, Pa	2	
Cincinnati, Ohio	1		St. Louis, Mo	3	
Lexington, Ky	1	1	San Francisco, Cal		1
Los Angeles, Cal	3				

LEPROSY.

California—Berkeley.

During the week ended September 5, 1914, a case of leprosy was notified at Berkeley, Cal.

Texas—Houston Heights.

The State Board of Health of Texas reported that during the month of July, 1914, a case of leprosy in the person of C. L., a German woman 52 years of age, nativity Texas, had been notified at Houston Heights, Tex. The case is in charge of a physician.

MEASLES.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 2543.

PELLAGRA.

City Reports for Week Ended Sept. 5, 1914.

During the week ended September 5, 1914, pellagra was notified by cities as follows: Austin, Tex., 1 death; Galveston, Tex., 1 death; New York, N. Y., 1 death; Washington, D. C., 1 death.

PNEUMONIA.

City Reports for Week Ended Sept. 5, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Chicago, Ill.	40	19	Pawtucket, R. I.	1	1
Fall River, Mass.	3	.....	Philadelphia, Pa.	10	18
Galesburg, Ill.	1	1	Pittsburgh, Pa.	3	14
Kalamazoo, Mich.	1	1	South Bethlehem, Pa.	1	.....
Los Angeles, Cal.	11	2	Springfield, Ill.	1	1

POLIOMYELITIS (INFANTILE PARALYSIS).

State Reports for August, 1914.

Places.	New cases reported.	Places.	New cases reported.
District of Columbia	2	Virginia:	
Kansas:		Botetourt County	1
Montgomery County	1	Essex County	1
Maryland, exclusive of Baltimore City:		Fauquier County	1
Prince Georges County—		Halifax County	1
Oxen Hill	2	Lee County	1
Michigan:		Mecklenburg County	1
Ionia County—		Orange County	1
Lyons Township	1	Patrick County	1
Muskegon County—		Powhatan County	1
Casnovia	1	Princess Anne County	1
Oakland County—		Rockingham County	1
Lyon Township	2	Tazewell County	1
Washtenaw County—		Total	12
Ann Arbor	3	Wisconsin:	
Total	7	Clark County	1
Minnesota:		Green Lake County	1
Benton County—		Monroe County	1
Sauk Rapids	1	Total	3
New Jersey:			
Bergen County	1		
Essex County	1		
Total	2		

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

State Reports for February and July, 1914.

Places.	New cases reported.	Places.	New cases reported.
Mississippi (February):		Texas (July):	
Benton County	1	Dallas County—	
Holmes County	6	Dallas	1
Monroe County	1		
Panola County	1		
Pearl River County	1		
Warren County	8		
Winston County	1		
Total	19		

City Reports for Week Ended Sept. 5, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Ann Arbor, Mich	2		Grand Rapids, Mich	1	1
Binghampton, N. Y	1		New York, N. Y		1
Cambridge, Mass	1		Philadelphia, Pa	2	
Chicago, Ill	4	1			

SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 2543.

SMALLPOX.

State Reports for August, 1914.

Places.	New cases reported.	Deaths.	Vaccination history of cases.			
			Vaccinated within 7 years preceding attack.	Last vaccinated more than 7 years preceding attack.	Never successfully vaccinated.	History not obtained or uncertain.
Michigan:						
Hillsdale County—						
Hillsdale	1		1			
Kalamazoo County—						
Alamo Township	1					1
Kent County—						
Grand Rapids	2				2	
Mecosta County—						
Morton Township	1				1	
Big Rapids	1				1	
St. Clair County—						
Columbus Township	1					1
Port Huron	1				1	
Wayne County—						
Hamtramck	1				1	
Detroit	17	1			17	
Total	26	1	1		23	2
Minnesota:						
Blue Earth County—						
Mankato	2				2	
Shelby Township	1				1	
Brown County—						
Home Township	6				6	
Carlton County—						
Cloquet	1				1	

SMALLPOX—Continued.

State Reports for August, 1914—Continued.

Places.	New cases reported.	Deaths.	Vaccination history of cases.			
			Vaccinated within 7 years preceding attack.	Last vaccinated more than 7 years preceding attack.	Never successfully vaccinated.	History not obtained or uncertain.
Minnesota—Continued.						
Carver County—						
Camden Township	5					5
Goodhue County—						
Goodhue	1					1
Grant County—						
Gorton Township	8					8
Hennepin County—						
Minneapolis	3				3	
Koochiching County—						
International Falls	1				1	
Mahnomen County—						
Waubon	1					1
Olmsted County—						
Rochester	1				1	
Ramsey County—						
St. Paul	1				1	
Renville County—						
Bird Island	1				1	
Sacred Heart	1					1
Rice County—						
Faribault	1				1	
St. Louis County—						
Duluth	10			3	7	
Stearns County—						
Holdingford Township	2				1	1
St. Cloud	3				3	
Swift County—						
Appleton	4			1	2	1
Edison Township	2				1	1
Watonwan County—						
Madelia	1				1	
Total	60			4	37	19
Wisconsin:						
Barron County	1				1	
Brown County	1				1	
Columbia County	1				1	
Douglas County	4					4
Dunn County	3				3	
Jefferson County	2					2
Kenosha County	1					1
La Crosse County	3				3	
Lincoln County	3		3			
Marathon County	1					1
Marinette County	2		2			
Milwaukee County	28					28
Monroe County	3					3
Polk County	7			1	3	3
Racine County	10		1	3		6
Rock County	1			1		
St. Croix County	1				1	
Sheboygan County	1				1	
Vernon County	4				4	
Total	77		6	5	18	48

SMALLPOX—Continued.

Miscellaneous State Reports.

Places.	Cases.	Deaths.
District of Columbia (Aug. 1-31).[1]		
Idaho (June 1-30):		
Counties—		
Ada	7	
Bannock	2	
Lewis	4	
Owyhee	1	
Shoshone	6	
Total	20	
Kansas (Aug. 1-31):		
Counties—		
Allen	1	
Barton	1	
Neosho	1	
Woodson	1	
Wyandotte	6	
Total	10	
Louisiana (Aug. 1-31):		
Parishes—		
Calcasieu	3	
East Baton Rouge	12	
Terrebonne	3	
Vermillion	1	
Total	19	
Maryland (Aug. 1-31).[1]		
Mississippi (Feb. 1-28):		
Counties—		
Bolivar	3	
Coahoma	5	
Leflore	26	
Lowndes	20	
Marion	2	
Monroe	1	
Neshoba	4	
Oktibbeha	12	
Simpson	2	
Smith	10	
Tate	25	
Yazoo	7	
Total	117	
New Jersey (Aug. 1-31).[1]		
Oregon (Jan. 1-31):[2]		
Counties—		
Coos	1	
Wasco	6	
Oregon (Feb. 1-28):[3]		
County—		
Umatilla	18	
South Carolina (Aug. 1-31):		
Counties—		
Charleston	9	
Clarendon	4	
Florence	1	
Marion	1	
Spartanburg	1	
Union	1	
Total	17	
Virginia (Aug. 1-31):		
Counties—		
Albemarle	1	
Bedford	5	
Floyd	10	
Greensville	2	
Henry	5	
Lee	1	
Lunenburg	2	
Montgomery	5	
Nelson	1	
Northampton	1	
Princess Anne	4	
Pulaski	18	
Smyth	2	
Southampton	5	
Tazewell	9	
Total	71	

[1] No case. [2] Supplemental to report, p. 572. [3] Supplemental to report, p. 888.

City Reports for Week Ended Sept. 5, 1914.

Places.	Cases.	Deaths.
Berkeley, Cal	1	
Butte, Mont	2	
Chicago, Ill	1	
Detroit, Mich	6	
Kansas City, Mo	3	
Los Angeles, Cal	1	
Toledo, Ohio	2	
Washington, D. C	1	

TETANUS.

City Reports for Week Ended Sept. 5, 1914.

Places.	Cases.	Deaths.
Brownsville, Tex	1	
Chicago, Ill		3
Detroit, Mich		1
Pittsburgh, Pa		2
Ponce, P. R	[1] 1	1
St. Louis, Mo	1	1

[1] Infantile.

TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 2543.

TYPHOID FEVER.

State Reports for August, 1914.

Places.	New cases reported.
District of Columbia	57
Kansas:	
Allen County	10
Atchison County	3
Barton County	6
Brown County	4
Butler County	8
Chase County	5
Chautauqua County	1
Cherokee County	3
Cheyenne County	1
Clark County	4
Cloud County	3
Cowley County	23
Crawford County	3
Pittsburg	3
Doniphan County	4
Douglas County	4
Elk County	3
Ellsworth County	1
Ford County	3
Franklin County	9
Greenwood County	5
Harper County	3
Harvey County	15
Hodgeman County	1
Jackson County	2
Jefferson County	4
Labette County—	
Parsons	9
Leavenworth County—	
Leavenworth	4
Linn County	1
Lyon County	2
Marion County	1
Marshall County	3
McPherson County	4
Meade County	1
Miami County	3
Montgomery County	3
Coffeyville	2
Neosho County	7
Norton County	2
Osborne County	1
Ottawa County	3
Pawnee County	12
Rawlins County	1
Reno County—	
Hutchinson	6
Republic County	4
Rice County	2
Riley County	4
Rush County	2
Sedgwick County	5
Wichita	16
Seward County	1
Shawnee County	2
Topeka	3
Stevens County	2
Sumner County	10
Wabaunsee County	2
Washington County	2
Wilson County	5
Woodson County	2
Wyandotte County	2
Kansas City	5
Total	265
Louisiana:	
Acadia Parish	1
Assumption Parish	4
Avoyelles Parish	5
Louisiana—Continued.	
Bienville Parish	1
Bossier Parish	2
Caddo Parish	3
Concordia Parish	2
De Soto Parish	4
East Carroll Parish	1
East Feliciana Parish	4
Jackson Parish	4
Jeff Davis Parish	2
Lincoln Parish	2
Morehouse Parish	2
Plaquemine Parish	1
Pointe Coupee Parish	2
Sabine Parish	1
Tangipahoa Parish	1
Tensas Parish	4
Terrebonne Parish	1
Vernon Parish	1
West Feliciana Parish	1
Total	49
Maryland, exclusive of Baltimore City:	
Allegany County—	
Westport	7
Bond R. F. D.	1
Lonaconing	1
Franklin	1
Cumberland	21
Midland	2
Cumberland R. F. D.	2
South Cumberland	2
Western Maryland Hospital	1
Anne Arundel County—	
Maryland House of Correction	7
Owings	1
Eastport	1
McKendrie	1
Glenburnie	1
Waterbury	2
Robinson	1
Curtis Bay	2
Baltimore County—	
Raspeburg	2
Arlington	2
Mount Washington	1
Rossville	6
Oella	1
Riderwood	1
Chase	1
Mount Winans	3
Lansdowne	4
Hullville	1
St. Agnes Hospital	2
Govans	2
Highlandtown	2
Catonsville	1
Colgate	1
Overlea	2
Glen Arm	1
St. Marys Industrial School	1
Woodlawn	1
Owings Mills	1
Calvert County—	
Prince Frederick	2
Frazier	1
North Beach	1
Willow	2
Poplars	1
Huntingtown	1
Broomes Island	3
Bowens	1

TYPHOID FEVER—Continued.

State Reports for August, 1914—Continued.

Places.	New cases reported.
Maryland, exclusive of Baltimore City—Continued.	
Carroll County—	
New Windsor	1
Tannery	1
Manchester	1
Mount Airy	2
Woodbine	1
Sykesville	2
Caroline County—	
Bethlehem R. F. D	4
Federalsburg	2
Preston	1
Hobbs	1
Cecil County—	
Cherry Hill	1
Elkton	1
North East	1
Port Deposit	1
Charles County—	
Pomonkey	1
Waldorf	2
Pomfret	1
Indian Head	10
Bel Alton	1
Marbury	2
Pisgah	1
Rock Point	1
Dorchester County—	
Golden Hill	2
Reids Grove	4
Salem	2
Cambridge	8
Church Creek	1
Woolford	1
Wingate	1
Hurlock	1
East New Market	1
Cambridge R. F. D	7
Lloyds	4
Frederick County—	
Mount Pleasant	2
Woodsboro	1
Creagerstown	1
Jamsville	3
Lime Kiln	1
Walkersville	3
Burkittsville	4
Frederick	1
Hopeland	1
Frederick City Hospital	1
Emmittsburg	2
Libertytown	1
Garrett County—	
Bond	1
Oakland	1
Harford County—	
Havre de Grace	3
Fallston	1
Joppa	1
Churchville	1
Howard County—	
Ellicott City R. F. D	2
Marriottsville	1
Ellicott City	2
Cooksville	1
Kent County—	
Norton	2
Bethesda	1
Montgomery County—	
Ashton	2
Rockville	1
Prince Georges County—	
Lakeland	1
Berwyn	1
Croome	2
Mount Rainier	2
Laurel	1
Laurel R. F. D	1
Maryland, exclusive of Baltimore City—Continued.	
Queen Annes County—	
Centreville R. F. D	1
Millington R. F. D	2
Templeville	1
Queenstown R. F. D	1
Centreville	1
Marydel R. F. D	1
Somerset County—	
Crisfield	5
Eden	1
Pocomoke City	1
Princess Anne	3
Marion	2
St. Marys County—	
Beauvue	1
Talbot County—	
Sherwood	1
St. Michaels	1
Easton	5
Washington County—	
Hagerstown	11
Williamsport	2
Smithsburg	1
Ringgold	1
Hancock	1
Wicomico County—	
Fruitland	6
Salisbury	8
Delmar	3
Peninsula General Hospital	4
Salisbury R. F. D	1
Worcester County—	
Showell	1
Snow Hill	1
Bishop	1
Ocean City	2
Berlin	1
Total	293
Michigan:	
Alcona County—	
Caledonia Township	1
Allegan County—	
Fillmore Township	2
Alpena County—	
Alpena	10
Antrim County—	
Elk Rapids	1
Barry County—	
Maple Grove Township	1
Woodland Township	1
Bay County—	
Portsmouth Township	1
Benzie County—	
Frankfort	1
Berrien County—	
Benton Harbor	4
Niles	2
Branch County—	
Batavia Township	1
Coldwater	1
Calhoun County—	
Marshall	5
Charlevoix County—	
Boyne Falls	1
Chippewa County—	
Sault Ste. Marie	2
Clare County—	
Clare	2
Delta County—	
Maple Ridge Township	1
Eaton County—	
Eaton Rapids	1
Genesee County—	
Flint	4

TYPHOID FEVER—Continued.

State Reports for August, 1914—Continued.

Places.	New cases reported.
Michigan—Continued.	
Gogebic County—	
Ironwood	3
Grand Traverse County—	
Paradise Township	1
Gratiot County—	
Elba Township	1
Breckenridge	1
Ithaca	2
Hillsdale County—	
Waldron	1
Hillsdale	3
Houghton County—	
Lake Linden	1
South Range	2
Huron County—	
Grant Township	1
Fair Haven Township	1
Ingham County—	
Alaiden Township	3
Aurelius Township	1
Lansing Township	3
East Lansing	1
Lansing	6
Ionia County—	
Ronald Township	3
Sebewa Township	1
Isabella County—	
Chippewa Township	1
Isabella Township	2
Jackson County—	
Jackson	5
Kent County—	
Plainfield Township	3
Sparta Township	1
Tyrone Township	1
Walker Township	1
Grand Rapids	8
Lake County—	
Dover Township	1
Lenawee County—	
Macon Township	1
Woodstock Township	1
Blissfield	1
Livingston County—	
Iosco Township	1
Fowlerville	3
Mackinac County—	
St. Ignace	1
Manistee County—	
Bear Lake Township	1
Marquette County—	
Ishpeming	1
Marquette	2
Mason County—	
Ludington	1
Mecosta County—	
Big Rapids	1
Missaukee County—	
Caldwell Township	1
McBain	1
Monroe County—	
Monroe	2
Montcalm County—	
Douglas Township	1
Montmorency County—	
Briley Township	1
Muskegon County—	
Casnovia Township	1
Muskegon	2
Oakland County—	
Orion	1
Pontiac	1
Ottawa County—	
Blendon Township	1
Holland	1
Michigan—Continued.	
Presque Isle County—	
Onaway	7
Saginaw County—	
St. Charles Township	1
Saginaw	9
St. Clair County—	
Columbus Township	1
St. Joseph County—	
Sturgis	1
Sanilac County—	
Worth Township	1
Port Sanilac	1
Sandusky	1
Shiawassee County—	
Laingsburg	2
Tuscola County—	
Millington Township	1
Van Buren County—	
Geneva Township	1
Decatur	11
South Haven	1
Washtenaw County—	
Sylvan Township	1
Wayne County—	
Gratiot Township	2
Dearborn	1
Highland Park	2
Plymouth	1
St. Clair Heights	13
Detroit	83
Wyandotte	5
Wexford County—	
Greenwood Township	1
Hanover Township	2
Buckley	3
Cadillac	5
Total	284
Minnesota:	
Anoka County—	
Anoka	1
Beltrami County—	
Bemidji	1
Blackduck	1
Blue Earth County—	
Mankato	1
Mapleton Township	1
Brown County—	
New Ulm	3
Carlton County—	
Cloquet	2
Clearwater County—	
Windsor Township	1
Cottonwood County—	
Rose Hill Township	1
Crow Wing County—	
Brainerd	2
Dakota County—	
Lakeville	1
Rosemount	2
South St. Paul	2
Douglas County—	
Osakis Township	1
Freeborn County—	
Albert Lea	2
Hennepin County—	
Minneapolis	57
West Minneapolis	1
Hubbard County—	
Akeley	1
Itasca County—	
Bovey	1
Kandiyohi County—	
Gennessee Township	1

TYPHOID FEVER—Continued.

State Reports for August, 1914—Continued.

Places.	New cases reported.
Minnesota—Continued.	
Lake County—	
Fall Lake Township	3
Lyon County—	
Custer Township	3
Tracy	1
Martin County—	
Imogene Township	1
Meeker County—	
Alfalfa	1
Litchfield	1
Mille Lacs County—	
Greenbush Township	1
Princeton	1
Mower County—	
Austin	2
Olmsted County—	
Rochester	1
Otter Tail County—	
Fergus Falls	2
Henning	1
Pine County—	
Sandstone	1
Polk County—	
Hill River Township	1
Pope County—	
Langhei Township	2
Reno Township	1
Ramsey County—	
St. Paul	32
Redwood County—	
Morgan	2
Renville County—	
Bird Island	1
Rice County—	
Faribault	1
St. Louis County—	
Biwabik Township	1
Biwabik	1
Buhl	1
Duluth	23
Ely	5
Mesabe Township	1
Missabe Mountain Township	1
Stuntz Township	2
Virginia	7
Winton	1
Scott County—	
Jordan	1
Sand Creek Township	1
Sherburne County—	
Orrock Township	1
Stearns County—	
Sauk Center	1
Stevens County—	
Hancock	1
Swift County—	
Appleton	1
Benson	112
Camp Lake Township	3
Clontarf	1
Clontarf Township	4
Danvers	1
Kildare Township	1
Marysland Township	3
Swenoda Township	1
Torning Township	1
Westbank Township	1
Todd County—	
West Union	1
Wabasha County—	
Minneiska	1
Washington County—	
Stillwater	1
Watonwan County—	
St. James	1
Wright County—	
Howard Lake	1
Yellow Medicine County—	
Granite Falls	4
Total	328
New Jersey:	
Atlantic County	24
Bergen County	5
Burlington County	7
Camden County	17
Cape May County	3
Cumberland County	12
Essex County	35
Gloucester County	1
Hudson County	18
Hunterdon County	
Mercer County	10
Middlesex County	7
Monmouth County	15
Morris County	
Ocean County	1
Passaic County	8
Salem County	3
Somerset County	4
Sussex County	
Union County	5
Warren County	4
Total	179
South Carolina:	
Abbeville County	9
Aiken County	2
Anderson County	11
Barnwell County	16
Beaufort County	9
Berkeley County	5
Charleston County	34
Cherokee County	2
Chester County	1
Chesterfield County	2
Clarendon County	10
Darlington County	1
Dorchester County	3
Florence County	5
Greenville County	12
Greenwood County	2
Lancaster County	3
Laurens County	8
Marion County	2
Marlboro County	5
Oconee County	1
Orangeburg County	12
Richland County	17
Spartanburg County	40
Sumter County	8
Union County	11
Total	231
Virginia:	
Accomac County	25
Albemarle County	20
Alexandria County	4
Alleghany County	17
Amelia County	2
Amherst County	5
Appomattox County	3
Augusta County	13
Bath County	3
Bedford County	9
Botetourt County	12
Brunswick County	9
Buchanan County	6
Buckingham County	5
Campbell County	9
Caroline County	5

TYPHOID FEVER—Continued.

State Reports for August, 1914—Continued.

Places.	New cases reported.
Virginia—Continued.	
Carroll County	14
Charlotte County	2
Chesterfield County	11
Clark County	4
Craig County	4
Culpeper County	7
Dickenson County	1
Dinwiddie County	5
Elizabeth City County	12
Essex County	3
Fairfax County	4
Fauquier County	6
Floyd County	10
Fluvanna County	1
Franklin County	8
Frederick County	14
Giles County	8
Gloucester County	5
Grayson County	17
Greene County	2
Greensville County	16
Halifax County	10
Hanover County	10
Henrico County	28
Henry County	18
Isle of Wight County	10
James City County	2
King and Queen County	13
King William County	3
Lancaster County	5
Lee County	19
Loudoun County	7
Lunenburg County	6
Madison County	2
Mathews County	2
Mecklenburg County	25
Middlesex County	14
Montgomery County	11
Nansemond County	9
Nelson County	4
New Kent County	4
Norfolk County	17
Northampton County	12
Northumberland County	7
Nottoway County	5
Orange County	4
Page County	3
Patrick County	2
Pittsylvania County	7
Powhatan County	1
Princess Anne County	10
Prince Edward County	2
Prince George County	1
Prince William County	16
Pulaski County	6
Richmond County	2
Roanoke County	15
Rockbridge County	3
Rockingham County	6
Russell County	30
Scott County	14
Shenandoah County	11
Smyth County	20
Southampton County	16
Stafford County	4
Surry County	3
Sussex County	3
Tazewell County	23
Warren County	3
Warwick County	4
Washington County	17
Westmoreland County	5
Wise County	36
Wythe County	8
York County	2
Total	821
Wisconsin:	
Brown County	1
Dane County	2
Door County	1
Fond du Lac County	1
Jefferson County	2
La Crosse County	1
Lafayette County	1
Lincoln County	5
Marathon County	2
Marinette County	1
Milwaukee County	14
Racine County	1
Richland County	1
Sheboygan County	1
Vernon County	1
Washington County	1
Waushara County	1
Wood County	6
Total	43

Texas Report for July, 1914.

Places.	New cases reported.
Texas:	
Bowie County—	
Texarkana	3
Childress County—	
Childress	1
Coleman County—	
Coleman	1
Comal County	1
Dallas County—	
Dallas	34
Donley County—	
Clarendon	2
Galveston County—	
Galveston	2
Gonzales County—	
Gonzales	1
Johnson County—	
Cleburne	10
Matagorda County	1
Montague County—	
Bowie	5
Palo Pinto County—	
Mineral Wells	1
Potter County—	
Amarillo	2
Runnels County—	
Ballinger	1
Tarrant County—	
Fort Worth	21
Travis County—	
Austin	9
Van Zandt County	2
Williamson County—	
Taylor	3
Total	100

TYPHOID FEVER—Continued.

Idaho Report for June, 1914.

Places.	New cases reported.	Places.	New cases reported.
Idaho:		Idaho—Continued.	
Ada County—		Canyon County—	
Boise	1	New Plymouth	1
Bannock County—		Fremont County—	
Pocatello	1	Rexburg	3
Bonner County—		Shoshone County	1
Laclede	1	Total	9
Bonneville County	1		

Mississippi Report for February, 1914.

Places.	New cases reported.	Places.	New cases reported.
Mississippi:		Mississippi—Continued.	
Attala County	3	Marshall County	1
Bolivar County	3	Montgomery County	2
Carroll County	1	Newton County	1
Chickasaw County	22	Oktibbeha County	3
Clay County	4	Panola County	6
Coahoma County	1	Pearl River County	6
Copiah County	5	Pontotoc County	3
De Soto County	1	Prentiss County	1
Greene County	1	Scott County	3
Grenada County	2	Sunflower County	11
Harrison County	1	Tallahatchie County	4
Holmes County	5	Tate County	9
Ittawamba County	12	Tishomingo County	1
Jefferson County	3	Tunica County	4
Jones County	11	Union County	4
Lafayette County	1	Wayne County	1
Lamar County	1	Wilkinson County	2
Lauderdale County	5	Winston County	8
Lawrence County	12	Yalobusha County	5
Lee County	2	Yazoo County	2
Leflore County	1	Total	178
Lowndes County	1		
Marion County	3		

Oregon Reports for January, February, and June, 1914.

Places.	New cases reported.	Places.	New cases reported.
January:		June:	
Clackamas County	2	Baker County	1
Clatsop County	1	Benton County	1
Columbia County	2	Clackamas County	1
Gilliam County	2	Clatsop County	3
Lane County	1	Columbia County	1
Multnomah County—		Crook County	1
Portland	1	Jackson County	1
Wasco County	1	Linn County	1
Total	10	Marion County	2
		Morrow County	1
February:		Multnomah County—	
Baker County	1	Portland	4
Clackamas County	3	Washington County	1
Clatson County	1	Total	18
Lane County	2		
Marion County	1		
Multnomah County—			
Portland	3		
Tillamook County	1		
Wasco County	5		
Total	17		

TYPHOID FEVER—Continued.

City Reports for Week Ended Sept. 5, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Bayonne, N. J.	1		New Orleans, La.	3	
Boston, Mass.	11	1	New York, N. Y.	79	19
Brownsville, Tex.	1		Norristown, Pa.	2	
Butte, Mont.	1	1	North Adams, Mass.	2	
Cambridge, Mass.	2		Orange, N. J.	2	
Chelsea, Mass.	2	1	Passaic, N. J.	1	1
Chicago, Ill.	34	2	Philadelphia, Pa.	27	
Cincinnati, Ohio.	6	1	Pittsburgh, Pa.	8	1
Columbus, Ohio.	2		Providence, R. I.	11	2
Dayton, Ohio.	3	2	Roanoke, Va.	3	
Detroit, Mich.	24	2	Rochester, N. Y.	4	3
Duluth, Minn.	2	1	Sacramento, Cal.	3	
Erie, Pa.	7		St. Louis, Mo.	26	
Evansville, Ind.	1		San Francisco, Cal.	3	
Fall River, Mass.	6		Saratoga Springs, N. Y.	1	
Florence, S. C.	3		Seattle, Wash.	5	
Galveston, Tex.	1		South Bethlehem, Pa.	1	
Grand Rapids, Mich.	2		South Bend, Ind.	1	3
Hartford, Conn.	10	1	Springfield, Ill.	4	2
Johnstown, Pa.	5		Springfield, Mass.	3	1
Kansas City, Mo.	4		Springfield, Ohio.	8	
Lexington, Ky.	4		Toledo, Ohio.	3	4
Little Rock, Ark.	5		Waltham, Mass.	4	
Los Anzeles, Cal.	5		Washington, D. C.	16	3
Lynn, Mass.	1		Wheeling, W. Va.	1	
Malden, Mass.	1		Wilkes-Barre, Pa.	4	
Mobile, Ala.	1	1	Wilmington, N. C.	3	
New Bedford, Mass.	6		York, Pa.	1	
New London, Conn.		1	Worcester, Mass.	7	

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for August, 1914.

States.	Cases reported.			States.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.		Diphtheria.	Measles.	Scarlet fever.
District of Columbia.	23	7	6	Michigan.	259	32	84
Kansas.	29	20	25	Minnesota.	210	14	130
Louisiana.	10	9	3	New Jersey.	314		157
Maryland (exclusive of Baltimore city).	26	18	60	South Carolina.	235	1	7
				Wisconsin.	110	55	98

State Reports for January, February, and June, 1914.

States.	Cases reported.			States.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.		Diphtheria.	Measles.	Scarlet fever.
Idaho:				Oregon:			
June.	9	33	8	January.	18	749	46
Mississippi:				February.	5	828	2
February.	63	2,192	78	June.	28	37	4
							20

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

City Reports for Week Ended Sept. 5, 1914.

Cities.	Population as of July 1, 1914. (Estimated by United States Census Bureau.)	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Boston, Mass.	733,802	215	30	.....	15	1	14	.....	30	14
Detroit, Mich.	587,650	161	16	4	.....	.....	11	.....	4	1
New York, N. Y.	5,333,539	1,344	164	13	67	4	36	2	407	152
Philadelphia, Pa.	1,657,810	417	18	3	17	1	7	2	79	31
Pittsburgh, Pa.	564,878	141	12	2	3	.....	31	.....	20	14
St. Louis, Mo.	734,667	181	20	3	.....	.....	20	1	39	12
From 300,000 to 500,000 inhabitants:										
Cincinnati, Ohio.	402,175	102	9	.....	.....	.....	4	.....	18	12
Los Angeles, Cal.	438,914	85	9	2	2	1	3	.....	40	16
New Orleans, La.	361,221	127	28	.....	2	.....	.....	.....	25	28
San Francisco, Cal.	448,502	116	13	2	54	.....	1	.....	25	5
Washington, D. C.	353,378	95	10	.....	.....	.....	3	.....	16	5
From 200,000 to 300,000 inhabitants:										
Columbus, Ohio.	204,567	50	6	.....	1	.....	3	.....	3	4
Jersey City, N. J.	293,921	83	.....	.....	.....	.....	.....	.....	.....	3
Kansas City, Mo.	281,911	67	7	.....	.....	.....	.....	1	3	7
Providence, R. I.	245,090	79	8	2	.....	.....	1	.....	11	6
Rochester, N. Y.	241,518	62	5	1	.....	.....	.....	.....	10	4
Seattle, Wash.	313,029	47	1	.....	2	.....	2	.....	19	3
From 100,000 to 200,000 inhabitants:										
Cambridge, Mass.	110,357	30	2	.....	4	2	1	.....	8	4
Dayton, Ohio.	123,794	26	7	.....	.....	.....	3	.....	4	.....
Fall River, Mass.	125,443	44	2	.....	3	1	7	.....	5	.....
Grand Rapids, Mich.	123,227	41	1	1	1	.....	6	.....	5	2
Hartford, Conn.	107,038	24	5	.....	.....	.....	1	.....	6	.....
New Bedford, Mass.	111,230	27	.....	.....	1	.....	2	.....	11	3
Springfield, Mass.	100,375	.....	.....	.....	.....	.....	.....	.....	3	.....
Toledo, Ohio.	184,126	54	4	1	.....	.....	2	.....	28	4
Worcester, Mass.	157,732	50	7	.....	.....	.....	5	.....	7	3
From 50,000 to 100,000 inhabitants:										
Bayonne, N. J.	65,271	11	9	.....	.....	.....	.....	.....	1	.....
Berkeley, Cal.	52,105	.....	.....	.....	6	.....	.....	.....	1	.....
Binghamton, N. Y.	52,191	15	2	.....	.....	.....	.....	.....	1	4
Brockton, Mass.	64,043	20	.....	.....	.....	.....	1	.....	1	2
Duluth, Minn.	89,331	.....	.....	.....	.....	.....	.....	.....	7	2
Erie, Pa.	72,401	30	5	.....	3	.....	1	.....	4	.....
Evansville, Ind.	71,284	12	1	.....	.....	.....	.....	.....	.....	.....
Little Rock, Ark.	53,811	45	.....	.....	.....	.....	.....	.....	1	.....
Lynn, Mass.	98,207	27	1	.....	.....	.....	.....	.....	7	2
Mobile, Ala.	55,573	17	2	.....	.....	.....	.....	.....	1	2
Passaic, N. J.	66,276	19	1	.....	2	.....	1	.....	3	1
Pawtucket, R. I.	56,901	17	.....	.....	.....	.....	.....	.....	.....	1
Saginaw, Mich.	53,988	13	3	.....	1	1	.....	.....	2	1
South Bend, Ind.	65,114	11	.....	.....	.....	.....	.....	.....	.....	2
Springfield, Ill.	57,972	17	.....	.....	.....	.....	.....	.....	.....	.....
Springfield, Ohio.	50,058	7	.....	.....	.....	.....	.....	.....	.....	.....
Wilkes-Barre, Pa.	73,660	17	3	.....	.....	.....	2	.....	8	2
Yonkers, N. Y.	93,383	17	1	.....	.....	.....	.....	.....	9	1
From 25,000 to 50,000 inhabitants:										
Alameda, Cal.	26,330	.....	.....	.....	2	.....	.....	.....	1	1
Austin, Tex.	33,218	16	1	.....	.....	.....	.....	.....	.....	.....
Butte, Mont.	41,781	.....	1	1	.....	.....	1	1	3	2
Chelsea, Mass.	32,452	15	1	1	.....	.....	1	.....	4	1
Elmira, N. Y.	37,816	6	1	.....	.....	.....	1	.....	.....	.....
Everett, Mass.	37,381	9	2	.....	.....	.....	.....	.....	.....	.....
Galveston, Tex.	20,289	18	2	.....	.....	.....	.....	.....	.....	.....
Fitchburg, Mass.	40,507	7	1	.....	.....	.....	.....	.....	2	.....
Kalamazoo, Mich.	45,842	9	.....	.....	.....	.....	.....	.....	.....	.....
La Crosse, Wis.	31,367	8	.....	.....	.....	1	.....	.....	.....	.....
Lexington, Ky.	38,819	19	.....	.....	.....	.....	1	.....	1	3
Malden, Mass.	48,979	14	3	.....	.....	.....	1	.....	2	2
Medford, Mass.	25,240	7	.....	.....	.....	.....	.....	.....	.....	2
Newport, Ky.	31,517	12	3	.....	.....	.....	2	.....	2	2

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

City Reports for Week Ended Sept. 5, 1914—Continued.

Cities.	Population as of July 1, 1914. (Estimated by United States Census Bureau.)	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 25,000 to 50,000 inhabitants—Continued.										
Newport, R. I.	29,154	9								1
Newton, Mass.	42,455	7							1	
Niagara Falls, N. Y.	35,127	20	1							1
Norristown, Pa.	30,265	8	1							
Orange, N. J.	31,968	6	2							
Racine, Wis.	44,528	6							1	
Roanoke, Va.	40,574	13	16	1			1		1	
Sacramento, Cal.	62,717	8			4				1	1
San Diego, Cal.	48,900		3						1	1
South Omaha, Nebr.	26,368	14								
Taunton, Mass.	35,631	16								2
Waltham, Mass.	29,688	4							1	1
West Hoboken, N. J.	40,647		4	1			1		5	
Wheeling, W. Va.	42,817	5	3							1
Wilmington, N. C.	27,781	11	2						1	
Less than 25,000 inhabitants:										
Ann Arbor, Mich.	14,948	9			1		5		5	
Beaver Falls, Pa.	13,100						1			
Brownsville, Tex.	12,310				1					
Cairo, Ill.	15,392	14	1	2						2
Clinton, Mass.	13,075	3	1						1	
Concord, N. H.	22,291	13								1
Dunkirk, N. Y.	19,607	6	1							
Florence, S. C.		6	1							
Galesburg, Ill.	23,570	6	1						1	1
Grand Haven, Mich.		?								
Harrison, N. J.	16,160	3	2				1		1	
Kearney, N. J.	21,967	7	2							
Key West, Fla.	21,150	10								1
Massillon, Ohio.	14,912	5			1					
Melrose, Mass.	16,887	3	1						1	
Montclair, N. J.	24,782	4								
Muscatine, Iowa.	17,074	2								
Newburyport, Mass.	15,147	4								1
New London, Conn.	20,557	11								
North Adams, Mass.	22,019	7							3	1
Palmer, Mass.	8,955	3								
Pascagoula, Miss.					4					
Plainfield, N. J.	22,755	7			2		1			
Pottstown, Pa.	16,408	3	1							1
Saratoga Springs, N. Y.	12,813	13							1	
South Bethlehem, Pa.	22,840	1	1						1	1
Steelton, Pa.	15,126	5								
Vineyard Haven, Mass.		1								
Wilkinsburg, Pa.	21,701	3							5	

FOREIGN REPORTS.

CHINA.

Plague—Plague-Infected Rats—Hongkong.

During the week ended August 1, 1914, 4 cases of plague with 4 deaths were notified in Hongkong.

During the same period 1,718 rats were examined for plague infection. Two plague-infected rats were found.

Examination of Rats—Shanghai.

During the week ended August 8, 1914, 203 rats were examined at Shanghai for plague infection. No plague-infected rat was found.

CUBA.

Plague—Santiago.

A case of plague was confirmed at Santiago, Cuba, September 17, 1914. The patient came from El Caney. On September 23, 1914, a fatal case of plague was notified at Santiago.

ECUADOR.

Plague—Plague-Infected Rats—Guayaquil.

During the month of July, 1914, a fatal case of plague was notified at Guayaquil. During the same period the finding of a number of plague rats in many parts of the city was reported.

ITALY.

Plague—Catania.

Plague is reported present at Catania.

JAPAN.

Plague—Yokohama.

During the week ended August 22, 1914, a fatal case of plague was notified at Yokohama, making a total from the outbreak of the disease May 23, 1914, of 24 cases with 20 deaths.

MEXICO.

Leprosy—Mazatlan.

Leprosy was reported present at Mazatlan August 22, 1914, with 150 cases. One death from the disease was notified in January and 1 in February, 1914.

RUSSIA.

Cholera.

Cholera has been notified in Russia as follows: Government of Podolia, July 19 to 25, 1914, 104 cases with 39 deaths occurring in two districts; July 26 to August 2, 1914, 150 cases with 46 deaths occurring in four districts.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

Reports Received During Week Ended Sept. 25, 1914.

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

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Dutch East Indies:				
Celebes	July 19-25	2	2	
Moluccas—				
Menado	do	3	1	
India:				
Bombay	Aug. 2-15	66	49	
Coconada	July 18-24		5	
Calcutta	July 19-Aug. 1		11	
Madras	Aug. 2-15	57	48	
Negapatam	July 19-25		2	
Indo-China:				
Cholon	July 1-10	4		Jan. 1-June 10: Cases, 146;
Saigon	July 21-Aug. 3	3		deaths, 77.
Straits Settlements:				
Singapore	July 12-25	13	12	
Turkey in Europe:				
Viza	July 22	1		
Turkey in Asia:				
Eski-Cheri	July 23-24	2	1	
Tagadima	July 29	2		

PLAGUE.

Ceylon:				
Colombo	July 26-Aug. 8	19	18	
China:				
Amoy				Aug. 10, diminishing. Jan. 1-June 11: Cases, 1,156.
Canton				
Hongkong	July 26-Aug. 8	10	10	
Pakhoi	June 18	2		From a vessel from Hongkong. Apr. 3-June 18: Cases, 100. In Kăn-lai and San-hu, 20 miles distant.
Cuba:				
El Aceite (near El Caney)	July 27-Aug. 2	4		Including 2 cases previously reported from vicinity of El Caney; removed to Santiago and previously reported from Santiago.
Santiago	Sept. 17	1		From El Caney. Total, June 30-Aug. 14: Cases, 10. deaths, 3; 1 of these deaths was a case from El Aceite.
Do	Sept. 23	1	1	
Ecuador:				
Guayaquil	July 1-31	1	1	
Egypt				Jan. 1-Aug. 16: Cases, 184; deaths 95.
Alexandria	Aug. 13-16	1		
Cairo	July 13-Aug. 5	3	3	
Provinces—				
Fayoum	Aug. 13	1		
India				July 5-Aug. 1: Cases, 1,650 deaths, 1,313.
Bassein	July 19-25		2	
Bombay	Aug. 2-15	25	19	
Calcutta	July 19-Aug. 1		8	
Moulmaine	July 19-25		10	

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

Reports Received During Week Ended Sept. 25, 1914—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Indo-China				Jan. 1-June 10: Cases, 1,414; deaths, 1,146. June 11-July 20: Cases, 132.
Cholong	Jan. 1-July 20	81		
Phanitet	Jan. 1-July 10	389		
Phanrang	do	852		
Saigon	July 21-Aug. 3	34	17	
Soctrang	May 1-July 10	22		
Italy:				
Catania				Reported present.
Tripoli				July 15, present in Azizia, Tarhuna, and Zanzur, vicinity of Tunis.
Turkey in Asia:				
Chios	Aug. 2			Epidemic.
Kut	July 6		1	From a steamboat from Bagdad to Basra.
Turkey in Europe:				
Saloniki	Sept. 15	3		

SMALLPOX.

Argentina:				
Buenos Aires	June 1-30		1	
Australia:				
New South Wales—				
Sydney				July 24-Aug. 6: Cases, 31 in the metropolitan area, and 17 cases in the country districts.
Canada:				
Quebec	Sept. 5-12	1		
Vancouver	July 31-Sept. 5	2		
Ceylon:				
Colombo	July 26-Aug. 8	1	1	
China:				
Shanghai	July 20-Aug. 9		3	
Germany				Aug. 16-22: Case, 1.
Mexico:				
Chihuahua	Aug. 31-Sept. 6		4	
Vera Cruz	Aug. 31-Sept. 5	1		
Turkey in Europe:				
Constantinople	Aug. 9-15		1	
Saloniki	Aug. 16-22		1	

Reports Received from June 27 to Sept. 18, 1914.

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Ceylon:				
Colombo	June 14-20	1	1	
Uda Pusselawa, district	June 7-13			Present in Kumbalagamuwa and the neighboring tea estates.
China:				
Amoy—				
Kulangsu	Aug. 1	1		
Hankow	July 12-18	1		From up-country districts.
Chaochow fu	July 4			Present.
Canton	Jan. 1-Apr. 30	4		
Hongkong	May 17-23	1	1	
Dutch East Indies				June 6-13: In Bali and Lombok: Cases, 44; deaths, 23.
Java—				
Batavia	Aug. 28-July 18	2	2	
Moluccas—				
Menado	June 21-27	42	14	
India:				
Bassein	Apr. 26-June 20	82	64	
Bombay	May 17-Aug. 1	132	76	
Calcutta	May 10-July 18		236	
Madras	May 31-Aug. 1	105	72	Aug. 17, present.

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

Reports Received from June 27 to Sept. 18, 1914—Continued.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India—Continued.				
Moulmine	June 7–13	1	1	
Negapatam	May 14–July 13	28	28	
Rangoon	Apr. 1–June 30	10	9	
Indo-China				Jan. 1–May 10: Cases, 125; deaths, 64. May 21–June 20: Cases, 22.
Battambang	June 11–20	4		
Saigon	June 2–July 18	30	12	
Persia:				
Anzali	June 15	1		
Philippine Islands:				
Manila	July 4–18	17	15	
Russia:				
Podolia				July 19–Aug. 2: Cases, 254; deaths, 85.
Bratzlaw	July 26–Aug. 2	1		
Jampol	July 19–Aug. 2	25	8	
Letichev	July 10	2	2	
Litine	July 26–Aug. 8	8	3	
Vinnitza	July 19–Aug. 2	220	74	
Siam:				
Bangkok	Apr. 19–June 13		253	
Straits Settlements:				
Singapore	May 10–July 5	83	74	
Turkey in Europe:				
Adrianople	May 14–19		2	
Constantinople	July 15	1		

YELLOW FEVER.

Brazil:				
Bahia	May 10–Aug. 15	18	15	
Pernambuco	May 1–15		1	
Ecuador:				
Guyaquil	May 1–31	3	1	
Venezuela:				
Caracas	June 1–30	1	1	
Maracaibo	June 15			Present in light form. No cases since.

PLAGUE.

Brazil:				
Bahia	May 17–Aug. 22	9	8	
Pernambuco	May 1–July 31		3	
British East Africa:				
Mombasa	June 1–30		1	
Ceylon:				
Colombo	May 19–July 25	102	91	
China				Jan. 1–Apr. 30, present in Hokschan, Shuntak, Tangsching, and Tungkun. Apr. 3–17, present in Kan-lai and San-hu, 20 miles distant from Pakhoi. June 6, still present in vicinity of Swatow. June 20, improving in the Chaochow and Puning districts.
Amoy	June 20–July 18			Present: July 13, present in inland villages.
Kulangsu	May 20	1		
Canton	Jan. 1–Apr. 30	378		
Chinchew	May 30–June 6			Present 30 miles north from Amoy.
Fatshan	May 13			Present.
Hongkong	May 10–July 25	898	736	Total, Jan. 4–July 25: Cases, 2,117; deaths, 1,669.
Cuba				Total, Mar. 5–Aug. 14: Cases, 43; deaths, 9.
El Aceite (near El Caney)	July 27–Aug. 2	4		Including 2 cases previously reported from vicinity of El Caney; all removed to, and previously reported as from Santiago.
Santiago				June 30–Aug. 14: Cases, 10; deaths, 3.

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

Reports Received from June 27 to Sept. 18, 1914—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Dutch East Indies:				
Provinces				Total, Apr. 1–June 30: Cases, 3,787; deaths, 3,885.
Kediri	Apr. 1–June 30	718	692	
Madioen	do	252	220	
Pasoeroean	do	2,628	2,301	
Surabaya	do	189	172	
Ecuador:				
Guayaquil	May 1–June 30	6	3	
Egypt				Total, Jan. 1–Aug. 5: Cases, 175 deaths, 92.
Alexandria	June 2–Aug. 12	26	14	
Damietta	July 17	1		
Port Said	June 9–July 29	19	8	
Provinces—				
Assiout	May 25–June 20	5	1	
Charkieh	July 13	1	1	
Fayoum	May 27–July 5	7	2	
Garbieh	July 24	1		
Gizeh	May 27–June 24	6	3	
Menouf	June 17	1		
Minieh	May 23–July 12	10	5	
German East Africa:				
Dar es Salaam	May 2–June 10	7	3	
Muanza	Feb. 21–Mar. 18	7	5	
Great Britain:				
Liverpool	Aug. 8–12	9	3	
Hawaii:				
Paauhau	Aug. 17	1	1	
India				Total, Apr. 27–July 4: Cases, 45,955; deaths, 40,498.
Bassein	Apr. 26–June 20	31	29	
Bombay	May 17–Aug. 8	514	437	
Calcutta	May 10–July 18		146	
Karachi	May 24–July 18	28	27	
Maulmine	Apr. 26–July 18	73	72	
Rangoon	Apr. 1–June 30	557	524	
Indo-China				Total, Jan. 1–Apr. 10: Cases, 1,249; deaths, 1,114. May 11–June 20: Cases, 121.
Cholon	May 11–June 20	17		
Pnum Penh	do	24		
Saigon	May 19–July 20	87	27	
Japan				Total, Jan. 1–June 30: Cases, 66; deaths, 57.
Hodogaya	June 9–July 3	3		Near Yokohama.
O-No district	June 9–15	1		
Taiwan (Formosa)—				
Kagi	May 3–Aug. 8	303	273	
Tokyo	June 22–Aug. 8	14	4	Total, Apr. 18–July 25: Cases, 45.
Yokohama	July 5–Aug. 15	4	4	And vicinity. Total, May 23–Aug. 15: Cases, 23; deaths, 19.
Mauritius	Apr. 17–23	2		
Peru:				
Ancachs				No reports of deaths received.
Casma				Total, Feb. 9–Mar. 22: Cases, 4 including 2 cases, p. 1319, pt. 1
Chimbote	Mar. 23–May 2			Present.
Quarhuay (Huaylas)	do			Do.
Samanca	do			Do.
Arequipa—				
Mollendo	Mar. 23–July 5	14		
Cahamarca—				
Contumaza	Mar. 23–May 2	3		
Lambayeque—				
Chiclayo	do	3		
Guadalupe	do	1		
Libertad—				
Huacamarca (Otzuco)	Mar. 23–May 30			Do.
Pichipampa (Otzuco)	Mar. 24–30	4		
Salavarry	Mar. 23–May 2	1		
San Pedro	do	8		From Pacasmayo.
Trujillo	Mar. 23–June 7	16		
Lima—				
Unigambal (Santiago de Chuco)	do	16		
Lima	Mar. 23–July 5	17		
Surco (Matucana)	do	11		July 7, still present.

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

Reports Received from June 27 to Sept. 18, 1914—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Peru—Continued.				
Piura—				
Catacaos	....do	4		
La Huaca	June 8–July 5	1		
Piura	Mar. 23–July 5	12		
Philippine Islands:				
Manila	May 17–July 25	5	5	May 17, 1 case from s. s. Taisang; from Amoy, May 23, 1 case from s. s. Linan from Amoy, June 12–20, a fatal case from s. s. Linan from Amoy; June 17 a fatal case in the Philippine General Hospital.
Cebu				May 20, 1 case on s. s. Rubi from Hongkong.
Russia:				
Astrakhan government				Total, May 25–July 15: Cases, 49; deaths, 46.
Kirghis steppe—				
Betas-Tschagal	May 25–July 15	2		
Bulanai	May 25–June 14	10	10	7 of these cases pneumonic.
Manyseh-Tschagal	....do	5		
Kalmuck steppe—				
Archanskoge-Tebe	....do	4		
Gubja	....do	4		
Schitkur	....do	1		
Senegal:				
Dakar	May 15	12		May 17–23, 5 deaths daily among natives.
Siam:				
Bangkok	Apr. 19–June 13		9	
Straits Settlements:				
Singapore	May 10–16	2	2	
Turkey in Asia:				
Basra	June 24–July 10	16	8	
Beirut	June 16–Aug. 1	4		
Jaffa	June 5–27	4	3	
Smyrna	July 2	1		
Zanzibar:				
Zanzibar	July 1–14	5	4	

SMALLPOX.

Algeria:				
Departments—				
Algiers	Mar. 1–May 31	7		
Constantine	....do	7		
Oran	....do	57		
Arabia:				
Aden	June 10–16		1	
Australia:				
New South Wales—				
Sydney				Total May 8–July 23: Cases, 154 in the metropolitan area and 45 cases in the country districts.
Western Australia—				
Bunbury quarantine station.	May 5–June 12	8	1	From s. s. Kilchattan, from Bombay, including previous report.
Austria-Hungary:				
Galicia	May 17–23	10		
Upper Austria	....do	3		
Belgium:				
Liege	June 1–6		3	
Brazil:				
Bahia	June 1–Aug. 8	14		
Para	May 24–30		1	
Pernambuco	May 1–July 31		34	
Rio de Janeiro	May 10–Aug. 1	1,089	164	
Canada:				
British Columbia—				
Vancouver	Aug. 18–31	2		
Manitoba—				
Winnipeg	June 14–July 25	8		
Ontario—				
Hamilton	Aug. 1–31	3		
Niagara Falls	July 15–21	1		
Ottawa	July 26–Aug. 1	1		

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

Reports Received from June 27 to Sept. 18, 1914—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
Prince Edward Island—				
Charlottetown	July 16–22	1		
Quebec—				
Quebec	July 11–Aug. 8	2		
Canary Islands:				
Teneriffe—				
Santa Cruz	June 28–Aug. 15		10	
Ceylon:				
Colombo	May 19–July 25	3	1	
Uva district—				
Passara	June 7–13	39	11	Among coolies from India.
China				May 16–23, present in Kaying and increasing in Choa Chow.
Amoy	May 17–June 13			Present.
Canton	Jan. 1–Apr. 30	21		
Chungking	May 23			Endemic.
Dairen	June 7–July 4	2		
Hongkong	May 10–July 18	15	12	Total Jan. 4–May 30: Cases, 93; deaths, 65.
Nanking	May 23			Always prevalent.
Newchwang	June 13			Do.
Pakhoi	Apr. 17			Present, and in San-hu, 20 miles distant.
Shanghai	May 18–July 12	10	13	Deaths among natives.
Tientsin	June 6	1		
Tsingtau	May 19–July 5	21	3	
Dutch East Indies:				
Borneo	May 17–June 27	301	63	In the western part.
Java				In the western part. May 3–July 11: Cases, 1,243; deaths, 252, including Batavia.
Batavia	May 3–July 11	79	27	
Egypt:				
Alexandria	June 4–Aug. 12	19	9	
Cairo	May 21–July 29	170	66	
Port Said	May 21–June 6	4		
France:				
Bordeaux	June 7–July 11		4	
Marseille	May 1–31		2	
Paris	May 24–July 11	23	1	
Germany				May 31–July 11: Cases, 9.
Hamburg	June 7–27	5		
Kehl	May 1–31		1	
Gibraltar	June 8–27	1	1	
Great Britain:				
Leeds	June 6–July 18	4		
Southampton	June 29–July 4	1		
Greece:				
Athens	July 6–12		1	
India:				
Bombay	May 19–Aug. 1	68	42	
Calcutta	May 10–July 18		187	
Karachi	May 24–July 25	13	4	
Madras	May 17–Aug. 1	21	10	
Rangoon	Apr. 1–June 30	9	1	
Indo-China:				
Saigon	May 12–18	2		
Italy:				
Turin	July 20–26	2		
Japan				Total Jan. 1–June 30: Cases, 350; deaths, 77; exclusive of Taiwan.
Kobe	June 19–23	1		
Nagasaki	May 18–Aug. 2	55	14	
Taiwan (Formosa)	May 3–Aug. 8	15	6	
Yokohama	June 23–29	1		
Mexico:				
Chihuahua	May 18–Aug. 29		41	
Juarez	Aug. 1	2		
Mazatlan	June 17–30	2	1	
Mexico	Jan. 17–Feb. 21	99	16	
Monterey	June 30–Aug. 16		8	
Tampico	May 11–July 31		70	
Vera Cruz	June 1–July 25	15	6	
Norway:				
Trondhjem	June 1–July 31	12		

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

Reports Received from June 27 to Sept. 18, 1914—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Peru:				
Callao	June 22	.....	.....	Decreased.
Lima	....do	.....	.....	Do.
Portugal:				
Lisbon	June 14–Aug. 15	9	.....	
Russia:				
Batum	Feb. 1–Apr. 30	7	.....	
Moscow	May 10–July 18	40	3	
Odessa	May 10–Aug. 4	6	.....	
Riga	May 31–July 11	12	.....	
St. Petersburg	May 24–July 4	75	19	
Vladivostok	Apr. 22–May 13	8	1	
Warsaw	Feb. 1–Apr. 25	92	44	
Servia:				
Belgrade	May 25–July 19	12	2	
Spain:				
Almeria	July 1–31	.....	1	
Barcelona	June 14–July 31	.....	28	
Cadiz	May 1–31	.....	5	
Madrid	June 1–30	.....	5	
Valencia	June 7–Aug. 15	47	12	
Switzerland:				
Basel, Canton	May 31–June 20	14	.....	
Geneva	July 5–11	1	.....	
Grisons, Canton	June 7–13	1	.....	
Zurich, Canton	July 19–25	1	.....	
Turkey in Asia:				
Beirut	June 1–Aug. 15	41	18	
Damascus	Mar. 15–July 11	570	277	
Jerusalem	May 3–June 25	33	2	
Mersina	Aug. 2–8	2	.....	
Smyrna	May 13–June 13	.....	5	
Trebizond	May 19–June 27	.....	.....	Present.
Turkey in Europe:				
Constantinople	June 14–July 11	.....	3	
Saloniki	May 31–Aug. 15	15	43	June 6: Present in a mild form, among 20,000 refugees from Asiatic Turkey, Chio, and Mitylene.
Union of South Africa:				
Pretoria	May 9–23	1	.....	

SANITARY LEGISLATION.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

MISSISSIPPI.

Privies—Location, Construction, Care, and Disposal of Contents. (Reg. Bd. of H., Aug. 17, 1914.)

SECTION 1. No privy pit, cesspool or reservoir into which any privy, water-closet, stable, sink, or other receptacle of refuse or sewerage is drained, shall be constructed or maintained in any situation or in any manner whereby, through leak or overflow of its contents, it may cause pollution of any well, spring, or other source of water used for drinking or culinary purposes; nor shall the overflow from any such reservoir or receptacle be permitted to discharge into any public place or in anywise whereby danger to health may be caused. And every such pit, reservoir, or receptacle shall be cleaned and the contents thereof removed at such times and under such precautions as the State board of health may prescribe.

SEC. 2. In cities, towns, and villages, incorporated and unincorporated, all human excreta shall be deposited in sewers, septic tanks, vaults, privies, or in incinerators of special construction as approved by the State board of health.

SEC. 3. No person, firm, or corporation shall own, maintain, or rent any privy in any incorporated or unincorporated city, town, or village, unless the same shall be so constructed as to prevent the soil from contamination; and to prevent the access of flies to the excrement deposited therein by means of wire gauze, in the event there are openings that permit the entrance of flies, and moreover, that the privy must be so located that the removal of the receptacles may be accomplished without difficulty.

SEC. 4. All dry closets shall be kept as free from odor as is possible and for this purpose dry pulverized earth, ashes, or chloride of lime shall be used at all times to cover the excreta.

Sec. 5. Where persons are employed or intended to be employed in any trade, occupation, or business, there shall be provided sufficient and suitable privy conditions having regard for the number of persons employed, or in attendance; and also where persons of both sexes are employed, or intended to be employed, sufficient and separate privy conditions shall be provided for each sex. The owners of property shall be held responsible for the violation of this regulation.

SEC. 6. Dry closets shall be constructed in accordance with plans and specifications furnished by the State board of health.

SEC. 7. Dry closets provided with receptacles for receiving excreta shall be cleaned at least once a week from April 1 to December 1, and at least once every two weeks from December 1 to March 31, inclusive, or as often as may be necessary.

SEC. 8. No part of the contents of the privy shall be removed therein nor shall the same be transported through or over any streets or highways, except as the same shall be transported by the means of some conveyance so as to prevent contact with flies or exposure to the open air, during the process of such removal or transportation.

SEC. 9. Human excreta shall not be used for fertilizing purposes for gardens or crops, but shall be disposed of as provided for elsewhere in these regulations.

SEC. 10. No privy shall be maintained in any room, or shall it have direct connection with any room, wherein any kind of exposed food or foodstuff is stored, prepared, or handled.

SEC. 11. All privies located in or near public buildings, such as courthouses, depots, hotels, and schoolhouses, must be well lighted and ventilated, and kept in a sanitary condition at all times.

SEC. 12. No insanitary privy shall be maintained by any person near to a dairy, meat market, bakery, grocery store, or other place where food is stored, prepared, or handled. This has reference to such food as can be contaminated.

SEC. 13. All vaults used for the reception of excreta shall be of water-tight construction and shall be made fly proof. Moreover, all privy vaults within the limits of any city or town shall not be less than 5 feet deep, constructed of brick, seated in cement, or of concrete construction.

SEC. 14. No privy, vault, water-closet, cesspool, stable drain, or sink shall open into any ditch, stream, or drain, except into the public sewers of any city or into disposal tanks properly designed for such purpose.

SEC. 15. All sewer drains leading out to vaults or disposal plants shall be of standard construction, and no sewer drain or outlet from any sewage disposal plant shall empty into any lake, pond, creek, stream, or open field unless all possible provision is made to prevent the contamination of any water supply. Nor shall any such drain or outlet be allowed to become obnoxious or dangerous to public health.

SEC. 16. No pit privy shall be constructed within 200 feet of a well or spring. Furthermore, it shall always be located so that the drainage from the privy will be away from the water supply and in such a position as to avoid overflow of its contents either by seepage water or surface drainage.

SEC. 17. No pit closet shall be constructed wherever there is a gravel bed or a distinctly limestone formation permitting free circulation of underground water, but such a closet can be used wherever there is a compact soil.

SEC. 18. All privy vaults must be cleaned at least once a year and whenever the contents reach a point within one foot of the ground surface. The contents of such a vault must be first of all disinfected and deodorized by powdered calcium hypochloride, if necessary drying the contents with this disinfectant.

SEC. 19. No abandoned well or deep well shall be used for sewage disposal or a receptacle for household waste.

SEC. 20. A pit privy shall be filled with dirt whenever the contents reach a level within one foot of the ground surface, and the building moved over a new pit of the same construction.

SEC. 21. No person shall misuse or abuse a public toilet of any depot, schoolhouse, hotel, or other public building either by writing upon the wall or interfering with the plumbing of such toilets by throwing therein trash of any kind or otherwise.

SEC. 22. The walls and floors of toilets for public use shall be free from indecent writing or other defacement and also the accumulation of filth and spit. This shall be done by frequent scrubbing and repainting.

SEC. 23. Every building used for public-school purposes in Mississippi shall be provided with two privies and maintained in accordance with the plans and specifications of the State board of health. One of these shall be so located as to be adapted for use of the girls and the other for the boys.

SEC. 24. The term "privy" shall be held to mean any building or part of building used or intended to be used for the reception of human excreta and which is not connected with the public sewer or some duly authorized system of sewage disposal so as to immediately remove such material from such building.

Adopted August 17, 1914.

SOUTH CAROLINA.

Births and Deaths—Registration of. (Act Sept. 1, 1914.)

SECTION 1. That the State board of health shall establish a bureau of vital statistics, and provide an adequate system for the registration of births and deaths, by formulating and enforcing rules promulgating and enforcing rules and regulations prescribing the method and form of making such registration.

SEC. 2. That the secretary of the State board of health shall be the State registrar of vital statistics, and it shall be his duty to carry into effect the rules, regulations, and orders of the State board of health. The board shall provide suitable apartments, properly equipped with fireproof vaults and filing cases, for the permanent preservation of all official records.

SEC. 3. That for the purposes of the act the State registrar shall divide the State into registration districts, defining and designating the boundaries thereof, and appointing local registrars in each district.

SEC. 4. That each local registrar shall be paid the sum of 25 cents for each birth certificate and each death certificate properly and completely made out and registered with him, correctly recorded and properly returned by him to the State registrar, as required by the rules and regulations. And in case no births and no deaths were registered during any month, the local registrar shall be entitled to be paid the sum of 25 cents for each report to that effect, but only if promptly made in accordance with the rules and regulations. All amounts payable to a registrar under the provisions of this section shall be paid by the treasurer of the county in which the registration district is located, upon certification by the State registrar. And the State registrar shall annually certify to the treasurers of the several counties the number of births and deaths properly registered, with the names of the local registrars and the amount due each at the rates fixed herein.

SEC. 5. That the State registrar shall, upon request, furnish any applicant a certified copy of the record of any birth or death registered under the provisions of this act, for the making and certification of which he shall be entitled to a fee of 50 cents, to be paid by the applicant. And any such copy of the record of a birth or death, when properly certified by the State registrar to be a true copy thereof, shall be prima facie evidence in all courts and places of the facts therein stated. For any search of the files and records, when no certified copy is made, the State registrar shall be entitled to a fee of 50 cents for each hour or fractional part of an hour of time of search, to be paid by the applicant. And the State registrar shall keep a true and correct account of all fees by him received under these provisions, and turn the same over to the State treasurer each month.

SEC. 6. That any person, firm, or corporation who shall violate any rule, regulation, or order of the State board of health relative to recording, reporting, or filing information for the bureau of vital statistics or who shall willfully neglect or refuse to perform any necessary or reasonable duties imposed upon them by said orders, or who shall furnish false information for the purpose of making incorrect records for said bureau, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not less than $5 nor more than $100, or be imprisoned in the county jail not exceeding 30 days, or suffer both fine and imprisonment in the discretion of the court.

SEC. 7. That all laws and parts of laws in conflict with the provisions of this act are hereby repealed; and no system for the registration of births and deaths shall be continued or maintained in any of the several municipalities of this State other than the one provided for and established by this act.

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

BUTTE, MONT.

Foodstuffs—Production, Care, and Sale. (Ord. 1144, June 4, 1914.)

ARTICLE 1. *Definitions.*—SECTION 1. The word "person" as used in this ordinance shall be construed to include and mean the words person, firm, society, association, copartnership, corporation, or individual. The singular shall be construed to mean and include the plural and the masculine and the feminine.

ART. 2. *Licenses or permits.*—SEC. 2. No person shall engage in the business of restaurant, hotel, lunch counter, butcher shop, grocery, delicatessen, milk depot, fruit store, ice-cream parlor, or other place where food or food products are stored, prepared, handled, or sold without first procuring a license or permit from the city board of health showing that the building to be occupied is in a sanitary condition and complies with the requirements of the health ordinances. No owner or agent shall rent, lease or let any building or part thereof for the purpose of storing, handling or selling any food or food products whatsoever without first procuring a license or permit from the city board of health showing that the building or part thereof to be occupied is in a sanitary condition and complies with the requirements of the health ordinances.

SEC. 3. Every owner or proprietor of any restaurant, hotel, lunch counter, butcher shop, grocery, delicatessen, fruit store, milk depot, ice-cream parlor, confectionery store, or other place where food or food products are handled or sold wishing to sell or transfer his property or business to another shall at the time of such sale or transfer procure and deliver to the purchaser a certificate from the city board of health showing that his place of business complies with the city and State health laws. And every person who purchases or acquires any such property or business shall demand and require that such certificate be delivered to him at the time of purchase.

ART. 3. *Creameries.*—SEC. 4. The site of every creamery building in the city of Butte must be dry and the surroundings free from all refuse accumulations. No creamery building shall be located near any stable, chicken yard, hog pen, or slaughter house, and no open privy vault or other receptacle for filth shall be allowed near any such building. If cesspools are necessary, they must be screened to prevent the entrance and exit of flies. Waste fluids from the creamery premises must be conducted through subsurface drains to a point not less than 100 feet from the creamery and finally disposed of in such manner as will not create a nuisance.

SEC. 5. If the creamery is provided with a cellar such cellar must be well lighted and ventilated and kept scrupulously clean and dry. The floors of all rooms in which milk is handled must be covered with cement or other matter which is impervious to water and the surfaces graded to permit quick escape of waste fluids into a properly constructed drain. No room in any creamery which is used for receiving, handling, or bottling milk shall be used for any other purpose. All creamery rooms in which milk is stored, handled, or exposed must be screened to prevent the entrance of insects. All vats must be provided with removable covers of a pattern approved by the city board of health, and all vats must be kept covered when milk is contained in them.

SEC. 6. When milk is received at creameries it shall, when practicable, before it is transferred from the dairyman's can to receptacles provided by the creamery, be elevated to a sufficient height to permit it to flow by gravity through open channels to the separator, cooling apparatus, cans, bottles, etc. If pumps and closed pipes are used in conveying milk they must be so constructed that every portion of their interior surface will be accessible for cleaning. All pipes used for this purpose must have an interior diameter of at least 2 inches and must be made up of short lengths. All pipes, separators, coolers, and other machinery used for handling milk must be taken apart daily and all surfaces which come in contact with milk must be thoroughly cleaned and sterilized. Every creamery must be equipped with a steam sterilizing chamber, large enough to receive all cans, bottles and utensils used in handling milk, and all such containers and utensils, after a thorough washing, must be exposed to live steam at a temperature of 240° F. for not less than 30 minutes before use. No measuring rod or other instrument shall be put into milk unless such rod or instrument has been sterilized before use. Water used in creameries must be pure, wholesome, and abundant in quantity. Every portion of the creamery building and premises must be kept clean and free from dust, cobwebs and accumulations. Creamery employees must be cleanly in their habits; their outside garments should be white and clean, and warm water, soap, and clean towels must be provided to permit convenient washing of the hands. The temperature of milk intended for sale or shipment must not be above 50° F. All milk at the time it is received at the creamery should be at or below a temperature of 60° F. No cats, dogs, fowls, or other domestic animals shall be kept or allowed in or about any creamery buildings.

SEC. 7. Every creamery owner or manager must report immediately to the city or county health officer all cases or suspected cases of typhoid fever, scarlet fever, diphtheria, or other communicable diseases occurring among the employees of the creamery or their families, or among the persons supplying milk to the creamery or their families. The manager of every creamery must at all times make diligent effort by inquiry or otherwise to ascertain whether any case or suspected case of any of the above mentioned diseases exists among any of the aforesaid persons. Failure to obey this rule will render the license of such creamery subject to immediate revocation. No person suffering from typhoid fever, diphtheria, tuberculosis or any other communicable disease shall be employed in or permitted to enter any creamery in the city of Butte.

ART. 4. *Meat markets and carts.*—SEC. 8. All carts or vehicles in which meat or meat food products are transported, peddled, or delivered shall be so constructed as to protect the meat from contamination by flies, dust, or other extraneous matter; and the boxes or beds of such carts or vehicles shall while in use be washed daily and maintained in a sanitary and cleanly condition.

SEC. 9. Meat, whether entire carcasses, quarters, or cuts thereof, shall not be transported by teams, wagons or otherwise unless covered by clean white cloths or other material equally impervious to dust or other extraneous matter and in such manner as to protect it from contamination by flies, dust or other extraneous matter.

SEC. 10. All meat markets, fish markets, butcher shops, and stalls shall be completely screened as a protection against flies. The floors shall be thoroughly scrubbed once each day or shall be kept well covered with clean sawdust, and scraps of meat, offal, bones, and other refuse organic matter must be kept in a clean receptacle which must be emptied at least once daily. All meat for sale shall be so kept that it can not be handled by the public and shall not be exposed to the air except in such quantities as are required for immediate use. All meat not required for immediate sale shall be kept in an adequate refrigerator or ice chest. Under no circumstances shall meat or meat food produce be exposed outside of the screened room. All tainted meat shall be removed from the premises at once.

SEC. 11. The inside of all refrigerators in butcher shops shall be well painted with two or three coats of white enamel or paint and shall be washed and kept clean at all times.

SEC. 12. The aprons, overalls, or other outer clothing of all employees who handle meat shall be of material that is readily cleaned and made sanitary and shall be cleaned daily while in use. All persons who handle meat shall wear clean white caps. All persons who handle meat or meat food products shall be required to keep their hands clean at all times, and for this purpose wash basins with an abundant supply of soap and pure, clean water and sanitary towels must be provided at the meat market.

SEC. 13. No person suffering from or who has been exposed to any contagious or infectious disease shall be permitted to work in or about any meat market or to handle any meat intended for human consumption until such person has been thoroughly disinfected under the supervision of the health officer and authorized by him to perform such duties.

SEC. 14. All trays, counters, racks, tables, blocks, etc., shall be thoroughly scraped and cleaned at least once each day and as much oftener as may be necessary to keep them in a clean and sanitary condition; and all knives, saws, cleavers and other tools and all utensils and machinery used in moving, handling, cutting, chopping, mixing, canning or other processes shall be thoroughly cleaned and washed in boiling water daily.

SEC. 15. All rooms or compartments in which meat or meat food products are prepared, cured, stored, packed or otherwise handled shall be properly lighted and ventilated, and shall be so located that odors from toilet rooms or catch basins, tank rooms, hide cellars, etc., can not permeate them. All rooms or compartments shall be provided with cuspidors, which employees who expectorate shall be required to use. Employees shall not smoke at their work.

SEC. 16. Where any meat food products, including sausage, lard, pickled pork, beef, etc., are prepared a separate room properly ventilated, lighted, and supplied with pure water shall be provided for this purpose exclusively; provided, that sausage may be ground in the market proper when such grinding is done under thoroughly sanitary surroundings.

SEC. 17. No domestic animals shall be kept or allowed in any meat market or sausage room.

SEC. 18. All ice used in contact with any meat or meat food products must be pure and free from pollution and must be made from unpolluted water.

ART. 5. *Confectionery shops.*—SEC. 19. All rooms in which any confectionery product is prepared must be well lighted and ventilated. The floors must be of cement, tile, oiled wood, or other impervious material. The walls and ceilings must be painted or lime washed. Walls, ceilings, floors, boxes, pans, machines, and all other utensils used in mixing or in handling in any way any confectionery product must be kept in a clean and wholesome condition at all times. No toilet shall be directly connected with the working room of any confectionery shop or factory.

SEC. 20. Working rooms must not be used for any purpose other than those strictly connected with the preparing of confectionery. Persons employed in the establishment must, while working, wear white caps and clean clothing, preferably white suits. Before beginning work and before preparing and mixing the ingredients the persons engaged in the work must wash their hands and arms thoroughly in clean water. For this purpose sufficient wash basins, together with soap, pure water, and clean towels must be provided.

SEC. 21. No person having any communicable disease and no person who has been exposed to any contagious or infectious disease shall be employed or permitted to work in any confectionery shop or factory until such person presents a written statement from a health officer showing that he has been properly disinfected and that there is no longer any danger of his transmitting a communicable disease.

SEC. 22. It is hereby strictly forbidden for any person to sit or lie on any of the tables, shelves or other fixtures intended or used for confectionery. Chairs and benches in sufficient number must be provided to sit on. The working rooms must be furnished with cuspidors, at least one in each room, which must be cleaned daily, and spitting on the floors and smoking in the working rooms is hereby prohibited.

SEC. 23. All windows and doors must be protected from flies by the use of screens made from not coarser than 14-mesh wire gauze. The supplies must be stored in dry places where they are protected from all contamination. The confectionery products must at all times be handled in a clean and sanitary manner and must be protected from flies and other sources of contamination. Any confectionery showing dirt or filth shall be deemed an impure food product, the sale of which is hereby prohibited. Domestic animals must not be allowed in the confectionery shop or factory.

ART. 6. *Bakeshops.*—SEC. 24. The provisions of this ordinance shall extend and apply to every room or building in the city of Butte occupied as a biscuit, bread, pretzel, pie, cracker, or cake bakery, and to every place used for the purpose of making macaroni, candy, pop corn, ice cream cones, ice cream, or confectionery of any kind, or where any of the articles above mentioned are made, kept for sale, sold or stored, including the bakeshops of hotels and restaurants. The term bakeshop whenever mentioned in this ordinance shall be held to mean and apply to any such establishment as is above mentioned.

SEC. 25. The workroom of every bakeshop shall have an impervious floor constructed of brick, cement or tile laid in cement, or of wood, of which the crevices shall be filled in with putty and the whole surface treated with oil varnish. The walls and ceilings shall be wainscoted, plastered, or ceiled with lumber.

SEC. 26. The interior of the rooms of all bakeshops, including the ceilings or tops of such rooms and all passages and staircases of the bakeshop, shall either be painted with oil paint or varnished or lime washed. Where painted with oil paint or varnished there shall be three coats of paint or varnish and the paint or varnish shall be renewed once at least every three years and shall be washed with hot water and soap at least once every three months. When limewashed the limewashing shall be renewed at least once every six months.

SEC. 27. Every bakeshop shall be provided with a proper wash room and toilet apart from the working rooms. The plumbing or draining systems of every such room or building shall comply with the requirements of the plumbing ordinances of the city of Butte. Every toilet or other sanitary convenience shall at all times be kept in a cleanly condition, shall be sufficiently ventilated and lighted, and shall not communicate with any workroom, except through the open air or through an intervening ventilated space; provided that in workrooms in use prior to the passage of this ordinance and mechanically ventilated in such a manner that the air can not be drawn into the workroom through the sanitary convenience an intervening ventilating space shall not be required.

All sanitary conveniences shall be under cover and so partitioned off as to insure privacy and, if for the use of females, shall have proper doors and fastenings. They shall be so arranged and maintained as to be conveniently accessible to all persons employed in said bakeshops at all times during their employment. Where persons of both sexes are employed the conveniences for each shall be so placed or screened that the interiors shall not be visible (even when the door of the convenience is open) from any place where persons of the other sex have to work or pass; and if the conveniences for one sex adjoins that for the other sex the approaches shall be separate.

SEC. 28. All workmen shall be given proper facilities for storing away and keeping their working clothes in cleanly condition, and must be provided with a warm, dry place to wash and dress.

SEC. 29. Before beginning work and before preparing and mixing ingredients and after visiting toilet the persons engaged in the work must wash their hands and arms

thoroughly in clean water. For this purpose sufficient wash basins together with soap and towels must be provided, and for each workman engaged at least one fresh and clean towel each day must be furnished. All cooks and bakers shall while at work wear clean white caps.

SEC. 30. All flour and other materials as well as the finished product shall be put in perfectly dry and airy rooms, so arranged that the shelves, floors, and all other places for storing the same can be easily and perfectly cleaned. Bread, pastry, or confectionery shall not be laid on the bare floor. All barrels and boxes containing foodstuff must be provided with convenient covers.

SEC. 31. Every bakeshop shall be efficiently lighted and shall be ventilated so as to render harmless all gases and dust.

SEC. 32. No person shall sit or lie on any of the tables or shelves which are intended for use for the dough or baked articles. Chairs and benches in sufficient number must be provided to sit on.

SEC. 33. All working rooms must be provided with cuspidors, at least one in each room, which must be cleaned daily. No person shall spit or expectorate or deposit or place any sputum, spittle, saliva, phlegm, mucus, tobacco juice, cigarette stumps, cigar stumps, or quids of tobacco on the floor, walls, stairways, furnishings, or equipment, nor in any manner defile or pollute the floor, walls, stairways, furnishings, or equipment, nor shall any person smoke, snuff, or chew tobacco in any working room while work is in progress.

Plain notices shall be posted in every kitchen forbidding any person to use tobacco or to spit on the floor of such kitchen.

SEC. 34. No working room shall be used for any purpose other than those strictly connected with the preparing and baking of foods, and especially shall they not be used as washing, sleeping, or living rooms.

SEC. 35. The whole of the premises shall be kept free from insects of all kinds and otherwise kept in a clean and neat condition. All tables, utensils, dishes, pans, troughs, clothes, towels, and machinery used in the bakery must be kept in a clean and wholesome condition. Domestic animals shall not be allowed in any bakeshop.

SEC. 36. No person having a communicable disease and no person who has been exposed to any contagious or infectious disease shall be employed or permitted to work in any bakery until such person presents a written statement from a health officer showing that he has been properly disinfected and that there is no longer any danger of his transmitting a communicable disease.

SEC. 37. All windows and doors must be protected from flies by the use of screens made from not less than 14-mesh wire gauze.

SEC. 38. All drivers and other persons engaged in handling or delivering any of the articles mentioned in section 24 of article 6 of this ordinance shall be cleanly in person and attired in a cleanly manner. No person so employed shall carry such articles in his hands or on his arm unless the same be wrapped in paper or other material so as to prevent their contact with dirt or dust. All bread shall be delivered from baskets.

SEC. 39. All wagons, sleighs, or other vehicles used for delivery of bread, confectionery, ice cream, or other articles subject to inspection under this ordinance shall at all times be kept in a cleanly and satisfactory condition, and shall not be used at any time for transporting any offensive material, and shall have the name and place of business of the person, firm, or corporation to whom they belong at all times prominently displayed thereon.

SEC. 40. All vehicles from which any biscuits, bread, candy, or other products are delivered or sold shall be kept in a clean and sanitary condition, and all vehicles, boxes, baskets, or other receptacles in which any of the aforesaid products are conveyed through the streets shall be closely covered in such a manner as will protect them from any pollution whatever.

SEC. 41. All refrigerators and ice boxes must at all times be kept in a clean and sanitary condition and free from foul odors. Milk stored in refrigerators must be so placed that it will not absorb odors from other food products stored therein. Nothing but food or food products shall be stored in any such refrigerator.

SEC. 42. Every owner, occupant, lessee, manager, and employee of any bakeshop shall at all times observe and carry out the provisions of this ordinance in respect to the sanitary conditions of such establishments, and shall at all times afford to any authorized inspector full and free access to all parts of such establishments.

ART. 7. *Hotel, restaurant, and lunch-counter kitchens.*—SEC. 43. The side walls and ceilings of every hotel, restaurant, or lunch-counter kitchen shall be well plastered, wainscoted, or ceiled with metal or lumber and shall be oil painted or kept well lime washed, and all interior woodwork shall be kept well oiled or painted with oil paints, which shall be kept washed with clean soap and water. The floors of every kitchen shall be made of cement or tile laid in cement, brick, oiled wood, or other suitable nonabsorbent material, and must be flushed and washed clean at least once in every 24 hours and as much more frequently as may be necessary to keep such floors in a clean and sanitary condition.

SEC. 44. The doors, windows, and other openings of every kitchen used in connection with any hotel, restaurant, or lunch counter shall be fitted with self-closing screen doors and wire window screens of not coarser than 14-mesh wire gauze.

SEC. 45. Every kitchen shall be provided with a convenient toilet room which must not be in any way directly connected with the kitchen. Such toilet room shall be furnished with a ventilating flue or pipe, which shall in no way connect with the ventilating system of the kitchen. Every toilet room must have adjacent to it a lavatory or wash room which must be supplied with washbasins, soap, pure water, and clean towels. All employees who in any way handle or come in contact with the foods prepared in such kitchen must before beginning work or after visiting the toilet wash their hands and arms in clean water.

SEC. 46. No person or persons shall be allowed to sleep in any kitchen connected with any hotel, restaurant, or lunch counter. It is hereby strictly forbidden for any person to sit or lie on any of the tables, shelves, meat blocks, etc., which are intended for the reception of foodstuffs. Chairs and benches in sufficient number must be provided to sit on. Spitting on the floor and smoking in the working rooms is hereby prohibited.

Plain notices shall be posted in every kitchen forbidding any person to use tobacco or spit on the floor of such kitchen.

SEC. 47. No person having any communicable disease and no person who has been exposed to any contagious or infectious disease shall be employed or permitted to work in any kitchen above mentioned until such person presents a written statement from a health officer showing that he has been properly disinfected and that there is no longer any danger of his transmitting a communicable disease.

SEC. 48. All pots, pans, kettles, and other utensils used in or about any kitchen must at all times be kept in a clean and sanitary condition. All refuse matter must be kept in a covered receptacle securely protected from flies, which receptacle must be emptied and washed daily. Throwing slop, wash water, or any other refuse matter on the ground outside of the kitchen door shall be deemed to produce an insanitary condition, and such practice shall render the license for such kitchen subject to immediate suspension or revocation.

SEC. 49. All refrigerators and ice boxes must at all times be kept in a clean and sanitary condition and free from foul odors. Milk stored in refrigerators must be so placed that it will not absorb odors from other food products stored therein. Nothing but food or food products shall be placed in any such refrigerator. Food or food products must not be kept in open tin cans.

SEC. 50. Domestic animals must not be allowed in any hotel, restaurant, or lunch counter kitchen.

SEC. 51. All storerooms in which food products are stored must be well lighted and ventilated and be at all times kept in a clean and sanitary condition, so screened that flies can not secure access thereto and kept free from any foul odors. Food stored in boxes, cans, or barrels must be thoroughly protected from contamination by easily adjusted covers.

ART. 8. *Hotel, restaurant, and lunch counter dining rooms.*—SEC. 52. The dining room of every hotel, restaurant, and lunch counter must be thoroughly protected from flies by the use of sufficient fly screens made from not coarser than 14-mesh wire gauze placed at all the windows and doors. The floors, side walls, ceilings, and all woodwork in such dining rooms or lunch-counter rooms must at all times be kept in a clean and sanitary condition. All tables, counters, dishes, napery, etc., used in any such dining room or lunch counter must at all times be clean and free from filth of any kind whatsoever. For the purpose of washing or wiping glasses in all restaurants and eating houses clean towels shall be used, and the using for this purpose of napkins that have been used by the patrons is strictly prohibited.

SEC. 53. All refrigerators, pantries, and other places in which food or food products are stored or kept must at all times be kept in a thoroughly clean and sanitary condition and nothing but pure, clean, wholesome food or food products or ice shall be placed in any such refrigerator, pantry, or other place where food products are kept.

SEC. 54. No person suffering from a communicable disease shall be employed in any hotel or restaurant dining room or lunch counter, and no person suffering from or who has been exposed to any contagious or infectious disease shall be employed or permitted to work in any hotel or restaurant dining room or lunch counter until such person presents a statement from a health officer stating that such person has been thoroughly disinfected and that there is no longer any danger of his transmitting a communicable disease.

ART. 9. *General provisions.*—SEC. 55. All places where food or food products are stored, handled, or sold, not hereinbefore specifically provided for, must be supplied with sanitary wash basin or sink connected with sewer, soap, pure water, and clean towels. All persons engaged in the handling of food or food products must wash their hands with sufficient frequency to keep them clean.

SEC. 56. It shall be unlawful for any hotel or restaurant having a public wash room to have what is known as a common towel, but they shall keep at all times a sufficient supply of individual clean towels in sight and easy of access to guests.

SEC. 57. All public halls, stores, depots, hotel lobbies, and other public meeting places must be provided with sanitary cups or sanitary drinking fountains, and the common cup or glass for the use of the public in such places is prohibited.

SEC. 58. In all places where food or food products are stored, handled, or sold, cuspidors for the use of operatives, employees, clerks, or other persons shall be provided, and each cuspidor shall be thoroughly emptied and washed out daily with disinfectant solution, and 5 ounces of such solution shall be left in each cuspidor while it is in use. No operative, employee, or other person shall expectorate on the floor or walls of any building, room, basement, stairway, or cellar where the production, manufacture, packing, storing, preparation, or sale of any food is conducted.

SEC. 59. No person or persons shall be allowed to live or sleep in any workroom of a bakery, kitchen, dining room, confectionery, creamery, cheese factory, or other place where food is prepared for sale, served, or sold.

SEC. 60. Dogs, cats, or other domestic animals must not be allowed in any room or other place where food or food products are prepared, handled, or stored: *Provided*, That cats may be kept in storerooms or warehouses where all foodstuffs are kept in boxes, barrels, or sacks unopened.

SEC. 61. No fruit or food products shall be displayed upon the sidewalks of the city of Butte unless such fruit or food products are inclosed in a show case or similar device which will protect the same from flies, dust, or other contamination: *Provided*, That fruit or food products that necessarily have to be peeled, pared, or cooked before they are fit for consumption may be displayed upon the sidewalk: *And provided further*, That in each such display the bottom of the container be at least 18 inches above the surface of the sidewalk.

SEC. 62. All peddlars selling fruit or other food products from carts or wagons shall keep their wares covered with clean canvas or other material equally impervious to dust or other extraneous matter, or shall have such vehicles so constructed as to protect the contents from dust, flies, or other extraneous matter. The boxes or beds of such vehicles shall be maintained in a clean and sanitary condition at all times.

SEC. 63. All trays used for the conveying of meals, baked goods or other food or food products through the public streets must be covered in such a manner as to protect the contents from flies, dust, dirt and all other injurious contamination.

SEC. 64. All soda fountains, saloons, or other places where soft drinks, liquors, or other beverages are dispensed must be provided with sewage connection, fresh water and proper tanks or basins for the cleaning of utensils, and all glasses, spoons, dishes or other utensils must be thoroughly washed in a sanitary manner every time they are used. All fruits, nuts, sirups, and other materials used in the serving of ice cream or beverages must be kept in clean bottles or covered receptacles. All cones and straws must be kept in covered receptacles. The floors behind all soda fountains and bars must be of cement, tile, oiled wood, linoleum, or other material impervious to water.

SEC. 65. All food inspectors shall have the power and it shall be their duty to enter and inspect all packing houses, commission houses, creameries, markets, grocery stores, fruit stores, ice-cream parlors, soda fountains, hotel and restaurant kitchens, or any other place where meat, game, poultry, fish, milk, groceries, or other food products are offered for sale or stored, or any place where live poultry are held or offered for sale for human food, and to inspect any vehicle or wagon transporting meat, fish, game, or poultry from one point to another, or through the city. They shall have the right to examine the ice houses and refrigerators in hotels and restaurants. They may enter any house, factory, or place where dead animals are skinned or rendered or where the offal from slaughterhouses or meat markets, such as fat, heads, feet, or guts are steamed, tanked, or otherwise treated or disposed of. Any person who shall in any manner interfere, or attempt to interfere, with said inspectors in the discharge of their duties, or any person or persons being the owners, agents, or managers of any market, store, packinghouse, creamery, commission house, slaughterhouse, hotel, or restaurant, who shall refuse to permit such inspectors to have full access to such premises, or who shall attempt to conceal or remove any animals supposed to be diseased, or any meat, fish, game, poultry, or other food products that the inspectors desire to inspect, shall be guilty of violation of this ordinance.

SEC. 66. Every butcher shop, slaughterhouse, dairy, creamery, commission house, grocery store, delicatessen, confectionery shop, restaurant and hotel kitchen or dining room, lunch counter, soda fountain, and every other place where food or food products are stored, shipped, handled or sold must be inspected by the local food inspectors of the city of Butte at least once in every month.

SEC. 67. A score card printed in proper blank form prepared by the city board of health shall be used for the purpose of designating conditions found on inspection. The inspectors must carefully inspect every part of the place where food or food products are handled and must fill in the blank spaces on the score card in accordance with conditions found to exist. Under the title "remarks" the health officer must designate any unsanitary condition found to exist which is not otherwise noted

on the score card. After the inspection is completed the score card must be signed by the proprietor or person in charge of the premises in whose presence the inspection is made.

SEC. 68. When the score card of any creamery, meat market or cart, confectionery shop or factory, bakeshop, hotel, restaurant or lunch counter, kitchen or dining room, or similar place of business shall fall below 70 but shall reach 60 or more, the owner or proprietor of such place shall receive a warning note, and if upon subsequent inspection the score shall again fall below 70, or if at any time the score of any such place shall fall below 60, the products from such place shall be deemed to have been produced under unsanitary conditions, the sale of which is hereby prohibited; and the license or permit of such creamery, meat market or cart, confectionery shop or factory, bakeshop, hotel, restaurant or lunch counter, kitchen or dining room, or similar place of business, shall be subject to immediate suspension or revocation.

SEC. 69. Any violation of any of the provisions of this ordinance shall, in addition to rendering the license or permit of the offender subject to suspension and revocation as hereinbefore provided, subject the offender upon conviction to a fine of not less than $10 nor more than $300 for each offense.

CHICOPEE, MASS.

Milk—Cleansing of Receptacles Required. (Reg. Bd. of H., May 1, 1914.)

RULE 13. No bottle, can, or vessel of any kind used in the sale and distribution or delivery of milk shall be received or removed from a private house, apartment, or tenement by a person, firm, or corporation licensed for the sale of milk in the city, unless the bottle, can, or vessel has been thoroughly cleansed by the householder to whom the milk has been delivered. All bottles, cans, and vessels so received shall again be cleansed and sterilized by the person, firm, or corporation licensed for the sale and distribution of milk before named vessels can again be used for a receptacle for the sale or delivery of milk.

RULE 14. Unclean bottles, cans, and other receptacles for carrying milk found in the possession of milk peddlers en route shall be considered a just cause for the board of health to revoke a milk license or to take such action as the board may deem necessary in the interests of the public health.

Hotels, Restaurants, Cafés, and Saloons—Food, Inspection and Serving. (Reg. Bd. of H., July 2, 1914.)

No person, firm, or corporation doing business as innholders or common victuallers in the city of Chicopee shall sell, expose, deliver, serve, offer for sale, give away, or distribute in any hotel, café, restaurant, or saloon in the city food of any description intended for human consumption, either in the form of sandwiches, cake, pastry, meat, fruit, or vegetables, unless such food is fresh, clean, wholesome, and free from fly and dust pollution and served to guests or patrons of hotel, café, restaurant, or saloon in a cleanly and sanitary manner satisfactory to the board of health.

The members of the board of health, its agents and representatives, shall have the privilege at all times to enter upon the property and premises of hotels, cafés, restaurants, and saloons in the city for the purpose of making examinations and inspections to ascertain if the rules and regulations of the board of health are being complied with.

Any person, firm, or corporation that fails to comply with the provisions of these rules and regulations shall be deemed guilty of a misdemeanor and upon conviction shall be fined an amount not less than $10 nor more than $100 for each and every offense.

CINCINNATI, OHIO.

Glanders—Notification of Cases Required. (Reg. Bd. of H., July 29, 1914.)

The board of health of Cincinnati, Ohio, in session July 29, 1914, passed a resolution declaring glanders a contagious and reportable disease, and instructed the clerk to notify all veterinarians within the city that they must immediately notify the health officer of any and all cases of glanders coming under their notice.

Milk and Cream—To be Sold in Glass Bottles, Sealed. (Reg. Bd. of H., Apr. 1, 1914.)

SECTION 1. No person or dealer in milk, and no servant or agent of such dealer in milk, shall give, furnish, sell, offer for sale, or deliver any milk, skimmed milk, or cream in quantities of less than 1 gallon unless the same shall be kept, offered for sale, exposed for sale, given away, or sold or delivered in sanitary, transparent glass bottles or such other receptacles of a similar character as may be approved by this board, the same to be sealed with a suitable cap or stopper.

SEC. 2. That said bottles or other receptacles shall be sealed immediately after the filling of same, which filling and sealing shall be done only in a milk house or creamery, the sanitary conditions of which have been approved by this board.

SEC. 3. Any violation of the above regulations shall be punished according to law.

SEC. 4. All resolutions or parts of resolutions in conflict herewith are hereby repealed.

These regulations to take effect and be in force from and after the 1st day of May 1914.

Milk and Cream—Pasteurization Required. (Reg. Bd. of H., May 27, 1914.)

SECTION 1. It shall be unlawful for any person, firm, or corporation to sell, offer to sell, or have in his possession for the purpose of selling or giving away to any person or persons in the city of Cincinnati, county of Hamilton, and State of Ohio, any milk or cream which has not been pasteurized as hereinafter required.

SEC. 2. Milk and cream shall be deemed pasteurized within the meaning of this regulation if the same shall have been heated to a temperature of not less than 145° F. and held at that temperature for not less than 30 minutes. The health officer of the board of health or his assistants shall be empowered to inspect the process of pasteurization, also the premises, apparatus and conditions under which same is done.

The pasteurization of milk or cream otherwise than according to the methods and process approved by the city health officer shall not be deemed a compliance with the provisions of this regulation.

SEC. 3. The above described pasteurization shall be required in all cases except those wherein such milk or its by-products are obtained from dairies which are under the direct control of a recognized milk commission of the Cincinnati Academy of Medicine, and this exception shall apply only to products known as certified and inspected.

SEC. 4. All resolutions or parts of resolutions in conflict herewith are hereby repealed.

SEC. 5. This regulation to take effect and be in force from and after the 1st day of July, 1914.

SEC. 6. Upon its appearing to the satisfaction of the board of health that any person is violating the above regulation, his permit to vend milk or its products shall be revoked.

CLINTON, IOWA.

Milk and Milk Products—Production, Care, and Sale. (Ord. 307, Jan. 13, 1914.)

SECTION 1. *Dairy and milk inspectors.*—That the city council is hereby authorized to employ one or more competent persons, who shall be known as dairy and milk inspectors and whose duty shall be under the supervision and direction of the board of health to see that the provisions of this ordinance are enforced.

SEC. 2. *Salary of milk inspector.*—That the salary of the dairy and milk inspector shall be fixed by the city council.

SEC. 3. *Scale card.*—That the city council adopt the national score card herein set out to be used by the inspector of dairies and require said inspector to visit each dairy and dealer and make inspection thereof as he may deem necessary.

SEC. 4. *Milk permit.*—(*a*) That the city council require all producers and sellers of milk to procure a permit to sell milk from the city board of health, and that such milk permit shall be issued without cost.

(*b*) That each dealer shall be given a permit and such dealer be required to keep such permit posted in his dairy for the information of the public and that in addition each dealer shall be given permit numbers, corresponding to the number of wagons he uses, which permit numbers shall always be secured to the outside of his wagon, one number on each side in plain view.

SEC. 5. *Dairy test.*—That a dairy test with a score of 55 be required for the permit to sell raw milk, and that a dairy score of 50 be required for the sale of milk to be pasteurized. This requirement to be in effect until 1915. after which time the dairy score shall be 60 for the sale of raw milk, and a score of 55 for milk that is to be pasteurized.

SEC. 6. *Temperature.*—That all raw milk sold shall be kept and delivered at a temperature not above 55° F.

SEC. 7. *Milk grades.*—That all raw milk sold shall be graded in three grades and labeled as to grade A, B, and C.

"A" grade milk to be milk from tuberculin tested herds with a dairy score not less than 60 and sold in sterilized bottles.

"B" grade of milk to be milk from tuberculin tested herds with a dairy score of not less than 50.

"C" grade of milk to be milk from tuberculin tested herds or not with a dairy score of not less than 50.

The grade of milk shall be designated by a proper letter, to be not less than three quarters of an inch high and placed upon the milk container. There shall be such contrast between the color of the letter and the background as shall render the letter perfectly legible.

SEC. 8. *Pasteurized milk.*—That all pasteurized milk sold must be from dairies scoring not less than 55; must be bottled with a bacterial count of not more than 100,000 and be kept and delivered at a temperature of not more than 50° F.

That all pasteurized milk must be sold in sterilized bottles and be labeled "Pasteurized milk."

SEC. 9. *Bacterial count.*—That the bacterial count of the milk from all dairies and sellers of milk may be made by the board of health from time to time and any milk showing a bacterial count of more than 1,000,000 per cubic centimeter shall be excluded from sale.

SEC. 10. *Bottled milk.*—All milk shall be sold in bottles and shall be bottled only in a milk room or bottling plant for which a license or permit has been issued.

It shall be delivered in bottles, or single service containers except in the following cases:

(*a*) To establishments in which milk is to be used and consumed on the premises.

(*b*) To hospitals and infant feeding stations that are under competent medical supervision.

SEC. 11. *Stores and milk depots.*—All stores and milk depots in which milk is to be handled shall be provided with a suitable room or compartment in which milk shall be kept. Said room or compartment shall be clean, and shall be so arranged that the milk will not be liable to contamination.

(*b*) Milk shall be kept at a temperarure of not to exceed 55° F.

(*c*) Milk to be consumed off the premises may be sold only in the original containers.

SEC. 12. *Milk containers.*—That all consumers of milk; hotels, restaurants, and eating houses are hereby compelled to wash thoroughly all milk bottles and milk containers, and said bottles and containers shall be used for no other purposes.

SEC. 13. *Milk tickets.*—The same milk tickets or checks shall not be used more than once.

SEC. 14. *Cows.*—(*a*) That a physical examination of all cows shall be made at least once every six months by a veterinarian, approved by the health authorities.

(*b*) That every diseased cow shall be removed from the herd at once, and no milk from such cows shall be offered for sale.

(*c*) That cows, especially the udders, shall be cleaned at the time of milking.

(*d*) That no milk that is obtained from a cow within 15 days before or after parturition, nor any milk that has an unnatural odor or appearance, shall be sold.

(*e*) No unwholesome food shall be used.

(*f*) That every producer of milk shall allow a veterinarian employed by the board of health authorities to examine his herd at any time, under penalty of having his supply excluded.

SEC. 15. *Monthly report.*—That a monthly report of the inspector of dairies and milk producing places be made to the local board of health.

SEC. 16. *Contagious diseases.*—(*a*) The health authorities shall be notified at once of any communicable disease in any person that is in any way connected with the handling or production of milk, or the exposure of such person to any communicable disease.

(*b*) No bottle or container shall be removed from the house in which there has been recently a case of communicable disease, until permission in writing has been granted by the health authorities.

SEC. 17. All ordinances and parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

SEC. 18. *Penalty.*—Any person, firm, or corporation, violating any provision of this ordinance shall be deemed guilty of a misdemeanor and upon conviction thereof shall be subject to a fine to exceed not over $100 or 30 days in jail.

COLORADO SPRINGS, COLO.

Rabies—Muzzling of Dogs Required. (Ord. May 21, 1914.)

SECTION 1. Until otherwise provided by the city council no person shall cause or permit any dog owned or kept by him to be upon any street, alley, park, or other public place within the city or run at large within the city unless such dog shall be securely muzzled so as to effectually prevent it from biting any person or animal. Any person being the owner or keeper of a dog who shall suffer or permit such dog to be upon any street, alley, park, or other public place or to run at large in violation of the provisions of this section shall be fined not less than $10 nor more than $100 for each offense. Every day on which a person shall so suffer or permit any dog owned or kept by him to be upon any such street, alley, park, or public place or to run at large shall constitute a separate and distinct offense.

SEC. 2. Any policeman or the city dog catcher may kill or impound any unmuzzled dog found on any street, alley, park, or other public place within the city and for the

purpose of impounding such dog may pursue and capture it upon private premises. Any policeman or the city dog catcher may kill or impound any dog not wearing a collar bearing the metallic check or tag required by the ordinances of the city of Colorado Springs and for the purpose of impounding any such dog may pursue and capture it on private premises.

COLUMBUS, OHIO.

Milk—Must be Served in Original Container in Public Eating Places. (Reg. Bd. of H., June 17, 1914.)

SECTION 1. No person, firm, or corporation, or any servant, agent, or employee thereof shall sell, offer for sale, or serve milk in any restaurant or other public eating place in the city of Columbus, Ohio, unless said milk be stored and delivered to the consumer in the original package or container.

SEC. 2. *Penalty.*—Whoever violates or obstructs or interferes with the foregoing rule and regulation shall be fined in any sum not exceeding $100 or imprisoned for any time not exceeding 90 days, or both, but no person shall be imprisoned for any violation or failure to obey the above rule and regulation for a first offense.

DAYTON, OHIO.

Appropriation for Division of Health, Department of Public Welfare, for Calendar Year 1914. (Ord. Feb. 16, 1914.)

Office of the health officer:		
Administration—		
Personal service—		
Salaries—		
Health officer (1), at $3,600 per year	$3,600.00	
Clerk (1), at $1,500 per year	1,500.00	
Clerks (2), at $600 per year	1,200.00	
Stenographer (1), at $520 per year	520.00	
City veterinary (1), at $1,200 per year	1,200.00	
		$8,020.00
Services other than personal—		
Transportation of persons	100.00	
Subsistence of persons	50.00	
Other services	10.00	
		160.00
Total		8,180.00
Bureau of medical service:		
Operation—		
Personal service—		
Salaries—		
Chief medical inspector (1), at $1,200 per year	1,200.00	
Physicians (5), at $500 per year	2,500.00	
Nurses (4), at $900 per year	3,600.00	
Superintendent of quarantine, at $5 per week	260.00	
		7,560.00
Services other than personal—		
Transportation of persons—		
Car fare—nurses	500.00	
Removals	100.00	
		600.00
Total		8,160.00
Bureau of food inspection:		
Operation—		
Personal service—		
Salaries—		
Chief food inspector (1), at $1,800 per year	1,800.00	
Food inspector (1), at $1,200 per year	1,200.00	
Food inspector (1), at $900 per year	900.00	
Dairy inspectors (2), at $900 per year	1,800.00	
		5,700.00

Bureau of food inspection—Continued.		
Operation—Continued.		
Services other than personal—		
Transportation of persons	$50.00	
Subsistence of persons	75.00	
Hire of vehicles	40.00	
		$165.00
Total		5,865.00
Bureau of bacteriology and chemistry:		
Operation—Personal service—Salaries—		
Bacteriologist and chemist (1), at $2,000 per year	2,000.00	
Assistant (1), at $480 per year	480.00	
		2,480.00
Bureau of sanitation:		
Operation—Personal service—Salaries—		
Sanitary officers (4), at $900 per year	3,600.00	
Sanitary officer (1) (½ month), at $75 per month	37.50	
		3,637.50
Bureau of plumbing inspection:		
Operation—		
Personal service—		
Salaries—		
Chief inspector (1), at $1,500 per year	1,500.00	
Assistant inspector (1), at $1,200 per year	1,200.00	
Assistant inspector (1), at 600 per year	600.00	
		3,300.00
Services other than personal—		
Transportation of persons		120.00
Total		3,420.00

COST BY ORGANIZATION UNITS.

From the budget for the city of Dayton for 1914:

	Salaries.	Supplies and materials.	Services other than personal.	Land, structures, and equipment.	Total.
Division of health:					
Office of the health officer	$8,020.00	$505.00	$160.00	$710.00	$9,395.00
Bureau of medical service	7,560.00	2,000.00	600.00	25.00	10,185.00
Bureau of food inspection	5,700.00	285.00	165.00	525.00	6,675.00
Bureau of bacteriology and chemistry	2,480.00	375.00		50.00	2,905.00
Bureau of sanitation	3,637.50	525.00		500.00	4,662.50
Bureau of plumbing inspection	3,300.00	225.00	120.00	275.00	3,920.00
Total	30,697.50	3,915.00	1,045.00	2,085.00	37,742.50

Buildings, Tenements, and Rooms—Inspection and Sanitary Regulation. (Ord. 9606, Apr. 15, 1914.)

SECTION 1. That the health officer of the city of Dayton is hereby authorized to inspect or cause to be inspected all buildings, tenements, and rooms in the city of Dayton used for dwelling or sleeping purposes for the purpose of ascertaining the sanitary condition thereof whenever he may deem such inspection necessary.

SEC. 2. That if, on said inspection, any building, tenement, or room used for dwelling or sleeping purposes be found to contain less than 500 cubic feet of air space for each occupant over 12 years of age and 400 cubic feet of air space for each occupant under 12 years of age, and if said condition, in the judgment of the health officer, is insanitary, or if said premises are found to be so damp or so insufficiently provided with water or vaults as to be the cause of nuisance, or sickness, or a source of filth, or if said premises, or any part of them are, because of any condition therein, in the

opinion of the health officer of said city, so insanitary as to be a menace to the health of the occupants thereof or of the public, said health officer shall serve a written notice on the owner, agent, or occupant thereof directing the removal of the insanitary condition, which shall be named in said notice.

SEC. 3. That if said order shall not be obeyed, and the insanitary condition set forth in said notice shall still be present five days after the giving of said notice, the health officer of the city of Dayton is hereby authorized forcibly to remove all or part of said occupants from said premises.

SEC. 4. That if any person who shall thus be removed from any insanitary premises shall return thereto before the insanitary condition shall be removed he shall be guilty of a misdemeanor, and on conviction thereof shall be fined not less than $25 nor more than $200, or imprisoned in the workhouse of the city of Dayton for not less than 30 days, or both.

Rubbish and Waste Material—Dumping on Lots Prohibited. (Ord. 9607, Apr. 15, 1914.)

SECTION 1. That no lot in the city of Dayton, shall be used as a public dump for rubbish and waste material, except such lots as with the consent of the owners thereof shall be designated as public dumps by the city engineer and the health officer of the city of Dayton.

SEC. 2. That lots designated as public dumps shall be so marked with an appropriate sign, signed by the owner, the city engineer, and the health officer of the city of Dayton.

SEC. 3. That any person who shall dump rubbish or waste material of any kind, or allow the same to be dumped on any lot in the city of Dayton, which shall not have been designated as a public dump, as above provided, shall be guilty of a misdemeanor, and on conviction thereof shall be fined not more than $25 or imprisoned in the workhouse of the city of Dayton for not less than 10 days, or both.

Weeds—Removal from Premises Required. (Ord. 9659, July 8, 1914.)

SECTION 1. It shall be the duty of the owner of each and every parcel of real estate in the city of Dayton to keep the same free from noxious grass and weeds.

SEC. 2. It shall be the duty of the director of public welfare to have all such real estate inspected, and when in his opinion it is necessary so to do for the sake of the public health and welfare, to order the owners thereof to cut or to remove therefrom all such noxious grass or weeds thereon.

SEC. 3. Said order shall be in writing and may be served on the owner in person, left at his usual place of residence, sent by mail, or said order may be served by publication in that newspaper with which a contract for advertising shall have been made by the city of Dayton.

SEC. 4. Said order shall notify the owner that if he shall fail to cut or remove the noxious grass or weeds from his property within five days after the serving of said order said work may be done by the city at his expense.

SEC. 5. Any owner failing or neglecting to cut or remove said noxious grass or weeds within five days after service of the order provided for in the last three preceding sections shall be guilty of a misdemeanor, and on conviction thereof shall be fined not less than $5 nor more than $25 for each day during which such failure or neglect shall continue.

SEC. 6. If said owner shall fail or neglect to remove said noxious grass or weeds for five days after service of the order provided for in sections 3, 4, and 5 hereof, then the city may cut or remove said noxious grass or weeds and the cost of said work shall be assessed against the lots and lands thus cleared by the city.

SEC. 7. Notice of said assessments shall be given to the owners of the lots and lands charged therewith either by mail or by publication in the newspaper with which a

contract for advertising shall have been made by the city of Dayton, and all assessments not paid within 10 days after the giving of said notice shall be certified, together with a penalty of 5 per cent, by the city accountant to the county auditor for collection.

Public Dumps—Starting of Fires Prohibited. (Ord. 9674, July 29, 1914.)

SECTION 1. That any person who shall at any time start a fire on the public dump, without the consent of the health officer of the city of Dayton, or on any public property, without the consent of the official in charge thereof, shall be guilty of a misdemeanor, and on conviction thereof, shall be fined not exceeding $100 or imprisoned not less than 10 days, or both.

DUNMORE, PA.

Board of Health—Appointment, Organization, and Duties. (Ord. 3, Feb. 9, 1914.)

SECTION 1. Be it ordained by the council of the borough of Dunmore, and it is hereby ordained by the authority of the same that by virtue of the powers and authority conferred upon it by the act of Assembly[1] approved the 12th day of June, 1913, a board of health be and hereby is established and shall be maintained in the borough of Dunmore in conformity with and possessed of all the powers and authority contained in said act of Assembly.

SEC. 2. The said board of health shall be composed of five members, at least one of whom shall be a reputable physician of not less than two years' experience in the practice of his profession. The members of the board of health shall be appointed by the president of the borough council and at the first appointment one member shall be appointed to serve for one year, one for two years, one for three years, one for four years, and one for five years; and thereafter one member shall in like manner be appointed each year to serve for five years. All of said members shall be residents of the borough of Dunmore and shall serve without compensation, provided, however, if any member of the board shall be elected to the office of secretary, he shall be entitled to receive a salary fixed by the board and ratified by the council as hereinafter provided.

SEC. 3. The members of the board shall severally take and subscribe to the oath prescribed for borough officials and shall annually organize by electing a president from among the members of the board, a secretary who may or may not be a member of the board, and a health officer who shall not be a member of the board. The secretary and health officer shall receive such salary as may be fixed by the board and ratified by the borough council and shall serve for a period of one year or until such time as their successor may be elected and qualified. They shall each give to the borough a bond in the sum of $500 for the faithful discharge of their duties and shall also take and subscribe to the oath required by members of the board.

SEC. 4. Immediately upon the appointment of the board of health hereby created, the secretary of the council shall notify the members of the board so appointed and fix a time and place for their first meeting, at which time the said board of health shall organize in the manner prescribed by the said act of Assembly and shall thenceforth proceed to perform the duties imposed upon the said board of health by the laws of Pennsylvania; they shall prepare, adopt, and submit to the council for its approval such rules and regulations for their government and the enforcement of the laws relative to their duties and powers as to them may seem proper, which rules and regulations when approved by the council and the burgess shall have the same force and effect as ordinaces of the borough of Dunmore.

SEC. 5. That all ordinances or parts of ordinances, resolutions, or regulations of the borough of Dunmore or the board of health therein, inconsistent herewith be and the same are hereby repealed.

[1] Public Health Reports, Nov. 28, 1913, p. 2583.