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WHAT PEOPLE ASK ABOUT HEALTH

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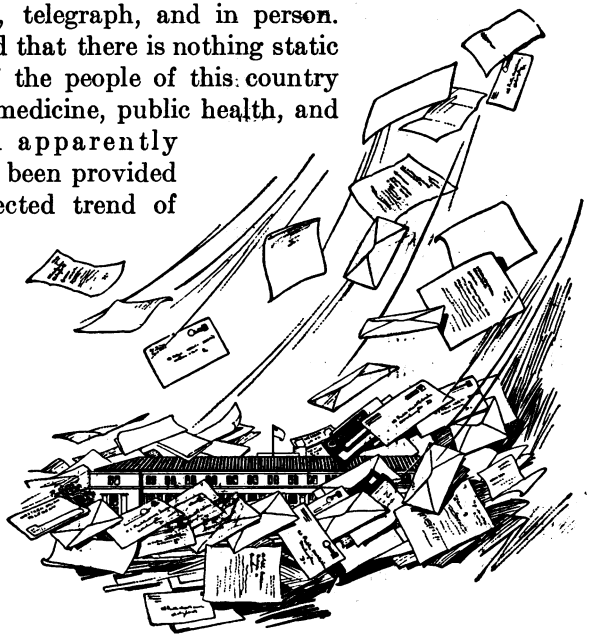
If the question "What *do* people ask about health?" were answered in one word, it would be "Everything." Such has been the experience of the Public Health Service in handling inquiries received by letter, post card, telephone, telegraph, and in person. In fact it may be said that there is nothing static about the interest of the people of this country in matters touching medicine, public health, and medical care. When apparently ample facilities have been provided for meeting an expected trend of questions, it is disconcerting to be confronted with new and unforeseen questioning.



The majority of the requests for information coming to the Public Health Service are received by the Division of Sanitary Reports and Statistics, which is the information section of the Service. Consequently it is possible to learn when and which questions are being asked most frequently and what preparations should be made in anticipating them. A study of approximately 10,000 recent questions forms the basis of this report.

It might be expected that many of those who address the Public Health Service reside in or near Washington, D. C. However, a classification by States, as shown in table 1, discloses a nation-wide distribution having some relation to general distribution of population. It is also interesting to note that there were 133 letters received from abroad.

It has frequently been alleged that females are more inquisitive than males but these data fail to disclose such a disparity, for there were 4,805 communications from males and 4,990 from females. While no account could be kept of the ages of the correspondents it is known that all ages are represented, for many persons of grade, high school and college age, as well as others, asked for information.

TABLE 1.—*Distribution by States of 9,795 queries received recently by the Public Health Service*

Total, all States	9,795	Louisiana	99	Oklahoma	118
		Maine	50	Oregon	49
Alabama	182	Maryland	156	Pennsylvania	806
Arizona	42	Massachusetts	252	Rhode Island	26
Arkansas	91	Michigan	290	South Carolina	110
California	429	Minnesota	133	South Dakota	35
Colorado	104	Mississippi	99	Tennessee	174
Connecticut	107	Missouri	228	Texas	498
Delaware	16	Montana	43	Utah	46
District of Columbia	532	Nebraska	82	Vermont	19
Florida	244	Nevada	6	Virginia	290
Georgia	166	New Hampshire	68	Washington	111
Idaho	33	New Jersey	364	West Virginia	104
Illinois	515	New Mexico	33	Wisconsin	176
Indiana	274	New York	1,373	Wyoming	16
Iowa	121	North Carolina	239	Foreign	133
Kansas	116	North Dakota	39	Unknown	7
Kentucky	116	Ohio	435		

The distribution of requests by months is shown in table 2. It will be noted that the greatest number of requests were received in October and March, while the fewest came in May, June, July, and August. This latter period coincides with the season of least morbidity and mortality and also with vacations, when thoughts are farthest from illness. Fortunately, this period of depression in question-asking fits in well with the vacations of persons engaged in supplying information.

The medical and public health questions asked by the people of this country undoubtedly vary greatly from year to year. Therefore the queries recorded in the present study can be regarded as typical only in a general way. Epidemics of diseases such as poliomyelitis and influenza, public discussion of medical care problems, announcements of new methods of treatment, illnesses of prominent persons, and the like, immediately precipitate a flood of inquiries, comment, and suggestions relative to such matters of current interest. At the same time pursuit of knowledge concerning questions of general health continues quite evenly and unabated.

TABLE 2.—*Distribution by months of 9,795 queries received by the Public Health Service*

Month	Number	Month	Number
January	841	August	581
February	890	September	832
March	1,080	October	1,208
April	866	November	912
May	633	December	720
June	550		
July	682	Total	9,795

The form and scope of the questions received by the Public Health Service can best be appreciated by scanning a number of topics selected at random. It will be noted that many of the queries in the accompanying list are such as to require library research, manifestly time-consuming in character. One wonders to what use much of the information may profitably be put.

List of questions

Susceptibility of a person to rabbit fur.
Progressive muscular dystrophy.
Apyretic-nervous type of influenza.
Dirt eating.
Restoration of natural color to gray and faded hair.
Action of steam-pressure cooking on vitamins.
Causes of dehydration of hair.
How to get rid of germ-phobia.
Deek's ointment for ringworm.
Agent which kills germs and deodorizes.
Burnett's radium emanator.
Ridding low-grown vegetables from infection.
Rehabilitation of alcoholics.
Newest equipment for doctors' use.
Recent discoveries in medical world.
Seydell remedy for arthritis.
Rye bread in relation to ergot poisoning.
Should menopause be accelerated or retarded?
Number of insane per 1,000 by States.
Spectacles for blind.
"Are there drafts, besides in a stove."
Bacteria in vegetables and canned food and diseases caused.
How to preserve life.
Book "Your teeth; their care and preservation."
Filaria loa.
Garlic—20 questions on medical use.
Age of youngest human mother.
Correct temperature of drinking water.
Efficiency of carbon tetrachloride as against gasoline in destroying bacteria.
Ergot.
Bacteria on coins.
Slums, sweatshops, garden cities.

Temperature associated with normal menstruation.
Chemical agent for disinfection of razors and shears without rusting.
Cases of dysentery by States.
Gasoline as room disinfectant after communicable disease.
Dogs, rabies, and soiling of streets by dogs.
Formula containing mineral salts and vitamins essential to well-being.
Treatment of disease by violet-ray emanations.
What is Cryst-L-Dex?
Cure for cigarette habit.
Which regional divisions of the United States are most and least healthful?
Information regarding dextrocardia.
What has the President said about socialized medicine?
What has the Surgeon General said about health conditions in the South?
Diets for various conditions.
Incidence of communicable diseases in children under 16.
Incidence of nonnotifiable diseases.
Relative health conditions of whites and Negroes.
Solution that will toughen skin of hands so that exposure to cold may be more readily borne.
Use of dried chicken gizzard in treatment of cataract.
Hotels, train, and auto routes in warm United States climates.
Protection of eyes while reading by kerosene lamp.
Accidental deaths in agricultural pursuits.
Lives lost annually in major disease epidemics.
Most favorable climate for specified disease conditions.
What is the cause of thyroid?
Use of color and various rays in promoting health.
How many neurotics in United States?
Effects of eating tung nuts.
Incidence of disease in lower income levels.
Value of medicated soaps.
Inward goiter.
Statistics on tuberculosis in Ireland.
Residencies in United States for sufferers from sinus disease.
Merits of advertised "feminine hygiene" products.
Health conditions in Philippines.
Merits of soy-bean flour.
Treatment of speech defects.
Effect of water ingestion upon diabetics.
Child and adult education in dental care in foreign countries.
Number of deaths caused by rickets.
Food and health value of barracuda.
Action upon skin of colloidal gold in ointment.
Modern brain surgery.
Infant mortality in different countries of the world.
Medical uses of sassafras bark.
Appliances or exercises for development of the bust.
Is the continuous consumption of canned food injurious?
What is the difference between the United States Public Health Service and the American Public Health Association?
Building up of atrophied muscles.
Paradichlorobenzene for fumigating houses.
Effect of saltpeter in food of college students.

Expenditures for health and other purposes, by States.
Amounts of copper and manganese in different articles of food.
Dr. King's Home Eye Training Course.
Diseases conveyed by Japanese toothbrushes.
Health of trailer travelers.
Mouth wash to be used in overcoming tobacco habit.
Comparison of health of children in urban and rural districts.
Polycythemia.
Multiple sclerosis.
Statistics: Heat exhaustion and sunstroke.
Number of typhoid carriers in United States.
"Sayno" cigarettes.
Relation of economic and nutritional status to adequacy of diet.
Pine oil disinfectant formula.
Health instructions for travelers in Orient.
Malaria in northern littoral of Gulf of Mexico.
Sleeping sickness serum.
Eating poison ivy leaves as preventive.
Effect of thyroid extract.
Ketogenic diet in treatment of pyelitis.
Therapeutic uses of radio.
What is ithyphen?
Diets under conditions of heat and humidity.
Advantages of mechanical dishwashing.
Air conditioning of tuberculosis hospitals.
Distilled water as cause of disease.
Chart giving weight, height, bust, hip and waist measurements of girls from 12 to 21 years.
Method of eliminating scars.
Use of sulfides internally and externally.
Embalming fluids.
Statistics on health of persons 65 and over.
Women who have contributed to public health through research.
Deodorization of baked goods containing garlic.
Is honey useful in treatment of cataract?
Formulas of cough medicines and nose drops.

The questions included in the present study cover an unexpectedly wide range of subjects. Therefore, it was helpful to classify and tabulate the findings by mechanical means. The data have been grouped under two main headings: (1) Those dealing with 5,762 medical and public health subjects and (2) those relating to specific diseases, of which there were 4,033. In general, these figures indicate a shift in emphasis from considerations of disease entities to those involving hygiene, sanitation, facilities for medical care, climate, diet, and the like. It is also noteworthy that an increased amount of attention is now being given to the care and treatment of the chronically ill rather than to the acute communicable diseases of childhood, which formerly held a position of unchallenged prominence. Still another subject of major interest relates to the availability, cost, etc., of medical, dental, and hospital care, especially for those in the middle and lower income brackets.

MEDICAL AND PUBLIC HEALTH SUBJECTS

There will first be considered the questions relating to medical and public health subjects, these being grouped under 12 headings with the number of questions received under each, as follows:

Questions on medical and public health subjects

Nature of subjects	*Number of questions*
1. Medical and public health facilities	378
2. Personal hygiene, anatomy, and physiology	1,089
3. Nutrition and foods	400
4. Infant and child care	199
5. Sanitation	256
6. Uses and hazards of drugs, devices, and prepared foods	903
7. General health information	1,611
8. Healing arts and cults	80
9. Health laws and regulations	90
10. Statistical information	171
11. Suggestions, claims, theories, cures	188
12. Miscellaneous	397
Total	5,762

The questions asked under each of these 12 main headings will be discussed briefly as to content, trend, and implication.

1. *Medical and health facilities.*—There is a great deal of interest at the present time in medical care and hospitalization. Many people are desirous of learning about the details of medical education and how it compares in efficiency, cost, curricula, and effectiveness with cult education. As the questions are usually asked in good faith, every effort is made to enlighten the inquirer. In this field the American Medical Association has provided information of value. Various pamphlets may be consulted in public and medical libraries or purchased from the association at small cost.

Concerning hospitals, information is sought as to the number of hospitals and beds available in the entire country, or in specified portions thereof, for the medical and surgical care of persons acutely and chronically sick. In some instances the information is desired for study purposes in schools and colleges, while in others an effort is made to locate institutions in which persons with specified ailments may be placed for treatment. At times interest is manifested in various phases of management, equipment, capacity, and personnel of hospitals, clinics, sanatoria, and specialized institutions. Here again the American Medical Association is able to provide certain fundamental statistical information, while the American Hospital Association furnishes data relative to administrative details.

Interest in medical care and hospitalization, particularly of those unable to pay for these services, has increased steadily during the past few years. People generally are eager to learn the details of group medical care, group hospitalization, health insurance and what is vaguely termed "socialized medicine." The Public Health Service is able to supply lists of references to books and periodicals which may be consulted in libraries or purchased.

Pamphlets which record the various findings of the National Health Survey, made under the direction of the Public Health Service, also the proceedings of the National Health Conference and the principles of the National Health Program, both conducted by the President's Interdepartmental Committee to Coordinate Health and Welfare Activities, are now available in the principal libraries of the country.

A large portion of the correspondence of the Public Health Service consists of appeals from or in behalf of persons who are ill. Many of these communications are disturbing by reason of statements that those involved are either unable to pay for or obtain competent medical or hospital services. Discounting for various reasons a certain number of appeals for medical assistance, the conclusion is inescapable that many individuals are in need of such service despite the known readiness of the medical profession generally to respond to these situations.

In analyzing these requests it is apparent that the majority apply to illnesses of long standing, such as crippling, mental defects, birth injuries, and various chronic and invaliding diseases. When a wage earner is incapacitated it is but natural that his dependents will seek, often futilely, a means of his restoration to health. A mother with an imbecile child excites admiration for an enduring maternal hope and arouses a despairing sympathy by her vain efforts to obtain medical attention which may restore a helpless invalid to a normal being.

Requests for aid in rehabilitating chronic alcoholics are appealing, by no means rare, and difficult of a suitable recommendation. It would appear that more thoughtful consideration could well be given to this and similar problems. Equally in need of solution are matters connected with the care of sufferers from chronic and incurable affections.

Having no authority or facilities for the diagnosis, care, and treatment of the sick in the general population, other than legally designated beneficiaries, the Public Health Service refers these requests to the State and local medical, public health, and relief authorities. Not only the secretary of the State medical association but also the State department of health is notified of cases requesting medical attention. In this way the authorities become conversant with needs within the

State. Patients are likewise referred to local health officers and relief authorities. There is reason for believing that many of these referred patients are given medical attention, hospital care, and material assistance through these channels.

It would, of course, be desirable and advantageous for localities so to order their medical-aid policies that a Federal agency such as the Public Health Service would seldom appear in the negotiations.

Disconcerting to the Public Health Service are the frequent letters requesting information that should have been furnished by the attending physician. Many patients and their relatives are prone to seek information as to etiology, prognosis, and treatment of disease from the Public Health Service instead of from their own physicians. Especially is this true with regard to such important medicosocial matters as climate adapted to the alleviation of specific ailments. The Service, of course, cannot properly render advice in such purely professional situations and therefore encourages the asking of such questions of qualified persons who are near at hand, namely, the family physicians.

Many persons believe that the Federal Government has made provision for the care and treatment of members of the general population. However, the Public Health Service, like several other Federal agencies, can care only for legally designated beneficiaries. Therefore, requests for medical care and treatment are referred simultaneously to State departments of health and State medical societies. It may be said that the response of State authorities to such requests has been gratifying.

With regard to securing copies of birth and death certificates it should be mentioned that these requests should be addressed to the State departments of health having jurisdiction, giving the name of the individual about whom the information is sought, and the date and place of his birth or death.

Many others address complaints relative to nuisances to the Public Health Service under the mistaken impression that this Federal agency has jurisdiction over sanitation in States and cities. However, it should be known that such matters are handled by local authorities. It may also be said that there are no Federal or National health laws and regulations relating to the States except as they apply to interstate transportation of diseased persons and other matters relating to the interstate spread of disease. In general, the making and enforcement of laws and regulations for the local protection of the public health are reserved to the States and the cities therein.

The question-answering facilities of the Public Health Service have obvious limitations. Specific requests for information concerning treatment are answered by pointing out that proper treatment depends

upon a correct diagnosis, which cannot be made by mail, but instead should be arrived at by a qualified physician after repeated examination and observations of the patient. Therefore, the reply is given invariably that seekers after medical advice should consult reputable practitioners of medicine.

When the name of a general practitioner or a specialist is requested, the secretary of the State, county, or city medical society is suggested as the best source of such information.

The desire to obtain the services of the "best" physician in a specialized medical field is universal. However, in most instances it is unnecessary to look for such skilled services beyond the borders of one's own locality, and seekers after this information are so advised.

2. *Personal hygiene.*—Since it has become obvious that the most effective way of safeguarding health is through personal effort, there has been a notable increase in requests for fundamental information in anatomy and physiology. People want simple charts showing vital organs; they seek information concerning the make-up and functions of the various organs, especially the eye, ear, nose, and throat. They are interested in the skin, hair, scalp, mouth, teeth, feet, and in unpredictable details of human anatomy. Questions concerning growth, sleep, posture, bathing, clothing, exercise, weight, and sex hygiene are among those frequently asked. Queries as widely separated as birth control, enuresis, menopause, and enemas are by no means unusual.

The greater portion of the questions classified under the heading of personal hygiene come from teachers and pupils. In the past it was the practice of the Public Health Service, in response to such requests, to send a number of specially prepared statements dealing with phases of the subject. Later it was decided to combine a number of these more interesting statements in a single cover. Apparently the new publication, Personal Hygiene, issued as Supplement No. 137 to the Public Health Reports, has filled a need in this respect.

3. *Nutrition and foods.*—With the greater emphasis upon diet as an important factor in health maintenance, the general public has turned its attention to foodstuffs. People now desire to learn about minerals and vitamins in foods. "What vital elements does such and such food contain?"; "Which preparation of cod liver oil shall I buy?"; "Are Smith's vitamin concentrates better than the product marketed by Jones?" These are a few of the typical questions asked by persons who operate without benefit of professional advice. Then, too, it has been found that physicians frequently fail to provide explicit instructions, leaving patients to flounder until sympathetic assistance is secured from an outside source.

The Public Health Service is able, by means of specially prepared statements and appropriate references, to answer many of the questions

falling in this category. Particularly helpful in replying to these queries is the office of nutrition studies of the National Institute of Health. However, insistence is invariably placed upon the necessity of fitting special foodstuffs, particularly elements and vitamins, to a diagnosis made by a reputable physician. The practice of self-diagnosis and medication is at all times pointed out as a practice fraught with danger and even disaster.

4. *Infant and child care.*—It is not uncommon for American mothers to credit the Children's Bureau or the Public Health Service for the favorable results obtained in raising their children "by the book." Both services have issued valuable publications on infant and child care, those issued by the Children's Bureau having a wider distribution and being more widely known. In replying to these correspondents the Public Health Service uses a letter which gives the names and addresses of a number of agencies and references from which reliable information may be secured.

But it is not with the normal child that correspondents of the Public Health Service are entirely concerned. Many parents, especially mothers, seek aid for the care and guidance of subnormal and problem children. Obviously such cases are subjects for individualized study and treatment by experts.

5. *Sanitation.*—If the number of queries relating to sanitation may be taken as a criterion, there is less interest in the health implications of environment than in personal hygiene. This shift in emphasis is quite understandable when the notable advances that have been made in environmental sanitation are contemplated. To mention only a few, there are safe public water supplies, public sewer systems, garbage and refuse collections, mosquito eradicative measures, creditable schools and public buildings, improved public conveyances, and many other similar sanitary improvements. Despite these advances there still are numerous legitimate questions concerning rodent and insect control, ventilation, heating, lighting, quarantine, disinfection, and fumigation. From rural communities questions are often received concerning appropriate methods of sewage disposal. However, as requirements differ in the several States, the Public Health Service is chary about giving advice that may be at variance with local procedure. Manifestly it is better to secure such information from State or local health departments having jurisdiction.

Many of the questions concerning environmental sanitation the Public Health Service is prepared to answer, especially the frequent inquiry relating to mosquito control. The Service feels that the control of rodents is a matter of "building them out" rather than of poisoning and trapping alone. An excellent exposition of ratproof construction is available in Supplement 131 to the Public Health Reports.

While terminal disinfection and fumigation have been rather generally discarded by public health authorities, a surprisingly large number of people continue to ask for the details of these processes, and a few public health officials endeavor to oblige them. This question comes particularly from persons who move into premises previously occupied by patients ill with tuberculosis or other communicable diseases. Correspondents are referred to their local health officers for information relative to local requirements. For information concerning terminal disinfection and other points relating to communicable disease control, correspondents are provided with Reprint No. 1697 from the Public Health Reports, entitled, "The Control of Communicable Diseases," prepared by a Committee of the American Public Health Association.

6. *Hazards of drugs, nostrums, devices, and special preparations.*—Nearly 800 of the total questions received concerned the efficacy of drugs, devices, and preparations largely recommended by proprietary interests for the treatment of various ailments. Many inquirers evince interest in the composition and claims of dentifrices and cosmetics. Also included in this group are drugs and remedies prescribed by attending physicians, concerning which the patient or his relatives and friends desire enlightenment. It is a strange commentary upon the relationship between patients and physicians that information which the physicians should supply is so often sought of the Public Health Service.

As the Public Health Service has little information of its own concerning nostrums and quackery, such inquirers are usually referred to the publications of the American Medical Association.[1] The Council on Pharmacy and Chemistry of the association, having made investigations of many alleged remedies, systems, and devices, is in position to supply helpful information regarding articles in this field. Similarly, in the field of mechanical contrivances, therapeutic lamps, and like equipment for treatment, the Council on Physical Therapy of the American Medical Association is able to offer appraisals based upon careful examinations and investigations. The Council on Foods of that association can furnish helpful information on food preparations.

One of the questions frequently received is how to stop the tobacco and alcohol habits. Such queries cannot be answered categorically. While various expedients have been suggested, the exercise of will power appears to hold the greatest promise of successful results.

Since helium has attained a measure of success in alleviating asthmatic attacks, at least temporarily, a great deal of curiosity has been manifested by physicians and patients in the method of using this gas. With the assistance of a physician who has been prominently identified

[1] A catalog of the publications issued by the American Medical Association may be obtained without cost by addressing the association, 535 North Dearborn Street, Chicago, Ill.

with the scientific application of helium for the benefit of asthmatic patients, an informative statement has been prepared.

7. *General health information.*—The largest number of queries in any one of the 12 sections of the present series was recorded under the heading of general health information. Included in this grouping are such subjects as climate and localities, applications for medical advice and diagnosis, community health, health safeguards, prevention of various diseases, immunization, and questions concerning private, hospital, and public health nursing. Questions asked less frequently concerned first aid, bacteriology, diagnostic tests, periodical medical examinations, mineral springs, and eugenics, certainly a farflung and diversified scope of interest.

Because of the obvious pitfalls into which well-intentioned advisers may step, the Public Health Service had steadfastly declined to hazard an opinion as to "the best climate" or "the healthiest place in the country." As most of the people who ask these questions have some form of illness, it is felt that appropriate advice should be forthcoming from physicians conversant with the patient's physical and mental condition, to say nothing of his economic status. However, to guide the physician and patient in selecting a suitable climate, the Public Health Service has prepared a general statement on "Climate and Health," which has proved useful in many instances.

A fairly large number of persons give their symptoms in detail and ask the Public Health Service to make a diagnosis and prescribe by mail. However, the Service takes the unassailable position that diagnosis and treatment are matters to be undertaken only by the reputable physician who is in position to examine and observe the patient.

How to improve the health of the community, either urban or rural, is another question frequently directed to the Public Health Service. Specific questions of this character can usually be answered satisfactorily or the questioner is referred to periodicals or textbooks containing the needed information. As a matter of fact, most queries of this kind are referred to State, city, or county health departments of the jurisdictions in which the person resides. It often happens that the enthusiastic searcher after knowledge overlooks the authentic sources of information that are so much closer at hand than are those in Washington.

Questions concerning germs, parasites, and specific diseases often come from young men and women who are attracted to the fields of medicine, bacteriology, and nursing as careers. Information concerning the training of technicians can be secured by addressing one or more of the schools listed in the annual hospital number of the Journal of the American Medical Association. In any of the fields mentioned, first-hand information can be secured from persons already employed.

8. *Healing arts and cults.*—Judged by the volume of requests for information, there is apparently little interest on the part of the correspondents of the Public Health Service in the healing arts and cults outside the regular practice of medicine. Occasionally someone attempts, by invidious comparison of results of treatment by regular and irregular practitioners, to create a diversion. However, as the burden of proving the incompetency of physicians rests with those who bring the charges, the Public Health Service has refrained from entering such controversies. Those desiring information concerning the various cults are referred to the publications of the American Medical Association, a catalog being available for the asking.

9. *Health laws and regulations.*—Because of insufficient personnel for compiling and lack of funds for printing health laws and regulations, the Public Health Service does not have up-to-date information of this type available for distribution. However, the desirability of compiling and publishing important health laws so that inquiring persons and health workers may be informed regarding current legislation on various health subjects is recognized, and it is hoped that there may be a resumption of compilations of such material. Numerous queries are received both from this country and from abroad for standard laws and regulations governing sanitation, food and drug inspection, factory inspection, and other fields of public health. Foreign correspondents, unacquainted with the set-up of political subdivisions in the United States, frequently ask for codes on health, sanitation, plumbing, housing, or other subjects in which they may be interested. Considering that States, cities, villages, and other units prepare and adopt codes suited to their specific requirements it is impossible, of course, to furnish information applicable to the entire country without communicating with thousands of officials. Even were such a procedure practicable the result would be confusing and unsatisfactory to a foreigner, especially as translating and interpretation would be necessary.

10. *Statistical information.*—Statistics relating to the occurrence of reportable diseases and some mortality data are collected by the Public Health Service, while complete and final (the comprehensive) mortality data for the United States are collected and compiled by the Bureau of the Census. The Public Health Service supplies such morbidity and mortality data as may be available, principally to physicians preparing scientific papers, students of statistical procedure, teachers, and others interested in specific disease problems. Numerous communications are received from advertising agencies desirous of promoting the sale of remedies designed to relieve or cure sinusitis, asthma, diabetes, athletes' foot, and other ailments. Unfortunately requests for morbidity reports for these and many other prevalent diseases cannot be complied with because the conditions are not report-

able and statistics regarding their prevalence are not available. In some instances approximate information is available in publications presenting the results of sickness surveys such as the reports by Collins on illness in 9,000 families.

Insofar as the notifiable diseases are concerned the Public Health Service publishes in the weekly Public Health Reports the current data from States and cities as promptly as practicable, and annual data are collected, compiled, and published as soon as possible after the close of each year.

11. *Claims, theories, and cures.*—"*Sure cures.*"—A considerable portion of the letters addressed to the Public Health Service concern suggestions for the treatment of various ailments, claims for remedies considered by their sponsors to be infallible, and new theories of disease causation. Nor is this correspondence limited to obviously ignorant persons. Occasionally a physician presents a theory, discovery, or claim that is manifestly absurd. Such persons intentionally overlook the fact that claims that are untested or unproved by careful scientific experimentation or are unacceptable and unrecognized by the medical profession cannot be considered by the Federal Government. Sometimes, too, there are communications from obviously well-educated persons. Unfortunately the well written, grammatically constructed, and sometimes plausible presentations fail to hide the impracticability or even absurdity of the ideas. The vast majority of letters presenting "cure-alls," and they are surprisingly frequent, have common characteristics. They almost always come from the ignorant, whose knowledge of spelling and composition is rudimentary; and more often than not, the letter is written with pencil on a poor grade of scratch paper. Many of these correspondents are elderly men and women with too much unoccupied time on their hands. Retired persons, housewives, and individuals whose work leaves extended intervals for reflection are among those who devote their spare time to pondering on the ills of mankind and devising means of relieving them.

Many times the proposed "infallible" remedy is not original but was gleaned from an old medical book, or was passed down in the family by an illustrious ancestor, or was obtained from an old Indian chief. Another factor common to such "discoveries" is their supposed applicability to a number, even a host, of ailments. Whereas the wise physician cautiously applies a single remedy of known action, the correspondent extolling a "cure" finds his material useful for many illnesses. Moreover, the cure is quick in action, low in cost, immediate in its relief, and permanent in its results. Not even paralysis and permanent disability are obstacles to the person with a "cure."

There is still another distinctive characteristic of the person with a claim, theory, or remedy, namely, his acknowledged willingness to receive or his demand for a reward for his "shot gun" concoction. Seldom does he exhibit the altruistic magnanimity of offering his discovery for the general welfare of mankind, to be used without remuneration to himself. Though there is no evidence, scientific or otherwise, in support of his contentions, he specifies a cash sum, frequently ranging between $100,000 and $1,000,000, as an appropriate reward for his devotion to his fellowman. Foreign correspondents, unable to gain a hearing for their preposterous claims in their own countries, are particularly prone to specify large sums for divulging their secrets to supposedly unenlightened Americans.

To persons presenting claims in behalf of theories, discoveries, and cures the Public Health Service has a uniformly courteous but firm reply. In the first place the Public Health Service has neither the inclination nor the facilities for investigating such claims, very few of which are offered by qualified persons or appear to possess merit. Second, the burden of proof for evidence that a remedy is effective rests upon the person who suggests it. Evidence would consist of results by unimpeachable scientific investigations and endorsement by reputable medical societies, laboratories, and other organizations. In the absence of such evidence there is little reason for serious consideration of the steady flow of claims for various remedies.

There is a serious side to the "sure cures" devised by the ignorant and unscrupulous, and this concerns the administration of worthless or harmful drugs to the sick in the absence of a diagnosis of the ailment. Not only are the sick often deprived of skilled treatment, but a damaging delay in such treatment occurs while a worthless remedy is being administered. It is known, from frequent admissions that have been made by the inventors of remedies, that there is widespread violation of the medical practice laws.

In a few instances the exploiters of remedies of secret composition have urged their claims in person, often traveling considerable distances to reach Washington. The personal presentation of their claims has accomplished little beyond the personal satisfaction afforded and has uniformly discouraged the further promotion of the particular remedy or method advocated.

Nor do all the "cures" submitted to the Public Health Service come from citizens of the United States. Many unproved, even fantastic, remedies are proposed by residents of Canada and Central Europe. Apparently unable to gain a hearing from physicians and officials in their own countries relative to their preposterous claims, and apparently having heard of the gullibility of Americans, these enter-

prising but unscrupulous venders evidently regard the United States as a favorable place into which to introduce their dubious wares.

The nature of the theories and claims made by persons asking a hearing in behalf of their alleged "remedies" and "cures" is well illustrated in the list that follows. In presenting this list an effort has been made to retain so far as practicable the peculiarities of thought, the all-inclusiveness of the claims, and, in a few instances, the crudities of spelling. It should be remembered that many of the persons presenting these claims are actually treating the sick, though without benefit of even elementary education, training, experience, or judgment, and very rarely with a license to practice medicine. Infantile paralysis, while not a major cause of sickness or death, continues to excite the imagination and demand the attention of those impelled to seek a theory of its causation, a prophylactic, or a remedy.

SAMPLES OF THEORIES, CLAIMS, REMEDIES, AND CURES PRESENTED BY CORRESPONDENTS OF THE PUBLIC HEALTH SERVICE

Angina pectoris—Also varicose veins, rheumatism, "arthritus," "arterie-sclosis," infantile paralysis, and even cancer; they all start from one microbe. External application of mixture of boiling water, sweet butter and fine iron dust and enough sugar to make a paste, will draw out the microbe and make the sick person normal within 24 hours.

Asthma—Caused by direction of the wind and type of living quarters.

Bacteria—An invention for national defense against destructive disease bacteria; consists of masonry base on which are mounted valley type reflectors, infra-red, ultra violet and cathode radiation bulbs and lamps sending out radiations capable of destroying bacteria and making a city practically sterile and thereby preventing disease. (Elaborate drawings included with claims.)

Cancer—Cure depends upon new law of balance unknown to biology. Has a certain healing liquid for cancer and other ailments. For cancer and skin diseases a swami has a remedy but complains that physicians are constantly trying to learn his formula.

Cholera—Learned of cure for "colora" from great grandmother. Remedy was successfully tested on a dying man 100 years ago.

Dysentery—A quick cure by a weed handed down to his father during the Civil War by Indians.

Ear infections—Also mastoiditis; a medical herb which may possibly be useful in the treatment of infantile paralysis.

Eczema—Also other skin diseases; has a certain ingredient, not a chemical. Has also treated 600 cases of infantile paralysis successfully in Toronto.

Epilepsy—Has already cured 6 persons and can cure others. Is a telephone linesman but cannot keep his mind on his work because of excitement over his discovery.

Hay fever—Also other ailments; is not a doctor or surgeon and "is not crazy." Will disclose his remedy for a monetary consideration.

Infantile paralysis—(*theories as to causation*)—

Due to use of pasteurized milk in which vitamin C has been destroyed; the milk was originally obtained from cows living on a poverty-stricken diet.

Due to poison sprays on fruits and disinfectants in swimming pools.

Due to various pollens, gases from plants, and dried dust particles from wings and bodies of dead flies, moths, etc.

Germ comes from intestinal parasite in birds, the droppings from which are left on skins of grapes and other fruits. Unwashed fruit skins convey disease to intestinal tracts of humans.

Germ is carried by crickets, which when eaten in grass by cows, causes paralysis among those consuming the milk.

Due to overabundance of sexual energy; recommends removal of sex glands for prevention.

Caused by eating grapes containing microbe or spore.

Caused by penetration of spinal cord by sun's rays in summer, vital gray matter being burned up.

(*Alleged remedies for treatment and cure*)—

A detoxifying element for cure.

Dye or dye compounds which, when properly used, have astounding results.

Herb remedy for this and 15 other chronic ailments.

Liniment composed of one-half pint big red ants and one-half pint alcohol.

Massage with polecat oil.

Medicine composed of several ingredients for paralysis, all ailments, blood poison, burns, and all kinds of skin trouble.

A barber, with much time for study, has cure for infantile "paralious."

Indian lime juice manufactured by London firm.

"Experiments with cosmic rays has restored function to partially paralyzed limbs."

"2-Wa-ultra violet ray fills shriveled limbs, restores function of circulation and restores use of limbs which have been useless as long as 20 years."

Ills of Nation—Are due to meat diet. "Disease is simply the retribution of outraged Nature."

Influenza—Also colds, coughs, lung and throat troubles, bruises, blood poisoning, pneumonia and swellings; also good for horses. Willing to sell formula for $15,000.

Insanity—Also deafness and blindness; these all respond to his remedy. The conditions are due to consumption of two kinds of infected food.

Leprosy—Also infantile paralysis. Cures with "cosmotherapy."

Pneumonia—Also colds and influenza; this remedy will cure within 30 minutes, kills 30 kinds of germs.

The remedy is elder flower tea.

A specific and rapid cure obtained from an old Yorkshire farmer.

Pains—Remedy affords relief from body pains; gives rest, peace of mind, and induces sleep. A system of "diname." Relief is induced by looking at a crude outline of the human body and by following certain directions.

Rheumatism—Also piles, kidney trouble, gonorrhea, bowl trouble and boils. Formula available for a monetary consideration.

Sickness and disease.—May be prevented by a common sense method of thinking, so simple that it has been overlooked.

Sinusitis.—Cure produced by a medicinal herb. Applied externally it cures gunshot wounds, carbuncles, sunburn, and things too numerous to mention.

Toothache.—Also earache, indigestion, rheumatism, high-blood pressure, and light cases of paralysis. Formula: 1 gallon gasoline, 3 ounces of dry pulverized pepper. Dose: 10 drops on lump of sugar three times a day. Good for almost any disease.

Tooth decay.—Claims to have discovered and isolated two organisms responsible for tooth decay and has prepared a viruslytic dentifrice.

Tuberculosis.—Has discovered a plant with a pleasant taste and not harmful. Treatment consists of three remedies: First, opens the tissues and raises the sputum; second, toughens the tissues; and third, heals and soothes.

12. *Miscellaneous.*—Under this heading were included communications requesting general health and sanitary information, complaints of nuisances, requests for advice concerning professional education facilities, and requests for copies of birth and death certificates. Most important in this classification are the requests for free medical advice, treatment, and hospitalization. Very often the request is for funds to be used in transporting a patient to a locality supposedly favorable for a specific ailment, with additional funds for maintenance and treatment.

DISEASES

Queries coming to the public Health Service indicate that interest in communicable and other diseases continues unabated, but that this interest fluctuates with periods of undue disease incidence and with announcements of new observations or new control measures. Classified according to relative numbers, queries concerning the principal communicable diseases may be arranged according to whether a small, moderate, or considerable number of queries was received:

Small	*Moderate*	*Considerable*
Dysentery.	Cholera (Asiatic).	Encephalitis.
Erysipelas.	Diphtheria.	Gonorrhea.
Measles.	Influenza.	Leprosy.
Meningitis.	Malaria.	Poliomyelitis.
Scarlet fever.	Rabies.	Syphilis.
Typhus fever.	Rocky Mountain spotted fever.	Tuberculosis.
Whooping cough.	Smallpox.	Yellow fever.
	Tetanus.	
	Typhoid fever.	
	Undulant fever.	

The diseases included in the several categories have been arranged alphabetically for convenience of consideration and do not represent the relative numbers of queries concerning each.

It will be noted that in the category of diseases concerning which relatively few questions were received are several of the acute infections of childhood, as well as several others of relatively infrequent occurrence. Most State and many city health departments have prepared instructive literature dealing with these ailments and there has been correspondingly less need for addressing questions of this nature to the Public Health Service. However, the Service has publications or statements dealing with these diseases and single copies are available for the asking.

There are interesting and explainable reasons for the concern manifested in the diseases included in the second group.

Asiatic cholera.—There has been no case of this disease originating in the United States since 1911, although there have been some imported cases and cases developing from contact therewith. While there is little likelihood, because of the relatively cleanly habits of the people, the protection of water supplies, and the general excellence of sanitation, of this disease gaining a foothold in this country, many persons, since its reappearance in the Orient, have evidenced a marked interest in it. Several correspondents have suggested remedies for the prevention and treatment of cholera, these having been culled from old textbooks on medicine. Other persons whose duties have taken them to Oriental countries seek information concerning protective vaccination against cholera.

Diphtheria.—The chief interest in diphtheria on the part of the general public today is in the means of prevention. The rapidity with which diphtheria will cease to be an outstanding public health and medical problem is dependent upon the year-round persistence with which immunization is advocated and applied. Correspondents of the Public Health Service are largely interested in the diagnostic tests for diphtheria susceptibility and in the methods and effectiveness of immunization. Statistics relative to morbidity and mortality of diphtheria are requested frequently by physicians, public health and social workers, as well as students.

Influenza.—Some of the records included in the present survey were obtained during the considerable incidence of influenza in 1937, when there was a corresponding increase in mortality. Many questions are asked about influenza, chiefly as to its cause, distribution, prevention, and treatment. Questions continue to be received regarding the efficacy of vaccines against the disease. Individuals with infallible "cures" seldom exclude influenza.

Malaria.—Perhaps the majority of letters concerning malaria come from school children who have been told by their teachers to seek information concerning the prevention of this disease. Data are often sought relative to the distribution and prevention of malaria so that precautionary measures may be instituted and protective measures known to be effective may be more widely applied. A fair number of queries concern the treatment of malaria and relate to instances in which ordinary medication has been ineffective. While the Public Health Service will not recommend a line of treatment, it is willing to enter into correspondence with attending physicians and assist in the diagnosis of thick blood smears and recommend treatment presumably effective for the type of malaria involved. The service has publica-

tions dealing with various phases of the malaria problem, among which may be mentioned the following:

Supplement 18. Malaria—Lessons on its nature and prevention.
Leaflet. Treatment of malaria. 1938.
Reprint 1878. Protracted incubation in malaria fever. Report of a case and a review of the literature.

Rabies.—A great deal of controversy has arisen over the merits of vaccination of dogs against rabies. However, the Public Health Service believes that as yet there is no authentic or convincing evidence that would lead to the belief that successful antirabic vaccination for dogs is available, though such is greatly to be desired and theoretically possible of achievement. Although the human death rate from rabies is exceptionally low, interest in the disease, because of the intermediate role played by dogs, is unusually high. Many communities struggling to solve the problem of rabies control are advocating canine immunization and are possibly neglecting the more practical method of combating the disease by controlling the dog population.

Rocky Mountain spotted fever.—Since this disease is prevailing to an apparently greater extent in some sections of the eastern United States, increasing interest has been manifested in tick bites and the prevention, manifestations, and treatment of the malady. In fact a considerable portion of time is spent each year by officers of the Public Health Service in discussing with distracted persons the possibility of infection following tick bites and the means of securing future protection against the disease. While an effective prophylactic vaccine has been evolved, it has not yet been considered desirable or necessary to advocate its widespread application in the eastern section of the United States.

Smallpox.—During 1938 smallpox prevailed to a greater extent in the United States than in several years past. This condition of affairs has led many persons with inquiring turns of mind to examine the present and past statistics of the disease and seek information concerning the efficacy of vaccination. It is quite apparent that, because of the comparative mildness of smallpox and its previously slight incidence, vaccination has been neglected to a considerable extent, thereby building up a large nonimmune population.

While it is to be hoped that a virulent type of smallpox will not appear, it should be remembered that, in the absence of effective vaccination, the disease may assume epidemic proportions and virulent form as it did in Denver in 1921 and 1922, when 1,718 cases, with 285 deaths, were reported, and in Minneapolis, in 1924, when 993 cases occurred, with 221 deaths.

Tetanus.—Considering its relative infrequency, the interest in tetanus is surprising. However, the majority of the requests come from persons who are mildly curious rather than genuinely interested

in the prevention and treatment of this affection. Because tetanus is not an outstanding public health problem, the Public Health Service has no standardized literature but supplies suitable references instead.

Typhoid fever.—Although the efforts to reduce the incidence of typhoid fever have been, generally speaking, attended with marked success, there are still a number of localities in which the disease continues to prevail to an unwarranted extent. In some instances infection has been traced to roadside eating places, such as the one mentioned in the Public Health Reports of June 17, 1938. Persons residing in communities in which typhoid fever continues to be encountered write to the Public Health Service for information which could be obtained more satisfactorily from State or local health officers. An additional number of correspondents inquire about the relative efficiency of antityphoid vaccination, especially since the Army Medical Corps has advocated two injections of vaccine as offering the best protection against the disease.

Undulant fever.—Questions relating to undulant fever are concerned principally with etiology, prognosis, and treatment. Judging from the considerable number of queries about this disease, many persons have been incapacitated by this ailment which, until recently, failed to respond to the medication usually applied. Lately, however, success has attended the use of sulfanilamide, making it possible to hold out hope to the afflicted patients. References to the successful application of this drug are now available to attending physicians.

Encephalitis.—The unusual incidence of encephalitis in St. Louis in 1934 and the subsequent sporadic appearance of this malady in other sections of the country has greatly stimulated interest in the etiology, prevention, and treatment of the ailment. Unfortunately, the extensive research by the Public Health Service and other scientific organizations has failed to disclose fundamental measures that may be usefully employed in combating this disease. The results of studies in St. Louis by the Public Health Service have been published in Public Health Bulletin No. 214, copies of which may be consulted in many public, medical, and university libraries.

Gonorrhea and syphilis.—The greatly increased interest in the venereal diseases is the natural outcome of an enlightened and widespread viewpoint concerning the prevention and treatment of gonorrhea and syphilis. The problem has been attacked so vigorously and with sc much intelligence that practically every angle has been covered. Scores of pamphlets and books have been prepared and the public has been otherwise informed through public addresses, radio talks, and the public print. Like many other agencies vitally concerned with the conquest of the venereal diseases, the Public Health Service has issued a considerable amount of literature on the subject. This has been distributed judiciously throughout the country.

Poliomyelitis.—Several years ago, when animal experimentation made it appear likely that a nasal spray might afford a measure of protection against poliomyelitis, hundreds of inquiries were received asking for the ingredients of the solution and the method of its application. Unfortunately this method, which apparently was successful when applied to experimental animals, was not efficient when human beings were concerned. This resulted in the practical abandonment of the method.

Parents contemplating travel with children during the prevalence of poliomyelitis are usually anxious to learn what precautions should be taken, especially as regards food and drink, while away from home. Information is also requested concerning the incidence of poliomyelitis in the localities through which they will pass and whether it is safe to go through infected localities. In the absence of more definite information as to how poliomyelitis is transmitted it would obviously be foolish for anyone to express an opinion as to the safety of travel during the prevalence of this disease. At such times the Public Health Service gives freely of the current data at its disposal but suggests that the responsibility for illness resulting from travel through infected territory rests with the persons involved. There is an element of danger involved even in crossing the street.

There is a constant interest in poliomyelitis morbidity and mortality data, and it is possible to supply this information for a period of years.

Tuberculosis.—It is encouraging to learn that, despite the remarkable progress that has been made in reducing the incidence of tuberculosis, the interest of the people generally in the institution of still greater efforts continues unabated. Insofar as correspondents of the Public Health Service are concerned, this interest appears to cover every conceivable manifestation of tuberculosis. When the disease involves an organ other than the lungs, the interest in prognosis and treatment is seemingly intensified, especially since it appears difficult for patients or relatives to secure suitable explanations from attending physicians. In these extremities people frequently turn to the Public Health Service for enlightenment. Fortunately the Service has available pamphlets and statements which afford considerable authentic and valuable information. When questions in this field cannot readily be answered by the Public Health Service, they are referred to the National Tuberculosis Association and other organizations for consideration.

A considerable number of the queries relate to the statistics of the disease. These are used largely by physicians in preparing scientific papers, by writers of newspaper and magazine articles, and by students preparing theses.

Yellow fever.—With the announcement that there is a residuum of yellow fever in the jungles of South America and that the exact means

of its propagation and transfer to human beings is a matter for further study, scientific and lay interest has been greatly stimulated. As a result, many questions concerning the disease are received, especially regarding its possible introduction and transmission to the United States by passengers and insects carried by airplanes.

In this connection it is of interest to note that the Public Health Service has instituted several important steps to meet the situation arising from these unexpected developments. These may be summarized as follows:

1. Officers of the Public Health Service have been sent to South America to study the manifestations of yellow fever with a view to increasing the effectiveness of control measures.

2. A laboratory has been established in Miami, Fla., for the special study of mosquitoes which carry yellow fever and for devising control measures.

3. Inspections of aircraft, their passengers and cargo spaces, arriving from presumably infected territory, have been increased in efficiency as have the methods of destroying insects on these carriers.

While it is unlikely that yellow fever will be introduced into the United States from South America or that it would be able to gain a foothold if the present defense proves inadequate, the Public Health Service is striving diligently to close all possible loopholes. Correspondents interested in yellow fever control are provided with a recently prepared statement and other appropriate material enumerating the various measures in vogue.

Leprosy.—Although the control of leprosy in the United States is a relatively minor public health problem, the disease is so well known through dramatizations appearing in the literature as to constitute a major point of interest. The fact that there is but one hospital (at Carville, La.) in the United States for persons suffering from the infectious form of the disease and that this institution is operated by the Public Health Service, brings many questions to this agency. Reprints from the Public Health Reports and a specially prepared statement afford much information on leprosy insofar as the Service has jurisdiction.

However, interest in leprosy is not confined to its prevalence in the United States but extends to the Philippines, Hawaii, India, and elsewhere.

Inasmuch as the Service has not gathered a great deal of information concerning leprosy in foreign lands, such inquiries are referred to the officials having jurisdiction. The American Mission to Lepers, 156 Fifth Avenue, New York City, has been a fruitful source of reliable information.

Facilities for answering questions.—In preparing replies for its numerous correspondents the Public Health Service utilizes not only its

own resources, but those of various other Federal and of voluntary agencies.

Besides approximately 2,000 reprints from the Public Health Reports, the Public Health Service also has some 400 multilithed statements, single copies of which are sent in response to specific requests for information. When a trend of questioning is noted for which material is not at hand, a special statement is prepared by some one familiar with the subject. Upon several occasions outstanding medical specialists outside the Service have cooperated in preparing authentic articles.

When neither printed nor duplicated material is available, appropriate answers are prepared by persons in the Service best fitted to supply the required information.

Despite the relatively extensive facilities already mentioned, the Service is frequently called upon for information which can be furnished more readily by other agencies. State, county, and municipal health departments and medical societies are probably called upon for information more than any others.

Among other agencies to which communications are referred at times may be mentioned the following:

American Red Cross.
American Birth Control League.
American Pharmaceutical Association.
American Society for the Control of Cancer.
American Society for the Hard of Hearing.
Food and Drug Administration, Department of Agriculture.
Bureau of Home Economics, Department of Agriculture.
Children's Bureau, Department of Labor.
Bureau of the Census, Department of Commerce.
National Tuberculosis Association.
National Committee for Mental Hygiene.
National Organization for Public Health Nursing.
National Recreation Association.
National Society for the Prevention of Blindness.
National Safety Council.
Office of Education, Department of the Interior.
Women's Bureau, Department of Labor.

One of the vexatious problems arising from question-asking is that created by students preparing themes and theses and professional writers engaged in producing special articles. Very often the queries from these sources indicate plainly that the desire of the questioners is to obtain material without personal effort. It may be that the student who seeks extensive information and data is either unacquainted with the methods of library research or is just plain lazy. Frequently in instances of this kind it would require days or even weeks of painstaking effort on the part of Public Health Service employees to secure the desired facts. In a way the inability or unwillingness

of students and others to obtain data through their own efforts is a reflection upon the guidance and teaching provided by their instructors. In any event it is an imposition upon a Government agency for a special writer to ask 25 detailed questions concerning garlic or a novelist to request information about the effects of various disturbances of the thyroid gland. Quite obviously the efforts to acquire information for personal financial profit should be pursued by those who need the facts. It also follows that students who are assigned topics or theses in the course of their education should personally assemble the facts and prepare the material.

What has been said applies to what may be considered unreasonable question-asking for personal gain or even personal profit. The Public Health Service considers it a duty to answer bona fide requests for information, especially when susceptible of ready opinion or suitable reference. As a part of the Federal Government, it feels that this is an obligation justly claimed by the citizen.

HOW TO PROCEED IN GETTING HEALTH INFORMATION

While the Public Health Service has no desire to shirk its duty in providing information, it is felt that, upon many occasions, enlightenment could be provided more speedily and quite as satisfactorily nearer home. The approximate order in which such information should be sought may be stated as follows:

1. Local school, public, and medical libraries contain a wealth of material which is often overlooked in the anxiety to secure information from presumably more authoritative sources. However, librarians generally are skillful and helpful both in utilizing their own facilities and suggesting the means of procuring references from other places. A local library is certainly a first thought in securing information, and it may be mentioned that even so prosaic a reference as an encyclopedia frequently yields material of surprising value.

2. For some mysterious reason patients either ignore or hesitate to ask questions of their attending physicians. In their turn medical attendants somewhat similarly fail to meet the quite reasonable questions of their patients with frank, truthful, and informative replies. This failure of doctors to meet their obligations places an awkward strain upon individuals and organizations located at a distance and not conversant with the peculiarities of each situation.

3. It is also noticeable that many information seekers are unaware of the presence of city or county health officers or with their facilities for giving appropriate advice on public health matters. When local officials are not available, there still is the State department of health, usually located at the State capital, from which reliable information may readily be obtained. These organizations, by reason of ampli-

fied personnel, are now better prepared than ever to furnish information, including publications dealing with many public health subjects lying within their fields.

4. When the sources of information already mentioned fail to produce results, national health organizations, both official and voluntary, may be consulted. However, when it is recalled that many communications received by the Public Health Service are, by reason of their peculiar requirements, referred for reply to State and local health departments, as well as to other organizations, it should be apparent that local sources of information should be tapped before going afield.

REPORT OF THREE CASES OF ARIBOFLAVINOSIS

By J. W. Oden, M. D., L. H. Oden, Jr., M. D. and W. H. Sebrell, *Surgeon, United States Public Health Service*

In 1938 Sebrell and Butler (*1*) reported the experimental production of lesions in the angles of the mouth, on the lips, and around the nose and eyes, due to riboflavin deficiency. The most characteristic changes were reddened, macerated lesions in each angle of the mouth, which progressed to transverse linear fissures. The lips had a reddened, denuded appearance, and there was a scaly, slightly greasy dermatitis around the nasolabial folds and in some cases around the eyes and ears.

Patients with lesions similar to these have been frequently seen by two of us (J. W. O. and L. H. O.) in a rural section of Georgia over a period of many years. In a brief trip through a rural area in the neighborhood of Waycross, Georgia, in early March, three cases were found with lesions of this type which responded to treatment with synthetic riboflavin. The significant details in regard to these cases are as follows:

Case 1.—An 82-year-old white female presented reddened macerated areas in each angle of the mouth. These areas were covered with a small accumulation of dried secretion, and there was a small, transverse fissure in the right angle of the mouth, extending slightly onto the skin of the face and not involving the mucosa of the mouth. The dorsum of the tongue was very red. The patient gave a history of having had the lesions in the angles of the mouth for at least 2 years, during which time they varied considerably in extent but never entirely healed. There were no other skin lesions or symptoms with the exception of pain in the legs and hips of uncertain duration and etiology. The dietary history was vague, except for the information that milk, green vegetables, and lean meat appeared to be either entirely absent from the diet or to be used in very small quantities. One pound of dried yeast had been taken during the preceding 6 months.

The patient was started on a daily dose of 5 mg. of synthetic riboflavin. No other treatment was given, and the patient remained in her home. Three days later the lesions in the angles of the mouth had completely disappeared except for slight reddening in the healed areas. There was no change in the appearance of the dorsum of the tongue, or in the pain in the legs and hips.

Case 2.—A white female 61 years of age presented a reddened, transverse streak with slight maceration in each angle of the mouth. The mucosa of the lower lip was abnormally red, smooth and shiny, with a denuded appearance. There was a superficially eroded and crusted area in the right naris and a scaly, slightly greasy, desquamation, without erythema, involving both upper and lower eyelids and the inner and outer canthi of both eyes. There was also a slight scaliness over the nose and on each side of the face at the hair line. The patient gave a history of having had the lesions in the angles of the mouth for 2 to 3 weeks. The dietary history was uncertain, but the diet appeared to consist mainly of grits and biscuits and home-cured pork. It was stated that no milk and no vegetables were used, with the possible exception of cabbage. She was started on a daily dose of 5 mg. of synthetic riboflavin. No other treatment was given, and the patient remained in her home. At the end of 3 days the lesion in the right angle of the mouth had completely disappeared and the lesion in the left angle of the mouth had receded until only a very slight degree of erythema was visible. The scaly dermatitis entirely disappeared from the nose and from around the eyes. The erosion in the right naris showed definite improvement. The scaly patches on the face at the hair line were still present. The lesions entirely disappeared during the following 12 days.

Case 3.—A white female 44 years of age presented a small, reddened, transverse streak in each angle of the mouth which showed slight maceration. The upper and lower lips were abnormally red and had a thin, shiny, denuded appearance. The patient stated that this lesion had been present for 6 or 7 months. The dorsum of the tongue was reddened and the patient complained of a "scalded" feeling at tip of tongue. There was a dry, scaly, pigmented lesion on each lower leg which had the typical appearance of an old pellagrous dermatitis. She was started on a daily dose of 5 mg. of synthetic riboflavin. Within 2 days the abnormal redness and the denudation entirely disappeared from the lips and there was definite recession of the lesions in the angles of the mouth, although they had not entirely healed. There was no change in the dermatitis on the legs. The riboflavin was then given every other day for three doses, and within 7 days the lesions in the angles of the mouth had entirely disappeared except for a slight erythema. The mouth was entirely normal 24 days after beginning treatment with riboflavin.

SUMMARY

Three cases with lesions similar to those reported by Sebrell and Butler (*1*) to be due to riboflavin deficiency were found in a rural section of Georgia. These lesions receded under treatment with a daily dose of 5 milligrams of synthetic riboflavin. The ease with which these cases were found and the fact that two of us (J. W. O. and L. H. O.) have seen many such cases in our practice in rural Georgia leads us to believe that ariboflavinosis is, in all probability, a common dietary-deficiency disease in the southern United States.

REFERENCE

(*1*) Sebrell, W. H., and Butler, R. E.: Riboflavin deficiency in man. A preliminary note. Pub. Health Rep., **53**: 2282 (1938).

SYLVATIC PLAGUE: STUDIES OF PREDATORY AND SCAVENGER BIRDS IN RELATION TO ITS EPIDEMIOLOGY[1]

By WILLIAM L. JELLISON, *Assistant Parasitologist, Rocky Mountain Laboratory, United States Public Health Service*

Incident to studies of sylvatic plague made in the epizootic area of southwestern Montana in 1936, it was observed that flesh-eating birds of numerous species were unusually abundant. Their numbers and their dependence on rodents as an important source of food supply suggested that these birds may play a role in the epidemiology of this disease. The studies reported here pertaining to this problem were made in Beaverhead County, a part of the above-mentioned area, during the summers of 1936 and 1937.

The possibility that birds may be thus involved has received but little attention. Rucker, in 1909 (*1*), wrote as follows concerning the burrowing owl (booby owl) in California:

> There is reason to believe that the booby owl, which is a constant companion of the ground squirrel, occupying the same burrows with him, may play an important role in the dissemination of the epizootic. It is thought that this bird, flying from burrow to burrow, may carry infected fleas for long distances. If this be found true, the problem of the eradication of the epizootic will thereby be greatly complicated.

Egorov, in Russia, in 1933, (*2*) reported having found virulent plague bacilli in the casts[2] of an eagle, *Aquila hipalensis orientalis*, that had been fed infected rodents. Wu Lien-Teh, in 1936 (*3*), commented on this work as follows:

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[1] From the Division of Infectious Diseases, National Institute of Health, Rocky Mountain Laboratory, Hamilton, Mont.

[2] Firm masses of undigestible material consisting mainly of bones, hair, and feathers ejected from the stomach of raptorial birds.

We fail to see in what way "casts" or other material scattered by them (birds) could contribute to the spread of plague. To our mind higher animals may serve as spreaders of plague only if and when they are carriers of infected fleas.

Meyer, in 1934 (*4*), in regard to plague in California, stated:

Cannibalism among squirrels, and in all probability buzzards, is a complementary factor in the dissemination of the disease.

FIELD OBSERVATIONS

Species of flesh-eating birds present and notes on their food habits.—The flesh-eating birds most numerous and active in Beaverhead County were the Swainson hawk, *Buteo swainsoni*, the red-tailed hawk, *Buteo borealis*, the prairie falcon, *Falco mexicanus*, Richardson's merlin, *Falco richardsoni*, the American long-eared owl, *Asio wilsonianus*, the great-horned owl, *Bubo virginianus*, the burrowing owl, *Speotyto cunicularia*, the golden eagle, *Aquila chrysaetos*, the western magpie, *Pica pica hudsonia*, and the crow, *Corvus brachyrhynchos*.

Although these birds cannot be strictly grouped according to their food habits, they may be conveniently separated into two groups—first, predators, including eagles, hawks, and owls, that kill much of their prey, but will eat dead animals; and, second, scavengers, including crows and magpies, that feed largely on carrion, but may occasionally kill small birds and mammals. All the above-named birds are known to feed on rodents, but not all were examined for parasites or used in laboratory tests.

That they will feed on rodents dead or dying of plague is apparent. Plague infection was actually recovered from ground squirrels, *Citellus richardsoni*, upon which birds were feeding in the following 5 instances:

June 4, 1936, from each of two squirrels. Magpies were feeding on one, crows on the other.

June 9, 1936, from a squirrel being eaten by crows and from another squirrel found on a post in an old barn to which it had been carried by birds who had eaten all but the skin, skull, and leg bones.

June 26, 1936, from an eviscerated squirrel found on top of a fence post to which it had been carried by birds.

Data on the promptness of destruction of dead squirrels by birds in the epizootic area were secured by placing 10 freshly autopsied normal ground squirrels along a road at 200-foot intervals in the early afternoon. At the end of 1 hour 3 hawks (*Buteo* sp.) had fed on the baits and left, and 9 magpies were still feeding. Four squirrels had been entirely eaten and the other 6 eviscerated. Other fresh squirrel baits received the same prompt attention.

These observations are further proof that carcasses of squirrels are attacked immediately after death while they still may be highly infectious, and before the fleas or other ectoparasites may have entirely deserted them.

Transportation of rodent fleas by birds.—Scavenger birds seldom carry entire carcasses to their nests and are probably of slight importance in the transportation of fleas. Thirty-eight fledgling and adult magpies, 8 magpie nests, 16 fledgling and adult crows, and 4 crow nests were examined, but only one specimen of rodent flea was found (*Oropsylla idahoensis*).

On the other hand, even the smaller predatory birds bring comparatively large rodent carcasses to their nests and feeding perches. The fleas present on their prey when captured may be scattered along the route of flight or may leave the carcasses at the perches or nest. Many examinations of adults, fledglings in the nest, and nest materials of these birds have yielded some interesting records of rodent fleas. These are given in the accompanying table.

While the data in this table show that very few rodent fleas were found in the coarse twig nests of raptorial species that build high in trees or on rocky ledges, it must be remembered that nests of this sort do not offer favorable conditions for species of fleas that have become adapted to the underground nests and burrows of rodents. Therefore, while these records afford proof that birds of the sort concerned do carry rodent fleas, they likely offer a very unreliable index of the numbers of such fleas transported by them.

List of birds found harboring rodent fleas in their nests or as accidental parasites (All collections are from Beaverhead County, Mont.)

Bird host		Date	Rodent fleas present			
Species	Materials		Species	♂	♀	Genus or family of usual rodent host
Asio wilsonianus	Fledglings in nest	June 1937	*Oropsylla idahoensis*	1		Sciuridae.
Bubo virginianus	do	do	*Oropsylla idahoensis*	1		Do.
Bubo virginianus	Adult	July 1935	*Oropsylla idahoensis*		1	Do.
			Orchopeas sexdentatus		1	*Neotoma.*
Buteo sp.	Nest	June 1936	*Oropsylla idahoensis*	1	1	Sciuridae.
Buteo sp.	do	July 1937	*Oropsylla idahoensis*	1		Do.
Pica pica hudsonia	Adult	do	*Oropsylla idahoensis*	1		Do.
Speotyto cunicularia	Burrow and nest	June 1937	*Foxella ignotus*	27	28	*Thomomys.*
			Monopsyllus exilis	2	3	Cricetidae.
			Monopsyllus wagneri	11	20	Do.
			Neopsylla inopina	1		*Citellus.*
			Pulex irritans	1	1	(?).
			Thrassis pandorae	4	1	*Citellus.*

A marked contrast is shown by the record of the nest of the burrowing owl, *Speotyto cunicularia.* This nest, containing 5 half-grown fledglings, was examined near Dillon, Mont., in June 1937. The nest chamber was about 18 inches underground at the end of a 6-foot tunnel. There was no evidence of recent rodent occupancy, yet the nest debris yielded 109 live rodent fleas of 6 species, apparently parasites of rodents that had been carried to the nest for food. It is unlikely that these fleas survived from previous rodent occupancy of the burrow, since their hosts represent at least 3 genera and families

of rodents (see table), *Foxella ignotus* from *Thomomys* of the Geomyidae, *Neopsylla inopina* and *Thrassis pandorae* from *Citellus* of the Sciuridae, and *Monopsyllus exilis* and *M. wagneri* from Cricetidae. Several genera of Cricetidae, including *Peromyscus, Microtus,* and *Onychomys,* may be parasitized by *M. exilis* and *M. wagneri.*

In order to determine what mammals were being eaten by the owls inhabiting this burrow, casts collected from it, probably from both fledgling and adult birds, were sent for analysis to E. R. Kalmbach of the Food Habits Research Laboratory of the Biological Survey at Denver, Colo. The following-named mammals were represented: 30 Cricetidae and Heteromyidae, including 22 *Peromyscus,* 2 *Perognathus* and 6 undetermined mice; 3 Sciuridae, all of which were *Citellus;* and 1 Leporidae of undetermined genus. No remains of *Thomomys* were found in this collection, but casts from another owl burrow about 1 mile distant did contain the remains of *Thomomys,* as well as of *Peromyscus* and *Perognathus.*

The considerable number of fleas is attributed to the fact that the underground nest of this species of owl, which is the remodeled burrow of some small mammal, furnished favorable habitat conditions for rodent fleas and minimized their chances of escape.

Bent, in 1938 (*5*), quotes the following from the early observations of Major Bendire on the burrowing owl: "On one thing most observers agree, namely, that their burrows invariably swarm with fleas." However, no indication was given as to whether these were bird or mammal fleas.

It appears likely, then, that the previously presented flea record from the burrowing owl nest is a far better index of the extent to which rodent fleas are transported by raptorial birds than are the meager findings relating to birds of this sort whose nests do not afford suitable habitat conditions. There is no evident reason why carcasses transported by the latter birds should be any less heavily flea-infested than those transported by burrowing owls.

The host of two specimens of *Pulex irritans* found in the burrowing owl nest is uncertain. This flea has been found well established on *Cynomys ludovicianus* in Montana (Jellison and Kohls, 1936 (*6*)), but no prairie dogs were present locally.

Several arboreal nests of the American long-eared owl examined near Dillon, Mont., were found swarming with larvae and adults of *Ceratophyllus swansoni* Liu, a typical bird flea.

The literature on United States fleas furnishes only three other records of rodent fleas on raptorial birds. Baker, in 1904 (*7*), described *Megabothris asio* (Baker), a rodent flea, from a single ♀ collected on a screech owl, *Otus asio,* in Massachusetts and listed *Ctenophthalmus pseudagyrtes* from the same host, and Collins, in 1936

(*8*), described *Anomiopsyllus montanus*, a rodent flea, from a series collected on a great-horned owl, *Bubo virginianus*, in Montana.

EXPERIMENTAL STUDIES

Of the predatory and scavenger birds present in the plague-infected area it was possible to obtain fledglings of the great-horned owl, American long-eared owl, burrowing owl, Swainson hawk, magpie, and crow for experimental studies. Hawks and owls used in feeding tests had been kept in large cans in the laboratory for several days and accustomed to accepting pieces of meat from a pair of long forceps. Guinea pigs which died of plague produced by strains freshly isolated from ground squirrels were used in infective feeding tests. The infected meal consisted of a portion of a leg containing either the humerus or femur, which the birds accepted readily and swallowed entire, without contaminating the cans in which they were kept. Regurgitated casts were recovered from the sawdust floor of the cans. Dishes of chopped muscle, spleen, and liver of infected guinea pigs were usually given magpies and crows in the tests for the infectivity of feces. For collecting fecal material, birds were placed in clean battery jars until a sample was voided or a sample was taken directly from the cloaca with a large medicine dropper. Casts or feces from the birds following a meal on infectious tissue were tested by subcutaneous inoculation, by rubbing into abraded dermal areas, or by feeding to guinea pigs or white rats. Results were interpreted as positive only when experimental animals died, gross lesions typical of plague were found on necropsy, typical bipolar bacilli were present in tissue smears, and cultures of heart blood gave pure cultures of *Bacillus pestis*.

Infectivity of casts.—A great-horned owl was fed the thigh of a plague-infected guinea pig on June 13, 1937. The unbroken bone cleaned of muscle tissue was regurgitated by the next morning. Saline washings of the surface of the bone produced typical infection when injected subcutaneously into a guinea pig. Another guinea pig injected subcutaneously with a suspension of bone marrow also died of plague, but one inoculated by rubbing bone marrow into a scarified dermal area survived. Smears of the marrow showed partially destroyed tissue cells and some bacteria not typical of the plague bacillus. Culture of the bone marrow, however, yielded *B. pestis*.

This owl was re-fed on June 17 with a leg of a plague-infected guinea pig. The cast was recovered on the following day, but all bones had been broken and the marrow digested out. Nevertheless, washings of the casts were infectious when injected subcutaneously into a guinea pig.

Casts regurgitated on June 18 from another great-horned owl fed plague tissue June 17 also proved infectious.

Similar results were secured with American long-eared owls in each of three trials in which they were fed infected guinea-pig tissue and the subsequent casts tested by subcutaneous injection into guinea pigs.

Tests on casts from two Swainson hawks that had been fed the legs of a ground squirrel found dead of plague in nature were negative. Tests on the same birds using leg bones of plague-infected guinea pigs were positive.

Casts were usually regurgitated within 24 hours after the meal, but often were retained longer when the meal contained very little undigestible material. Although leg bones were intact when fed to the birds and were swallowed whole, they were usually broken up and the marrow was digested before being regurgitated.

These experiments indicate that plague-infected material may be transported short or long distances in the stomachs of raptorial birds and regurgitated in an infectious condition.

To what extent, if any, casts are utilized by plague-susceptible rodents in a manner that would permit them to acquire infection, if present, is problematical. As casts contain hair, bone, feathers, and at times fragments of ligaments and tendons, they may conceivably be a source of mineral or other food supply, or of nest materials for rodents. No positive evidence on this point was obtained from observations, literature, or correspondence with ornithologists.

INFECTIVITY OF FECES

The following-described experiments were conducted in an attempt to determine whether viable organisms were present in the feces of birds being fed plague-infected guinea pig tissue:

1. Four young crows were given a generous feed of plague-infected guinea pig tissue on June 13. Samples of feces were collected from each crow for 3 consecutive days, mixed with rolled oats, and fed daily to four guinea pigs. All remained normal.

2. Two young crows were placed in a tall animal can with two guinea pigs. The crows were fed once with plague-infected guinea pig tissue. The continual contamination of the guinea pig's food with fecal material in this way gave negative results.

3. On June 22, two young crows were fed spleens and livers of infected guinea pigs. Fecal samples were collected from both crows morning and afternoon on June 23 and morning only on June 24. Each sample was injected subcutaneously into separate guinea pigs. One guinea pig died of peritonitis, and spleen transfers were negative; the other five remained normal.

4. Plague tissue was fed to four young magpies on June 13. On June 14, fecal samples were collected from each and injected subcutaneously into four guinea pigs. All remained normal. On June 14, 15, and 16, fecal samples were collected and fed with oats to four other guinea pigs, all of which remained normal.

5. Four young magpies were placed in a coarse screen-bottomed cage over a box containing four guinea pigs. These birds were fed

June 24 and June 26 with plague-infected guinea-pig tissue. No attempt was made to prevent direct contamination of the guinea pigs' food with plague tissue. Continual fecal contamination of the guinea pigs' food produced no infection in the guinea pigs.

6. An American long-eared owl was fed entirely on plague-infected guinea-pig tissue from June 30 to July 5. Fecal samples collected on the first, second, and third days were rubbed into very extensive scarified dermal areas on three guinea pigs, all of which survived.

7. A young burrowing owl was fed plague-infected tissue on July 31 and August 5 and 6. Fecal samples collected on August 2, 3, 6, and 8 were injected subcutaneously into guinea pigs. The first two samples caused fatal peritonitis and the last two produced no illness.

In addition to these experimental tests, numerous samples of feces from magpies, crows, and hawks in nature were tested by feeding and subcutaneous injection. All were negative.

The tests by feeding and subcutaneous injection, just described, gave no evidence that the feces of birds feeding on plague-infected tissues of animals are infectious.

SUMMARY

Field and laboratory observations bearing on the possible relationship of flesh-eating birds to the epidemiology of sylvatic plague have been made in a plague epizootic area in southwestern Montana. Predatory species, especially, transport flea-infested rodents and serve as accidental hosts of rodent fleas. The abundance and variety of rodent fleas found in the nest of a burrowing owl suggest that this species may prove of particular interest. Casts from predatory birds fed plague-infected guinea pig tissue were consistently infectious. Infection was not demonstrated in two instances in which portions of a plague-infected ground squirrel found dead in nature were used for the infective feedings. Tests on the infectivity of feces of birds being fed plague tissue were consistently negative, but were restricted to a few species.

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POLIOMYELITIS IN SOUTH CAROLINA

The following report of poliomyelitis in Charleston, S. C., and in the State outside of Charleston, is based on information furnished by Medical Director J. P. Leake, of the United States Public Health Service.

Up to May 5, 1939, there have been reported since the first week in November 1938, in the city of Charleston, S. C., 31 paralytic cases of poliomyelitis, giving a rate of 50 per 100,000 population for the city for the 27 weeks. The numbers of cases each week by date of onset are as follows: 1, 1, 0, 1, 2, 1, 0, 2, 0, 0, 1, 1, 0, 1, 1, 0, 0, 0, 1, 1, 3, 2, 2, 4, 2, 3, 1. In the county outside of Charleston, since the third week in January, 9 paralytic cases have been reported, giving a rate of 24 per 100,000 for the 15 weeks. The numbers of cases in the county outside of Charleston each week by date of onset are as follows: 1, 0, 0, 0, 0, 0, 2, 0, 0, 0, 1, 1, 1, 2, 1. In addition, 4 non-paralytic cases have been reported in the city and 3 in the county outside of the city. There have been 5 deaths.

In South Carolina, outside of Charleston, no cases of poliomyelitis were reported from October 8 to November 26, 1938. The next week 1 case was reported from Greenville County (in the extreme northwestern part of the State), where 2 cases had been reported in the week ended August 13. In the week ended December 17, 2 cases were reported in Oconee County (separated from Greenville by Pickens County), where 1 case had been reported during the week ended July 30. Subsequently, in the last week of the year, 1 case was reported in Pickens County. In the week ended January 21, 1 case was reported in Florence County (in east central part of the State), and another in the week ended February 14, when 2 cases also were reported in Marlboro County (just to the north of Florence County). In the week ended March 18, 1 further case was reported in Marlboro County, 1 in Hampton County (separated from Charleston County by Colleton County), and 2 in Berkeley County (adjoining Charleston County at the north). In the week ended April 1, 1 case was reported in Jasper County (bordering Hampton County on the south), and in the week ended May 6, 2 cases were reported in Orangeburg County (bordering Berkeley County on the northwest).

PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES

March 26 to April 22, 1939

The accompanying table summarizes the prevalence of eight important communicable diseases, based on weekly telegraphic reports from State health departments. The reports from each State are

published in the Public Health Reports under the section "Prevalence of disease." The table gives the number of cases of these diseases for the 4-week period ending April 22, the number reported for the corresponding period in 1938, and the median number for the years 1934–38.

DISEASES ABOVE MEDIAN PREVALENCE

Influenza.—The recent outbreak of influenza has largely abated in most regions of the country, although the number of cases reported for the 4 weeks March 26 to April 22 (34,334) is still about 7 times the number reported for the corresponding period in 1938 and more than 4½ times the 1934–38 average incidence for this period. There was no epidemic of this disease in 1938, and in preceding years the peak incidence has usually been reached during February, so that by the end of the period corresponding to the one under consideration the wave has flattened down to about the normal seasonal expectancy. This year's rise did not become perceptible until the month of February and the highest peak was not reached until about the middle of March. While the numbers of cases then began to decrease,

Number of reported cases of 8 communicable diseases in the United States during the 4-week period Mar. 26–Apr. 22, 1939, the number for the corresponding period in 1938, and the median number of cases reported for the corresponding period 1934–38[1]

Division	Current period	1938	5-year median	Current period	1938	5-year median	Current period	1938	5-year median	Current period	1938	5-year median
	Diphtheria			Influenza[2]			Measles[3]			Meningococcus meningitis		
United States[1]	1,322	1,601	1,808	34,334	4,761	7,139	59,402	147,707	132,389	176	275	659
New England	24	45	47	340	58	58	7,754	2,753	8,997	8	15	15
Middle Atlantic	229	336	373	147	79	124	7,321	42,909	26,117	48	52	104
East North Central	292	317	348	2,212	183	724	4,456	59,327	23,458	28	35	83
West North Central	122	111	207	1,142	329	555	5,220	7,498	7,498	9	19	35
South Atlantic	225	265	294	11,129	954	2,447	9,332	18,828	7,725	27	54	108
East South Central	103	117	117	6,809	455	871	1,021	6,555	4,513	24	62	62
West South Central	168	203	279	9,278	2,013	2,142	3,459	3,305	3,305	14	19	41
Mountain	82	64	63	2,045	314	436	3,930	3,777	3,777	6	9	11
Pacific	77	143	135	1,232	376	493	16,909	2,755	4,283	12	10	23
	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
United States[1]	34	72	77	18,008	22,199	29,478	1,267	1,882	878	434	457	520
New England	0	1	2	1,315	2,406	1,829	0	0	0	24	10	20
Middle Atlantic	6	11	8	4,574	6,845	8,162	4	0	0	64	63	59
East North Central	9	9	10	7,335	6,341	9,679	355	508	154	38	61	76
West North Central	1	6	6	1,736	2,823	2,823	451	558	558	19	31	20
South Atlantic	9	8	9	718	946	965	6	6	9	83	71	84
East South Central	3	19	7	562	409	415	46	63	18	42	58	56
West South Central	4	13	9	336	671	619	236	196	146	120	117	117
Mountain	1	1	2	426	619	677	55	144	91	14	15	17
Pacific	1	4	18	1,006	1,139	1,139	114	407	88	30	31	31

[1] 48 States. Nevada is excluded and the District of Columbia is counted as a State in these reports.
[2] 44 States and New York City.
[3] 46 States. Mississippi and Georgia are not included.

the incidence has made a rather unfavorable comparison with that in 1938, as well as with the average incidence for the corresponding period in preceding years.

Smallpox.—For the 4 weeks ended April 22 there were 1,267 cases of smallpox reported as compared with 1,882, 1,443, and 878 for the corresponding period in 1938, 1937, and 1936, respectively. The current incidence represents a decrease from the figure for this period in 1938 of about 65 percent, but it is about 50 percent in excess of the average seasonal incidence (878 cases). Five States reported more than one-half of the total number of cases, viz, Indiana (173 cases), Iowa (163), Oklahoma (142), Missouri (127), and Texas (87 cases). The four cases appearing in the Middle Atlantic region (all in New York) were the first cases reported from the North Atlantic regions since August 1937.

DISEASES BELOW MEDIAN PREVALENCE

Diphtheria.—The reports for recent weeks continue to keep 1939 as the year of the lowest diphtheria incidence on record. The reported number of cases for the 4 weeks ending April 22 was 1,322, as compared with approximately 1,600 cases for the corresponding period in 1938, and an average of approximately 1,800 cases in the years 1934–38, inclusive.

Poliomyelitis.—The incidence of poliomyelitis reported for the current period is the lowest recorded for this period in the 11 years for which comparable data are available. The total number of cases (34) was less than one-half of the 1934–38 average incidence for the corresponding period.

Scarlet fever.—The scarlet fever incidence is also the lowest in recent years. For the 4 weeks ended April 22 the number of cases totaled approximately 18,000, as compared with 22,199 cases in 1938, 29,478 in 1937, and approximately 31,000 cases in each of the years 1936 and 1935. The East South Central region reported a few more cases than might normally be expected during this period, but in all other regions the incidence was relatively low.

Typhoid fever.—The typhoid fever incidence stood at the lowest level in recent years in relation to the seasonal expectancy. There were 434 cases reported for the current period, as compared with 457 cases for the corresponding period in 1938, and with an average of 520 cases for the years 1934–38, inclusive. The situation is quite favorable in all sections of the country.

Meningococcus meningitis.—The incidence of 176 reported cases of meningococcus meningitis represents the lowest level for this period in recent years. In 1938 there were 275 cases reported during the corresponding period and the 1934–38 average incidence for the period was 659 cases. The current incidence was less than 60 per-

cent of the average number of cases (300) for other recent years of low incidence of this disease (1933–34, 1938).

Measles.—While measles has been quite prevalent in some sections of the country, the total number of cases (59,402) reported for the 4 weeks ended April 22 was only about 40 percent of the number reported for the corresponding period in 1938, and less than 45 percent of the 1934–38 average incidence for this period. The greatest excess over the average seasonal incidence was reported from the Pacific region, with minor increases in the South Atlantic, West South Central, and Mountain regions. Since the 5-year median period contains 3 years in which the measles incidence was unusually high, the current incidence occupies a relatively low position, but the same is also true when comparison is made with the experience for the corresponding period in more normal "measles" years (1929–33, 1936, 1937, with an average of approximately 62,000 cases).

MORTALITY, ALL CAUSES

The average mortality rate for large cities during the 4 weeks ended April 22, based on data received from the Bureau of the Census, was 12.2 per 1,000 population (annual basis). The rate was slightly higher than the rate (11.8) for the corresponding period in 1938, but it was a little below the 1934–38 average rate (12.4) for this period.

DEATHS DURING WEEK ENDED APRIL 22, 1939

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Apr. 22, 1939	Corresponding week, 1938
Data from 88 large cities of the United States:		
Total deaths	8,966	[1] 8,625
Average for 3 prior years	[1] 9,004	
Total deaths, first 16 weeks of year	149,961	142,364
Deaths under 1 year of age	521	546
Average for 3 prior years	[1] 570	
Deaths under 1 year of age, first 16 weeks of year	8,757	8,726
Data from industrial insurance companies:		
Policies in force	67,479,316	69,642,337
Number of death claims	17,925	13,910
Death claims per 1,000 policies in force, annual rate	13.9	10.4
Death claims per 1,000 policies, first 16 weeks of year, annual rate	11.7	10.0

[1] Data for 86 cities.

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

In these and the following tables, a zero (0) indicates a positive report and has the same significance as any other figure, while leaders (----) represent no report, with the implication that cases or deaths may have occurred but were not reported to the State health officer.

Cases of certain diseases reported by telegraph by State health officers for the week ended Apr. 29, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median

Division and State	Diphtheria				Influenza				Measles			
	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median
NEW ENG.												
Maine	6	1	0	0	597	99	6	3	344	57	166	72
New Hampshire	0	0	0	0	----	----	----	----	314	31	13	44
Vermont	0	0	7	0	----	----	----	----	1,046	78	187	60
Massachusetts	5	4	4	5	----	----	----	----	1,209	1,028	386	667
Rhode Island	0	0	0	0	----	----	----	----	198	26	1	72
Connecticut	0	0	7	2	9	3	3	4	2,994	1,009	49	109
MID. ATL.												
New York	7	17	30	47	[1] 17	[1] 25	[1] 15	[1] 13	682	1,705	4,234	2,927
New Jersey	14	12	20	16	6	5	7	17	82	69	1,211	1,211
Pennsylvania	19	38	33	34	----	----	----	----	65	128	3,009	3,009
E. NO. CEN.												
Ohio	15	20	10	22	----	----	----	36	25	32	2,469	1,357
Indiana	13	9	19	9	37	25	17	17	34	23	979	403
Illinois	28	43	35	35	39	60	18	41	24	36	2,455	1,900
Michigan [2]	16	15	8	11	38	36	----	2	444	420	3,930	258
Wisconsin	0	0	3	2	202	115	41	39	1,344	765	3,250	1,736
W. NO. CEN.												
Minnesota	8	4	2	3	12	6	2	----	894	461	212	231
Iowa	14	7	2	7	14	7	----	6	379	187	268	174
Missouri	3	2	11	17	1	1	23	61	21	16	420	420
North Dakota	7	1	0	0	190	26	14	7	329	45	85	40
South Dakota	8	1	0	0	68	9	----	----	2,412	321	----	5
Nebraska	23	6	0	5	84	22	----	----	2,374	622	137	137
Kansas	34	12	4	7	50	18	6	12	265	95	605	605
SO. ATL.												
Delaware	0	0	4	0	----	----	----	----	----	----	25	25
Maryland [2]	6	2	4	4	56	18	4	9	1,073	348	107	330
Dist. of Col	32	4	5	9	----	----	1	1	2,361	292	20	75
Virginia	37	20	11	12	491	262	----	----	1,230	656	423	584
West Virginia	19	7	10	11	269	100	20	50	27	10	517	123
North Carolina [2]	10	7	5	11	25	17	14	28	1,046	716	2,222	321
South Carolina	25	9	5	5	1,497	548	125	264	46	17	223	120
Georgia [2]	10	6	6	6	571	344	----	----	219	132	248	----
Florida [2]	15	5	4	4	24	8	1	1	323	107	259	74

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Apr. 29, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median—Continued

Division and State	Diphtheria				Influenza				Measles			
	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median
E. SO. CEN.												
Kentucky	10	6	20	10	31	18	5	16	33	19	405	468
Tennessee [4]	5	3	3	4	235	133	30	37	106	60	296	90
Alabama [3]	14	8	10	13	959	545	39	58	313	178	619	541
Mississippi [2]	13	5	9	8	------	------	------	------	------	------	------	------
W. SO. CEN.												
Arkansas	15	6	3	7	389	157	51	51	327	132	331	42
Louisiana	19	8	12	15	51	21	11	11	341	141	17	49
Oklahoma	4	2	1	8	215	107	53	53	374	186	127	115
Texas [3]	16	19	31	40	627	757	306	306	336	406	249	249
MOUNTAIN												
Montana [4]	19	2	0	2	131	14	------	21	1,620	173	49	49
Idaho [4]	10	1	0	0	71	7	7	1	1,357	133	29	29
Wyoming [4]	44	2	2	1	------	------	------	------	3,338	153	42	42
Colorado	43	9	9	5	67	14	------	------	2,263	470	356	356
New Mexico	12	1	22	4	25	2	------	1	346	28	84	74
Arizona	12	1	3	2	847	69	36	31	429	35	54	54
Utah [2]	20	2	0	0	129	13	------	------	924	93	334	23
PACIFIC												
Washington	3	1	1	1	------	------	------	------	3,022	980	39	167
Oregon [4]	10	2	1	2	219	44	27	28	373	75	52	86
California	21	25	30	29	66	81	42	42	1,963	2,393	812	812
Total	14	355	406	442	176	3,736	924	1,292	610	15,087	32,005	31,666
17 weeks	18	7,885	9,308	9,759	384	138,406	39,027	97,129	540	226,989	555,978	440,210

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median
NEW ENG.												
Maine	6	1	0	0	0	0	0	0	72	12	8	9
New Hampshire	0	0	0	0	0	0	0	0	0	0	6	7
Vermont	0	0	0	0	0	0	0	0	94	7	14	7
Massachusetts	1.2	1	2	3	1.2	1	0	0	218	185	332	246
Rhode Island	0	0	0	0	0	0	0	0	115	15	19	26
Connecticut	0	0	0	1	0	0	1	0	276	93	107	76
MID. ATL.												
New York	1.6	4	8	13	0	0	0	0	215	538	675	938
New Jersey	0	0	1	3	1.2	1	0	0	281	236	126	210
Pennsylvania	3	6	2	5	0.5	1	0	1	188	370	270	746
E. NO. CEN.												
Ohio	0	0	3	8	0	0	1	1	399	519	340	442
Indiana	3	2	2	2	0	0	0	0	257	173	109	140
Illinois	1.3	2	1	8	0.7	1	2	1	317	483	487	725
Michigan [3]	2.1	2	4	3	1.1	1	0	0	461	436	412	412
Wisconsin	0	0	1	2	1.8	1	2	0	323	184	185	289
W. NO. CEN.												
Minnesota	0	0	1	0	0	0	0	0	171	88	182	182
Iowa	0	0	0	1	0	0	0	0	235	116	166	166
Missouri	3	2	3	4	1.3	1	0	0	94	73	161	161
North Dakota	0	0	0	0	0	0	0	0	88	12	14	30
South Dakota	0	0	1	0	0	0	0	0	113	15	15	19
Nebraska	0	0	0	1	0	0	0	0	206	54	39	44
Kansas	0	0	0	1	0	0	0	0	190	68	105	105

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Apr. 29, 1939, rates per 100,000 population (annual basis), and comparison with corresponding week of 1938 and 5-year median—Continued

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median
SO. ATL.												
Delaware	0	0	0	0	0	0	0	0	118	6	14	7
Maryland [2]	3	1	0	4	0	0	0	0	148	48	75	75
Dist. of Col	16	2	0	1	0	0	0	0	146	18	18	18
Virginia	1.9	1	0	5	0	0	1	0	56	30	17	28
West Virginia	5	2	4	4	0	0	1	0	105	39	26	55
North Carolina [2]	1.5	1	2	2	0	0	0	0	32	22	23	28
South Carolina	0	0	1	1	22	8	3	0	5	2	1	2
Georgia [2]	0	0	1	1	5	3	3	0	8	5	6	6
Florida [2]	0	0	3	0	0	0	1	0	15	5	6	5
E. SO. CEN.												
Kentucky	1.7	1	2	10	0	0	1	0	73	42	39	40
Tennessee [4]	1.8	1	2	6	1.8	1	0	0	93	53	28	24
Alabama [2]	1.8	1	6	6	5	3	1	1	14	8	6	5
Mississippi [2]	0	0	0	0	0	0	0	0	0	0	5	3
W. SO. CEN.												
Arkansas	2.5	1	1	1	0	0	1	0	15	6	6	7
Louisiana	10	4	0	0	2.4	1	1	1	48	20	9	11
Oklahoma	2	1	0	1	0	0	0	0	30	15	24	24
Texas [3]	1.7	2	3	3	0	0	0	0	31	37	92	82
MOUNTAIN												
Montana [4]	0	0	0	1	0	0	0	0	159	17	15	18
Idaho [4]	10	1	0	0	0	0	0	0	41	4	9	9
Wyoming [4]	0	0	0	0	0	0	0	0	109	5	3	9
Colorado	0	0	0	0	0	0	0	0	164	34	58	62
New Mexico	0	0	0	0	0	0	0	0	272	22	11	24
Arizona	0	0	0	1	12	1	0	0	184	15	8	23
Utah [2]	10	1	0	0	0	0	0	0	258	26	32	32
PACIFIC												
Washington	0	0	0	0	0	0	1	0	108	35	35	35
Oregon [4]	0	0	2	1	0	0	1	0	129	26	32	32
California	0	0	1	4	3	4	0	3	139	169	207	207
Total	1.6	40	57	149	1.1	28	21	20	174	4,386	4,577	6,904
17 weeks	2	854	1,416	2,312	0.7	292	347	348	202	86,301	100,393	117,155

Division and State	Smallpox				Typhoid and paratyphoid fever				Whooping cough		
	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases
NEW ENG.											
Maine	0	0	0	0	6	1	0	0	145	24	40
New Hampshire	0	0	0	0	10	1	1	0	41	4	0
Vermont	0	0	0	0	0	0	0	0	308	23	36
Massachusetts	0	0	0	0	4	3	2	2	259	220	120
Rhode Island	0	0	0	0	15	2	0	0	710	93	11
Connecticut	0	0	0	0	0	0	1	1	208	70	69
MID. ATL.											
New York	0	0	0	0	3	8	5	9	195	486	535
New Jersey	0	0	0	0	1	1	2	3	331	278	211
Pennsylvania	0	0	0	0	5	10	3	9	180	354	165

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Apr. 29, 1939, rates per 100,000 population (annual basis), and comparison with corresopnding week of 1938 and 5-year median—Continued

Division and State	Smallpox				Typhoid and paratyphoid fever				Whooping cough		
	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases	1934–38, median	Apr. 29, 1939, rate	Apr. 29, 1939, cases	Apr. 30, 1938, cases
E. NO. CEN.											
Ohio	21	27	8	0	2	3	6	6	176	229	287
Indiana	70	47	87	3	3	2	9	1	89	60	28
Illinois	16	25	19	3	2	3	5	4	132	202	126
Michigan [2]	14	13	5	3	3	3	6	3	190	180	336
Wisconsin	0	0	18	18	4	2	3	1	299	170	255
W. NO. CEN.											
Minnesota	33	17	20	5	0	0	0	0	85	44	44
Iowa	144	71	36	36	2	1	2	2	30	15	28
Missouri	23	18	45	15	3	2	4	4	13	10	20
North Dakota	51	7	8	8	0	0	1	1	37	5	18
South Dakota	53	7	8	5	0	0	0	0	30	4	20
Nebraska	31	8	19	19	0	0	0	0	61	16	17
Kansas	3	1	13	13	0	0	1	1	59	21	183
SO. ATL.											
Delaware	0	0	0	0	0	0	0	0	118	6	11
Maryland [2]	0	0	0	0	0	0	1	1	77	25	61
Dist. of Col	0	0	0	0	0	0	0	0	267	33	13
Virginia	0	0	0	0	0	0	6	6	148	79	81
West Virginia	0	0	1	0	3	1	8	4	48	18	50
North Carolina [3]	0	0	1	1	7	5	2	2	428	293	437
South Carolina	0	0	0	0	16	6	5	4	229	84	107
Georgia [3]	0	0	1	1	2	1	10	7	43	26	28
Florida [3]	0	0	2	0	0	0	5	2	112	37	24
E. SO. CEN.											
Kentucky	2	1	12	0	3	2	3	6	24	14	139
Tennessee [4]	11	6	3	1	0	0	2	2	63	36	42
Alabama [3]	5	3	23	2	11	6	2	4	69	39	62
Mississippi [3]	0	0	4	0	10	4	5	3	-------	-------	-------
W. SO. CEN.											
Arkansas	27	11	4	2	10	4	5	1	37	15	43
Louisiana	0	0	1	1	31	13	16	15	56	23	1
Oklahoma	87	43	20	3	8	4	9	4	0	0	99
Texas [3]	11	13	4	4	7	8	8	16	121	146	327
MOUNTAIN											
Montana [4]	37	4	3	7	0	0	2	1	37	4	34
Idaho [4]	82	8	16	1	51	5	1	0	41	4	10
Wyoming [4]	0	0	2	2	0	0	0	0	22	1	23
Colorado	0	0	3	2	0	0	1	0	318	66	47
New Mexico	49	4	0	0	0	0	1	2	519	42	15
Arizona	49	4	6	0	86	7	1	1	184	15	65
Utah [3]	10	1	1	0	0	0	0	0	566	57	60
PACIFIC											
Washington	3	1	27	15	6	2	0	2	114	37	196
Oregon [4]	30	6	16	16	5	1	0	0	60	12	18
California	14	17	34	4	1	1	7	7	178	217	643
Total	14	363	465	235	4	112	151	151	155	3,837	5,185
17 weeks	14	6,150	9,053	3,721	5	1,951	2,046	2,046	164	69,070	71,886

[1] New York City only.
[2] Period ended earlier than Saturday.
[3] Typhus fever, week ended Apr. 29, 1939, 29 cases as follows: North Carolina, 3; Georgia, 11; Florida, 2; Alabama, 2; Texas, 11.
[4] Rocky Mountain spotted fever, week ended Apr. 29, 1939, 11 cases as follows: Tennessee, 1; Montana, 1; Idaho, 3; Wyoming, 2; Oregon, 4.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

State	Meningitis, meningococcus-	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid and paratyphoid fever
March 1939										
Arizona	9	28	1,903	----	142	11	2	44	33	4
Colorado	1	50	446	----	1,078	----	0	173	29	5
District of Columbia	3	28	19	----	261	----	0	78	0	2
Georgia	4	29	1,985	98	816	41	0	60	2	12
Hawaii Territory	0	9	7	----	9	----	0	2	0	5
Idaho	4	1	95	----	513	----	1	86	30	5
Kansas	2	18	499	----	147	----	0	541	20	2
Louisiana	6	60	193	10	731	2	0	41	5	117
Montana	0	4	1,033	----	1,441	1	0	101	8	1
Nevada	0	0	14	----	1,136	----	0	5	0	0
New York	16	89	----	5	6,627	----	1	3,140	3	26
Ohio	4	101	1,363	----	111	1	2	2,182	102	8
Oklahoma	0	28	1,882	30	809	14	2	183	182	6
Oregon	1	9	544	----	199	----	1	210	64	4
Utah	0	4	413	----	524	----	0	101	1	0
Virginia	15	61	6,798	1	1,564	11	0	131	0	18
Washington	2	6	43	----	2,590	----	1	224	12	2

March 1939

	Cases
Botulism:	
Washington	16
Chickenpox:	
Arizona	118
Colorado	409
District of Columbia	52
Georgia	273
Hawaii Territory	215
Idaho	184
Kansas	618
Louisiana	83
Montana	206
Nevada	9
New York	2,777
Ohio	2,430
Oklahoma	115
Oregon	292
Utah	420
Virginia	418
Washington	1,004
Conjunctivitis:	
Georgia	6
Hawaii Territory	29
Idaho	5
Washington	2
Dengue:	
Georgia	1
Diarrhea and enteritis:	
Ohio (under 2 years)	6
Washington (under 2 years)	3
Washington (over 2 years)	5
Dysentery:	
Arizona (bacillary)	48
Georgia (amoebic)	6
Georgia (bacillary)	3
Hawaii Territory (amoebic)	2
Hawaii Territory (bacillary)	1
Louisiana (amoebic)	3
Louisiana (bacillary)	1
New York (amoebic)	5
New York (bacillary)	36
Ohio (bacillary)	1
Oklahoma (bacillary)	3
Oregon (amoebic)	3
Virginia (bacillary)	63

March 1939—Continued

	Cases
Encephalitis, epidemic or lethargic:	
Colorado	1
Kansas	3
Montana	1
New York	7
Ohio	2
Oklahoma	1
Oregon	2
Washington	1
German measles:	
Arizona	6
Idaho	3
Kansas	7
Montana	3
New York	146
Ohio	23
Utah	11
Washington	17
Hookworm disease:	
Georgia	1,058
Hawaii Territory	2
Louisiana	74
Impetigo contagiosa:	
Hawaii Territory	19
Kansas	18
Montana	6
Oregon	61
Lead poisoning:	
Ohio	5
Leprosy:	
Hawaii Territory	2
Louisiana	3
Mumps:	
Arizona	93
Colorado	73
Georgia	275
Hawaii Territory	361
Idaho	79
Kansas	1,793
Louisiana	13
Montana	48
Nevada	52
Ohio	2,480
Oklahoma	47
Oregon	261
Utah	1,084
Virginia	445
Washington	463

March 1939—Continued

	Cases
Ophthalmia neonatorum:	
New York	5
Ohio	58
Psittacosis:	
Georgia	1
Puerperal septicemia:	
Georgia	3
Ohio	3
Rabies in animals:	
Louisiana	19
New York	[1] 7
Oregon	3
Washington	34
Rocky Mountain spotted fever:	
Idaho	1
Montana	2
Scabies:	
Kansas	17
Montana	1
Oregon	39
Septic sore throat:	
Arizona	1
Colorado	13
Georgia	54
Idaho	5
Kansas	27
Louisiana	2
Montana	10
New York	181
Ohio	23
Oklahoma	68
Oregon	15
Utah	1
Virginia	148
Washington	17
Tetanus:	
Hawaii Territory	2
Louisiana	1
New York	2
Virginia	2
Trachoma:	
Arizona	30
Hawaii Territory	4
Idaho	2
Louisiana	1
Montana	1
Virginia	1

[1] Exclusive of New York City.

Summary of monthly reports from States—Continued

March 1939—Continued

	Cases
Trichinosis:	
New York	18
Tularaemia:	
Georgia	28
Louisiana	13
Montana	2
New York	1
Ohio	4
Oklahoma	8
Utah	1
Typhus fever:	
Georgia	18
Hawaii Territory	4
Louisiana	8
Undulant fever:	
Arizona	1
Colorado	5

March 1939—Continued

	Cases
Undulant fever—Con.	
District of Columbia	1
Georgia	8
Kansas	9
Louisiana	3
New York	21
Ohio	4
Oklahoma	53
Oregon	1
Virginia	2
Washington	8
Vincent's infection:	
Kansas	20
New York	121
Oklahoma	5
Oregon	16

March 1939—Continued

	Cases
Whooping cough:	
Arizona	154
Colorado	326
District of Columbia	133
Georgia	196
Hawaii Territory	127
Idaho	10
Kansas	67
Louisiana	54
Montana	23
New York	2,435
Ohio	719
Oklahoma	10
Oregon	50
Utah	157
Virginia	308
Washington	99

PLAGUE INFECTION IN FLEAS FROM GROUND SQUIRRELS IN LINCOLN AND ADAMS COUNTIES, WASH.

Under date of April 22, 1939, Senior Surgeon C. R. Eskey reported plague infection proved in a pool of 54 fleas collected from 9 ground squirrels, *C. townsendi*, shot in Lincoln County April 13, 13 miles northwest of Ritzville, and under date of April 29, he reported plague infection proved in a pool of 103 fleas collected from 22 ground squirrels, *C. townsendi*, shot in Adams County March 29, 12 miles north of Ritzville.

WEEKLY REPORTS FROM CITIES

City reports for week ended Apr. 22, 1939

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table.

State and city	Diphtheria cases	Influenza cases	Influenza deaths	Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
Data for 90 cities:											
5-year average	163	186	62	*7,817	783	2,415	22	413	23	1,439	----
Current week [1]	86	325	71	4,610	547	1,428	16	407	22	1,139	----
Maine:											
Portland	1	6	1	0	6	2	0	0	0	16	25
New Hampshire:											
Concord	0	----	0	0	1	0	0	0	0	0	10
Manchester	0	----	0	0	0	0	0	0	0	0	5
Nashua	0	----	0	0	4	1	0	0	0	0	12
Vermont:											
Barre	0	----	0	0	0	0	0	0	0	2	4
Burlington	0	----	0	1	0	0	0	0	0	1	10
Rutland	0	----	0	0	0	0	0	0	0	0	5
Massachusetts:											
Boston	0	----	1	140	20	56	0	13	0	25	254
Fall River	0	----	0	0	2	0	0	0	0	0	23
Springfield	0	----	0	55	1	1	0	1	0	2	49
Worcester	0	----	0	2	7	17	0	1	0	29	66
Rhode Island:											
Pawtucket	0	----	0	9	0	0	0	0	0	1	17
Providence	0	47	0	33	8	13	0	1	0	67	56
Connecticut:											
Bridgeport	0	8	2	4	2	3	0	1	0	0	34
Hartford	0	----	0	90	4	10	0	2	0	16	43
New Haven	0	1	0	309	3	7	0	2	0	16	58
New York:											
Buffalo	0	----	0	212	13	32	0	8	1	31	138
New York	16	28	8	137	104	232	0	80	6	91	1,574
Rochester	0	----	0	144	3	18	0	0	0	14	64
Syracuse	0	----	0	243	7		0	0	0	39	52

[1] Figures for Boise, Idaho, estimated; report not received.

City reports for week ended Apr. 22, 1939—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
New Jersey:											
Camden	5		0	0	2	7	0	0	0	0	37
Newark	1	1	0	4	2	39	0	7	0	53	120
Trenton	1		0	1	1	6	0	0	0	4	36
Pennsylvania:											
Philadelphia	1	7	5	31	24	57	0	30	0	71	531
Pittsburgh	3	1	1	2	8	31	0	6	0	37	164
Reading	1		2	3	3	2	0	1	0	0	35
Scranton	0			0		8	0		0	8	
Ohio:											
Cincinnati	5		2	0	5	31	0	6	0	0	146
Cleveland	0	33	2	3	21	67	0	19	1	66	208
Columbus	2	2	2	1	4	4	0	3	0	6	94
Toledo	0	5	2	6	6	6	2	2	0	14	85
Indiana:											
Anderson	0		0	0	4	0	1	0	0	0	10
Fort Wayne	0		0	0	5	5	0	0	0	0	35
Indianapolis	2		4	2	16	47	3	4	0	44	134
Muncie	0		0	1	5	2	0	0	0	0	17
South Bend	0		1	0	0	1	0	0	0	5	19
Terre Haute	0		1	1	2	2	0	0	0	0	25
Illinois:											
Alton	0		0	0	0	0	0	0	0	0	12
Chicago	9	2	7	12	32	236	0	42	0	83	765
Elgin	0		2	0	1	5	0	0	0	3	12
Moline	0		0	1	1	1	0	0	0	1	10
Springfield	0		0	1	2	3	0	1	0	4	23
Michigan:											
Detroit	2		0	9	18	94	0	24	0	75	306
Flint	0		3	49	8	28	0	0	0	0	36
Grand Rapids	0		0	3	3	28	0	0	0	2	33
Wisconsin:											
Kenosha	0		0	0	1	3	0	0	0	10	10
Madison	0		0	38	0	3	0	0	0	10	11
Milwaukee	0		0	3	8	51	0	2	0	45	118
Racine	0		0	1	1	13	0	1	0	2	17
Superior	0		0	2	0	0	0	0	0	0	9
Minnesota:											
Duluth	0		0	4	1	10	0	1	0	0	17
Minneapolis	0		1	212	8	9	6	1	0	29	98
St. Paul	0		0	84	12	20	0	0	0	15	56
Iowa:											
Cedar Rapids	0			1		2	0		0	3	
Davenport	1			0		4	9		0	0	
Des Moines	0		0	2	0	28	4	0	0	1	41
Sioux City	0			5		0	0		0	2	
Waterloo	3			1		22	0		0	8	
Missouri:											
Kansas City	0		2	4	10	8	1	7	0	0	106
St. Joseph	0		0	0	0	2	2	1	0	2	15
St. Louis	0		4	2	10	35	1	4	1	7	219
North Dakota:											
Fargo	0		0	1	1	0	0	0	0	0	5
Grand Forks	0			0		0	0		0	0	
Minot	0		0	1	0	1	0	0	0	0	10
South Dakota:											
Aberdeen	0			85		0	0		0	0	
Sioux Falls	0			0		8	0		0	0	
Nebraska:											
Lincoln	1			108		3	0		0	7	
Omaha	0		0	5	4	2	1	3	0	1	56
Kansas:											
Lawrence	0	4	0	0	0	0	0	0	0	2	3
Topeka	1		0	0	4	2	1	0	0	1	22
Wichita	0		0	2	3	3	0	1	0	3	30
Delaware:											
Wilmington	0		0	0	3	2	0	0	0	2	34
Maryland:											
Baltimore	0	10	3	346	19	20	0	12	1	15	224
Cumberland	0		0	0	0	2	0	0	0	0	17
Frederick	0		0	0	1	0	0	0	0	0	6
Dist. of Col.:											
Washington	2	7	3	357	11	15	0	14	0	29	161
Virginia:											
Lynchburg	1		0	102	0	3	0	0	0	8	6
Norfolk	1	6	0	19	1	1	0	0	0	0	17
Richmond	1		1	213	5	0	0	2	0	0	49
Roanoke	0		0	0	0	2	0	0	0	0	16

City reports for week ended Apr. 22, 1939—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
West Virginia:											
Charleston	2	3	0	0	2	0	0	0	0	0	10
Huntington	0	---	---	0	---	0	0	---	0	0	---
Wheeling	0	---	0	0	3	1	0	0	0	16	19
North Carolina:											
Gastonia	0	---	---	0	---	0	0	---	0	0	---
Raleigh	0	---	0	2	2	0	0	1	0	3	18
Wilmington	0	---	0	2	1	0	0	0	2	2	4
Winston-Salem	1	---	0	45	0	1	0	0	0	0	11
South Carolina:											
Charleston	0	37	0	0	1	2	0	0	0	4	24
Florence	0	---	0	1	0	1	0	0	0	0	14
Greenville	0	---	0	0	0	0	0	0	0	1	10
Georgia:											
Atlanta	0	58	4	1	2	4	0	8	0	2	90
Brunswick	0	---	0	7	0	0	0	0	0	0	4
Savannah	0	17	1	1	1	0	0	1	0	7	29
Florida:											
Miami	0	6	0	0	2	0	0	0	0	4	47
Tampa	0	1	1	124	0	2	0	0	1	1	22
Kentucky:											
Ashland	0	6	0	0	1	0	0	0	0	0	10
Covington	1	---	0	1	2	3	0	2	0	0	15
Lexington	0	---	0	2	3	0	0	0	1	0	20
Louisville	0	8	0	9	9	9	0	7	0	1	81
Tennessee:											
Knoxville	1	9	0	0	1	6	0	0	0	1	25
Memphis	0	4	3	1	4	11	0	4	0	7	92
Nashville	0	---	1	4	3	6	0	6	-0	2	54
Alabama:											
Birmingham	0	24	1	3	3	4	0	5	0	1	57
Mobile	0	1	0	1	3	1	0	0	0	1	23
Montgomery	0	5	---	1	---	0	0	---	0	3	---
Arkansas:											
Fort Smith	0	---	---	4	---	0	0	---	0	0	---
Little Rock	0	---	0	0	6	0	0	1	0	0	7
Louisiana:											
Lake Charles	0	---	0	33	0	0	0	0	0	1	1
New Orleans	6	2	1	69	4	9	0	10	7	24	140
Shreveport	0	---	1	15	7	2	0	0	0	0	36
Oklahoma:											
Oklahoma City	0	---	0	6	5	4	0	1	0	0	42
Tulsa	1	---	---	35	---	8	0	---	0	1	---
Texas:											
Dallas	3	---	0	16	5	4	0	2	0	0	54
Fort Worth	0	4	0	10	0	1	1	2	0	0	26
Galveston	0	---	0	0	2	1	0	1	0	1	15
Houston	2	---	0	33	6	3	0	8	0	5	74
San Antonio	0	---	0	1	3	1	0	11	0	0	78
Montana:											
Billings	0	---	0	0	1	0	0	1	0	0	4
Great Falls	0	---	0	27	1	3	0	0	0	0	12
Helena	0	---	0	0	0	0	0	0	0	0	7
Missoula	0	1	0	24	0	2	0	0	0	0	5
Idaho:											
Boise	---	---	---	---	---	---	---	---	---	---	---
Colorado:											
Colorado Springs	0	---	0	37	0	15	0	1	0	2	14
Denver	8	---	1	43	4	7	0	5	1	17	86
Pueblo	2	---	0	130	0	2	0	0	0	14	7
New Mexico:											
Albuquerque	0	1	0	1	2	0	0	2	0	4	10
Utah:											
Salt Lake City	0	---	0	5	3	3	0	0	0	3	41
Washington:											
Seattle	0	---	3	209	7	9	0	8	0	2	121
Spokane	0	2	2	206	3	1	0	0	0	0	42
Tacoma	0	---	0	1	4	3	0	2	0	0	34
Oregon:											
Portland	0	2	0	0	5	3	0	2	0	1	75
Salem	0	1	---	0	---	0	0	---	0	1	---
California:											
Los Angeles	7	11	1	524	22	47	0	20	0	49	366
Sacramento	0	10	0	182	1	3	1	4	0	1	43
San Francisco	1	5	0	103	3	8	0	8	1	10	175

City reports for week ended Apr. 22, 1939—Continued

State and city	Meningitis, meningococcus		Poliomyelitis cases
	Cases	Deaths	
New York:			
Buffalo	0	1	0
New York	6	0	0
Syracuse	0	0	5
Pennsylvania:			
Philadelphia	1	0	0
Scranton	1	0	0
Illinois:			
Chicago	1	0	0
Maryland:			
Baltimore	1	0	0
South Carolina:			
Charleston	0	0	6
Tennessee:			
Knoxville	1	0	0
Alabama:			
Birmingham	1	0	0
Louisiana:			
Shreveport	0	2	0
Utah:			
Salt Lake City	0	1	0
California:			
San Francisco	1	0	0

Encephalitis, epidemic or lethargic.—Cases: New York, 4.
Pellagra.—Cases: Baltimore, 3; Atlanta, 1; Savannah, 6; Memphis, 2.
Typhus fever.—Cases: New York, 1; Fort Worth, 1.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended April 8, 1939.—During the week ended April 8, 1939, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis				2	2		1			5
Chickenpox		1	2	97	162	7	38	11	60	378
Diphtheria	1	1		25	1	1	4			33
Dysentery					1				4	5
Influenza		416		23	731		18		48	1,236
Measles		1	2	427	790	6	1	2	2	1,231
Mumps	4	1		51	65	9	1	10	4	145
Pneumonia		9			36	4	1		7	57
Poliomyelitis		1						2		3
Scarlet fever			13	49	176	31	35	26	9	339
Tuberculosis		13	12	36	30	1	10	2	7	111
Typhoid and paratyphoid fever			7	9	3					19
Whooping cough		40	4	48	199	7	30	2	31	361

CUBA

Provinces—Notifiable diseases—4 weeks ended December 10, 1938.—During the 4 weeks ended December 10, 1938, cases of certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer	4	2	3	5		6	20
Chickenpox			1			1	2
Diphtheria	1	13	3	2	2	1	22
Hookworm disease	1					4	5
Leprosy				2		1	3
Malaria	21	32	16	33	16	183	301
Measles				1			1
Scarlet fever		1					1
Trachoma				3			3
Tuberculosis	12	42	22	62	11	26	175
Typhoid fever	14	26	12	26	20	44	142
Whooping cough				1			1
Yaws						4	4

EGYPT

Infectious diseases—First and second quarters 1938.—During the first and second quarters of 1938, certain infectious diseases were reported in Egypt as follows:

Disease	First quarter		Second quarter	
	Cases	Deaths	Cases	Deaths
Anthrax	1	1	5	
Cerebrospinal meningitis	60	33	73	44
Chickenpox	572	3	735	8
Dengue	16			
Diphtheria	338	161	287	107
Dysentery	319	74	823	140
Erysipelas	943	147	1,396	206
Influenza	1,079	42	2,407	120
Jaundice, epidemic			1	1
Leprosy	53	21	159	24
Lethargic encephalitis			1	1
Malaria	4,030	7	2,604	11
Measles	2,702	407	4,276	1,118
Mumps	463	3	783	2
Plague	2	2	9	4
Poliomyelitis	1	1	3	1
Puerperal septicemia	90	68	113	70
Rabies	8	8	13	14
Scarlet fever	14		9	1
Smallpox			1	
Tetanus	126	77	108	61
Tuberculosis (pulmonary)	1,260	635	1,612	646
Typhoid fever	631	174	912	230
Typhus fever	612	80	1,807	258
Undulant fever	10	1	7	1
Whooping cough	697	55	1,248	63

Vital statistics—First and second quarters 1938.—Following are vital statistics for the first and second quarters of 1938 for all places in Egypt having a health bureau:

	First quarter	Second quarter
Number of live births	59,180	50,939
Live births per 1,000 inhabitants	49.8	42.9
Number of stillbirths	1,096	925
Number of deaths	28,543	37,677
Deaths per 1,000 inhabitants	24.0	31.8
Deaths under 1 year of age	7,386	12,789
Deaths under 1 year of age per 1,000 live births	125	251

FINLAND

Communicable diseases—March 1939.—During the month of March 1939, cases of certain communicable diseases were reported in Finland as follows:

Disease	Cases	Disease	Cases
Diphtheria	282	Scarlet fever	600
Influenza	6,449	Typhoid fever	8
Paratyphoid fever	47	Undulant fever	3
Poliomyelitis	2		

SWITZERLAND

Communicable diseases—January 1939.—During the month of January 1939 cases of certain communicable diseases were reported in Switzerland as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Poliomyelitis	4
Chickenpox	193	Scarlet fever	489
Diphtheria	54	Smallpox	1
German measles	10	Tuberculosis	167
Influenza	11,520	Typhoid fever	2
Measles	43	Undulant fever	2
Mumps	145	Whooping cough	96
Paratyphoid fever	2		

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

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for April 28, 1939, pages 711-723. A similar cumulative table will appear in future issues of the PUBLIC HEALTH REPORTS for the last Friday of each month.

Cholera

China—Macao.—During the week ended April 22, 1939, one case of cholera was reported in Macao, China.

Plague

Hawaii Territory—Island of Hawaii—Hamakua District—Honokaa.—A rat found on March 29, 1939, in Honokaa area, Hamakua District, Island of Hawaii, T. H., has been proved positive for plague.

India—Coorg Province.—During the week ended April 22, 1939, four cases of plague were reported in Coorg Province, India.

United States—Washington.—A report of plague-infected fleas in Adams and Lincoln Counties. Wash., appears on page 808 of this issue of PUBLIC HEALTH REPORTS.

Typhus Fever

Trans-Jordan—Amman District.—During the week ended April 22, 1939, seven cases of typhus fever were reported in Amman District, Trans-Jordan.

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