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## SICKNESS AMONG MALE INDUSTRIAL EMPLOYEES DURING THE FINAL QUARTER OF 1936 AND THE YEAR AS A WHOLE<sup>1</sup>

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### YEAR 1936

The frequency of 8-day or longer disabilities from sickness and nonindustrial accidents among the 157,294 male workers in the employ of 29 industrial concerns included in the sample of industrial employees for morbidity analysis in 1936 was higher than in 1935, which rate in turn was above that for the preceding year. In 1936 the incidence was 95.1 cases per 1,000 males, in 1935 it was 85.7, and in 1934 it was 79.3. Thus in 2 years the frequency of illness (for 8-day or longer cases) has increased 20 percent in this sample of the male industrial population. As compared with the average annual rate during the 5 years ending December 31, 1935, however, the 1936 incidence was higher by only 7 percent.

For diseases of the respiratory system, the 1936 rate exceeded that for 1935 by 17 percent and the 5-year average by 10 percent. Bronchitis and pneumonia occurred oftener in 1936 than in either of the two earlier periods under consideration. However, the number of new cases of respiratory tuberculosis per 1,000 male employees decreased appreciably from the 1935 and the 1931-35 incidence of this disease. If this sample of the population is representative, even lower rates of tuberculosis mortality than have occurred recently are presaged from the declining number of new cases.

The incidence of pneumonia (all forms) has increased appreciably during the past 2 years. In 1935 the rate was 15 percent higher, and in 1936 one-third higher than the average rate for the 5 years 1931-35. Since about one-fourth of the pneumonia cases occurring among workers below age 50 may terminate fatally, the serious nature of a high incidence rate of this disease is manifested.<sup>2</sup>

The influenza rate in 1936 was 22 percent above its 1935 frequency, but practically the same as the average rate during the 5 years 1931-35.

<sup>1</sup> Report for the third quarter and the first 9 months of 1936 was published in the Public Health Reports for Jan. 20, 1937, pp. 127-129.

<sup>2</sup> Frequency of Pneumonia Among Iron and Steel Workers. Public Health Bulletin No. 202. Government Printing Office, Washington, D. C., 1932. P. 46.

As usual, the nonrespiratory diseases as a group showed less variation than the respiratory group. The nonrespiratory disease rate was definitely higher, however, in 1936 than in the preceding year or during the 5 preceding years as a whole. Among diseases of the digestive system the greatest proportionate increase was recorded for appendicitis, the recorded rate in 1936 being 4.4 cases per 1,000 males as compared with 3.8 in 1935 and 3.7 in the period 1931-35. There was no change in the frequency of diseases of the nervous system nor in the important circulatory and genitourinary disease groups, but the incidence of diseases of the skin and of the rheumatic group increased somewhat in 1936 over the frequencies recorded in the preceding year and the 5-year period.

For nonindustrial injuries the 1936 rate was 9 percent above the frequency recorded in 1935, but identical with the 5-year average rate.

#### FOURTH QUARTER OF 1936

During the first, second, and third quarters of 1936 the sickness frequency rate was only slightly higher than in the corresponding period of the preceding year. In the final quarter, however, the rate was markedly above the level of the last 3 months of 1935. Influenza increased 80 percent, pneumonia 20 percent. In the six respiratory disease categories listed in table 1, only tuberculosis showed no increase in frequency. The rate for nonrespiratory diseases as a whole was 17 percent higher than in the fourth quarter of 1935. An enhanced rate is shown for nonindustrial injuries, diseases of the stomach, appendicitis, the rheumatic group of diseases, genitourinary diseases other than nephritis, and diseases of the skin. A decreased incidence was recorded for diseases of the nervous system, for the serious diseases embraced in the group designated "diseases of the heart and arteries and nephritis," and for the epidemic and endemic diseases as a whole, influenza excepted. These groups, in addition to respiratory tuberculosis, constitute the only bright spots in the morbidity picture for the fourth quarter of 1936.

TABLE 1.—*Frequency of disability lasting 8 calendar days or longer in the fourth quarter and in the year 1936 compared with the corresponding periods of 1935. (Male morbidity experience of industrial companies which reported their cases to the U. S. Public Health Service)*<sup>1</sup>

Diseases and disease groups which caused disability. (Numbers in parentheses are disease title numbers from the International List of the Causes of Death, Fourth Revision, Paris, 1929)	Annual number of disabilities per 1,000 men				
	Fourth quarter of—		Full year of—		
	1936	1935	1936	1935	1931-35
Sickness and nonindustrial injuries <sup>2</sup> .....	103.5	82.0	95.1	85.7	89.2
Nonindustrial injuries.....	13.0	11.5	12.1	11.1	12.1
Sickness.....	90.5	70.5	83.0	74.6	77.1
Respiratory diseases.....	39.5	26.8	34.7	29.7	31.5
Bronchitis, acute and chronic (106).....	5.8	4.3	5.0	3.9	3.5
Diseases of the pharynx and tonsils (115a).....	4.8	4.4	4.9	5.0	4.7
Influenza and grippe (11).....	18.3	10.2	15.8	12.9	15.9
Pneumonia, all forms (107-109).....	2.4	2.0	2.7	2.3	2.0
Tuberculosis of the respiratory system (23).....	.8	1.0	.8	1.0	1.0
Other respiratory diseases (104, 105, 110-114).....	7.4	4.9	5.5	4.6	4.4
Nonrespiratory diseases.....	51.0	43.7	48.2	44.9	45.6
Diseases of the stomach, cancer excepted (117-118).....	4.4	3.5	3.9	3.7	3.7
Diarrhea and enteritis (120).....	1.3	1.3	1.4	1.2	1.2
Appendicitis (121).....	4.1	3.6	4.4	3.8	3.7
Hernia (122a).....	1.6	1.5	1.7	1.4	1.6
Other digestive diseases (115b, 116, 122b-123).....	3.0	2.8	2.9	2.8	3.0
Rheumatic group, total.....	10.7	8.9	10.2	9.2	9.9
Rheumatism, acute and chronic (56-57).....	4.7	3.4	4.5	4.0	4.7
Diseases of the organs of locomotion (156b).....	3.4	3.1	3.3	2.8	3.0
Neuralgia, neuritis, sciatica (87a).....	2.6	2.4	2.4	2.4	2.2
Neurasthenia and the like (part of 87b).....	1.2	1.3	1.1	1.2	1.1
Other diseases of the nervous system (78-85, part of 87b).....	1.2	1.5	1.2	1.3	1.3
Diseases of the heart and arteries and nephritis (90-99, 102, 130-132).....	3.8	4.1	3.7	4.0	3.8
Other genito-urinary diseases (133-138).....	3.1	2.3	2.5	2.6	2.4
Diseases of the skin (151-153).....	3.8	2.7	3.1	2.7	2.8
Epidemic and endemic diseases except influenza (1-10, 12-22, 24-33, 36-44).....	1.9	2.6	2.4	2.7	2.4
Ill-defined and unknown causes (200).....	4.0	1.9	3.2	2.1	2.0
All other diseases (45-55, 58-77, 88, 89, 100, 101, 103, 154-156a, 157, 162).....	6.9	5.7	6.6	6.2	6.7
Average number of males covered in the record.....	164, 877	143, 877	157, 294	140, 306	146, 921
Number of companies included.....	29	29	29	29	-----

<sup>1</sup> In 1935 and 1936 the same companies are included. The rates for the years 1931-35 include 24 of these companies, which employed an average of 119,426 men during these years, or 81 percent of the 146,921 men representing the sample population for the 5 years.

<sup>2</sup> Exclusive of disability from the venereal diseases and a few numerically unimportant causes of disability.

## STUDIES ON TRICHINOSIS

### III. The Complex Clinical Picture of Trichinosis, and the Diagnosis of the Disease

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In two recent papers, Hall and Collins (1937) have reported an incidence of 13.67 percent of trichinae in 300 cadavers from 11 hospitals at Washington, D. C., and Baltimore, Md., and summarized the results of previous investigations which, with their own, show the presence of trichinae in 222 of 1,778 cadavers, an indicated incidence of 12.5 percent, with not one of the 222 positive cases ever having had

a diagnosis of trichinosis in spite of the fact that trichinae were sometimes present in amounts up to almost 1,000 per gram of muscle. The authors have also correlated the incidence with factors present in geographic areas and various population groups. From the findings to date they draw the conclusions, which previous authors apparently hesitated to draw in specific terms, that the United States, so far as evidence is available, has the greatest problem of trichinosis of any country in the world, that it apparently involves millions of persons, and that trichinosis is a major public health problem in this country.

These conclusions are so widely at variance with previous beliefs in general, which are to the effect that trichinosis is rare and relatively unimportant, that one must either assume that the findings reported by 9 workers or groups of workers from 24 hospitals in 11 widely scattered cities are not significant, that these findings are usually not clinically significant, or else that our general background in regard to the picture of clinical trichinosis, our diagnostic methods, and our education, training, and preparation for the detection of trichinosis are definitely faulty.

The available figures on the incidence of trichinae in cadavers, without being precise in terms of percentages, indicate a high general incidence. The size of the samples on which incidence is considered is less important than that the samples be representative. The 1,778 diaphragms, on which the figure of 12.5 percent is based, have been collected from all sections of the country, and Hall and Collins (1937) have given several reasons why the percentages obtained to date are all lower than the actual incidence in the material examined.

The idea that the findings are not clinically significant finds no support in the quantitative data showing up to almost 1,000 trichinae per gram of diaphragm in some of these cases. Undoubtedly infestations with hundreds of trichinae per gram produce definite clinical symptoms.

The true explanation obviously lies in the alternative idea that our background of concepts of trichinosis is quite faulty, our knowledge inadequate, and our preparation for intelligent handling of the disease definitely unsatisfactory. Medical schools quite generally give the subject of parasitology only scanty and inadequate attention, and no medical subject is more neglected, a fact which is recognized by all physicians familiar with parasitology. In the subjects named in the essentials of an acceptable medical school, published in the *Journal of the American Medical Association* for August 29, 1936 (v. 107 (9); 684-685), parasitology is not mentioned, this subject receiving only incidental attention in other courses. From long acquaintance with hundreds of both veterinarians and physicians, I do not hesitate to say that veterinarians in general are much better informed regarding parasitology, both in theory and practice, than are physicians in

general. Twenty years ago both were equally uninformed, but within the period of 20 years all the veterinary colleges have established courses in parasitology and have greatly improved their teaching of this subject. In small-animal practice, a very important field of veterinary medicine, the treatment of parasitisms makes up fully 50 percent of the practice.

There are several reasons for this state of affairs. Domesticated animals cannot be surrounded by the safeguards with which mankind is surrounded. Sewerage systems and privies, our greatest sanitary safeguards, cannot be utilized by our animals, and all our grazing animals deposit their feces on the table, their pasture, from which they feed, an ideal set-up for maintaining parasitisms. The cooking of food, bathing, and similar conditions of life have only limited application so far as our animals are concerned. Meat inspection is intended to protect mankind, and the idea that it should protect our meat-eating animals is hardly expressed, much less accepted or practised. Lacking all these safeguards, our domesticated animals quite generally suffer from parasitisms of many sorts. Hence, it was not difficult to persuade the veterinarian to take an interest in parasitology, as the writer, who played a role in this matter, found out within the course of the first couple of years of active participation.

So far as the physician is concerned, we have been misled by the idea that parasitology is a phase of tropical medicine, and that tropical medicine is a matter that concerns the physician in the Tropics. Manson long ago expressed the idea that parasitisms were incidental concerns in the temperate regions and routine matters in the Tropics. Today, all physicians well informed in tropical medicine recognize that the diseases and parasites most prevalent in the Tropics are merely predominantly prevalent in the Tropics, but that almost all of them are plentifully present in temperate regions and should be known to physicians in those regions, that their prevalence in the Tropics is often correlated more with a general lower sanitary level in the Tropics than with climatic conditions, and that sanitary levels over much of the temperate regions are low enough to favor these tropical diseases and parasites. They point out that sufferers from these diseases and parasites are present in our own country in relatively large numbers, numbers increasing as modern transportation develops, and that these sufferers receive inadequate treatment by the vast majority of physicians in the United States because of the physicians' unfamiliarity with so-called tropical diseases. Mackie (1935) states that "New York City offers a large and relatively unexplored opportunity in tropical medicine," and that Fuelleborn had expressed the belief that it "offered as wide a variety of tropical diseases as any in the world."

The two worm parasites which quite definitely surmount our sanitary barriers in the United States are trichinae and pinworms, and

these parasites are relatively or almost entirely neglected in our medical education and training. Both of them have had inadequate research study. If infestations with these two parasites were generally recognized, it would be found that a considerable amount of trichinosis is already being dealt with by physicians without the disease being recognized, and a considerable practice in dealing with pinworms would be developed where it is now being overlooked.

The most serious gap in our knowledge of trichinosis, so far as medical practice is concerned, is our ignorance of the clinical picture. The classical picture, as given in the textbooks and reference books, is greatly oversimplified and represents only a composite picture as ascertained, for the most part, from epidemics of severe clinical trichinosis. Ransom (1915) has well said: "An important characteristic of trichinosis, whether mild or severe, is the lack of regularity in its course", and Bloch (1916) has referred to its protean character. Like any oversimplified, highly generalized, composite picture, the customary book description represents a relatively rare picture.

It is even probable that there is a changing picture which follows from various changes in modern modes of life, including changes in the methods of killing swine and preparing pork products. Hall and Collins (1937) have already called attention to this in noting that Ransom (1915) appears to have been the first to recognize a dilution factor in the present-day preparation of sausage and similar products from trimmings of many swine, perhaps hundreds, with a resultant distribution through the product of the trichinae from possibly one hog in a hundred hogs, so that the chance of getting trichinae from such a product, when eaten raw, is greatly increased, whereas the likelihood of getting clinical trichinosis is greatly decreased. Simultaneously, the likelihood of repeated light infestations is greatly increased, a thing which should be considered in connection with modern aspects of trichinosis. How significant these repeated light infestations may be to the health of the individual is unknown. Under older methods of killing swine on the farm or in small slaughter houses, the chance of getting trichinae from eating pork or pork products from swine of which one percent was infested would be very small, but the chance that any infestation would result in clinical trichinosis would be very great, and epidemics from this form of slaughter still appear to make up the greater part of the epidemics in the United States. Obviously, the chance of reinfection from such a source is relatively small, but the chance that any reinfection will again result in clinical trichinosis is very great.

Ransom (1915) has stated that trichinosis is difficult to diagnose, and we lay down the general thesis that we have as yet no adequate clinical picture of trichinosis available to the clinician. To establish that thesis, we consider first the basic facts underlying the occurrence

of trichina infestations. Trichinosis, as a disease, is conditioned by the presence of a nematode parasite, *Trichinella spiralis*, in the following forms: As infective larvae entering the digestive tract; as older larvae and adults in the lumen of the intestine; as adults among and partly within the villi; as young larvae circulating through the lymphatic and the systemic and pulmonary circulation, and entering such tissues as the lymph nodes and glands, the brain, the heart muscles, the striated, voluntary, somatic, or skeletal muscles, and, to some extent, other tissues and various cavities, being reported from the lungs, liver, bile, peritoneal cavity, pleural cavity, pericardial cavity, pancreas, kidney, bone marrow, placenta, human milk, and the pus from the external ear and from a furuncle; and as larvae degenerating and disintegrating in various sites, such as the heart, and encysting, and ultimately calcifying, in the skeletal muscles.

With an etiology of this type, the clinical effects produced by the worm, in general, will be conditioned by the following factors: (1) In part by the number of worms present; (2) in part by the size of the patient; (3) in part by the tissues invaded; and (4) in part by the factors of physical condition, resistance, concomitant pathologic conditions present, and other features of the individual attacked by the parasite. Looked at in this manner, trichinosis becomes a highly complicated and little studied disease, but if we are to give it adequate consideration we must look at it in this light, and must regard the complete classical picture as something which has little more existence than has the "average man", and which is useful only as a concept to be applied with numerous reservations and with an eye to possible and probable modifications of the general pattern.

As regards the number of trichinae present, it is obvious that there may be a minimum of one infective larva swallowed, and that this larva, whether male or female, may develop to one adult in the lumen of the intestine and among the villi, with no subsequent production of any larvae whatever. Since Roth (1935) has recovered four trichina larvae from a composite sample of four guinea pig fetuses, after digestion and examination with the Baermann apparatus, it seems probable that as a result of prenatal infection a person may have as little as one encysted larva in the muscles. So far as numbers are concerned, we may say with confidence that at this extreme of light infection, the presence of one adult or one larva does not produce clinical trichinosis. Very light infestations of approximately this degree constitute zoological trichinosis as opposed to clinical trichinosis.

At the other extreme, Roth (1935) has reported the astounding number of 10,000 larvae per gram of muscle in an artificially infected guinea pig. In similar artificial infections, workers have developed thousands of adults in the digestive tract of experiment animals. Of such extreme cases, with their accompaniment of innumerable larvae

in the lymph, blood, and various tissues, one may say with entire confidence that the presence of these large numbers of worms ensures the production of severe clinical trichinosis.

As we move from either one of these extremes toward the other, we soon run into unknown territory. We are sure that our necropsy cases of infestation with approximately 1,000 larvae per gram of diaphragm muscle represent former cases of clinical trichinosis, and suspect that those with only one larva per 100 grams of diaphragm muscle probably do not represent cases of clinical trichinosis; but we have no adequate data on which to make correlations and to conclude anything, for instance, about a case of infestation with one larva per gram of diaphragm muscle. Trichinosis has had so little adequate study that there is an almost complete lack of quantitative data covering the number of trichinae present in a weighed sample of a selected muscle from the hundreds of clinical cases which have come to necropsy. If these data were available at this time they could be correlated to great advantage with the case histories of individuals in incidence studies and in various other ways. Since we do not have them, we should obtain them as soon as possible, and pathologists could render a great service by at least making a direct microscopic examination of a press preparation of one gram of diaphragm muscle, taken from near the tendinous portion, from each case of clinical trichinosis coming to necropsy, and recording, for the benefit of investigators, the results in terms of trichinae per gram.

While a fund of information as to the number of trichinae per gram would not, of itself, develop our picture of clinical trichinosis, this information, coupled with the case history and a presentation of the clinical and post-mortem features actually present in all cases so studied, would start us on the road to an understanding of this practically unstudied subject. There is ample evidence that the clinical picture is highly variable, and these quantitative data would clarify the picture as to the extent to which intensity of infection is the responsible factor, or one of the factors, in the production of certain symptoms.

The second factor, the size of the patient, has a bearing on the matter, since any given number of worms concentrated in a small terrain will give a more intense invasion than the same number of worms scattered over a larger terrain. Thus the concentration in a child weighing 50 pounds should be four times as great as in an adult weighing 200 pounds. While children are said to show milder clinical conditions than adults, as a rule, the reason is unknown, and might be because of eating smaller amounts of infected pork. In exceptional instances, children may have fulminating and rapidly fatal cases, such as the case reported by Sobel (1936), of a child 4 years old who died after an illness of less than 4 days.



The third factor which conditions our clinical picture of trichinosis, is the matter of tissues invaded. As already noted, the worms, in their various stages, are in the intestinal lumen, among and in the villi, in the lymph and blood stream, and, either temporarily or permanently, in the lymph nodes and glands, brain, heart, skeletal muscles, and other tissues. In these sites an adequate number of worms may produce lesions or such other pathologic conditions as dysfunction with the appropriate associated symptoms. In recent years there have been some studies showing that the oversimplified picture of trichinosis as presenting gastrointestinal symptoms associated with larvae swallowed and adults developing and entering villi, of eosinophilia associated with larvae in the blood stream and muscles, of suborbital edema associated with larval worms in the eye muscles and in eye capillaries, of fever and myositis associated with invasion of skeletal muscles, and of pneumonia associated, somewhat uncertainly, with toxic products of damaged muscle tissue, or various other conditions is inadequate. Investigators have recently called attention to the heart lesions caused by the invasion of the myocardium, the lesions persisting after the worms have died, degenerated, and disappeared from the heart muscles, in which they cannot and do not encyst. Others have called attention to the symptoms of nervous derangement associated with the invasion of the brain, its coverings, and the cerebrospinal fluid, an association known for some time but too little studied.

In this connection we summarize briefly some of the correlations between tissues invaded and the symptoms associated with the invasion, adding to each some of the conditions with which trichinosis presenting these symptoms may be, and in practically all cases has been, confused. Many of these symptoms are well summarized by Spink and Augustine (1935). Some of these symptoms and diagnoses are associated with the effects of the parasite in several locations rather than in just the location given here.

*Larvae and adults in intestinal lumen and villi.*—*Symptoms:* Gastro-enteritis, diarrhea, constipation, or successive constipation and diarrhea, "vegetable-soup stools", often with Charcot-Leyden crystals, nausea, vomiting, abdominal pain of varying degree and in various locations, cold sweats, hot flushes, intestinal hemorrhages, and fever; *diagnosed as* typhoid fever, paratyphoid fever, typhus fever, cholera, cholera morbus, intestinal influenza, malaria, ptomaine poisoning, food poisoning, gastro-enteritis of unknown origin, gastrointestinal catarrh, appendicitis, colitis, peptic ulcer, gall bladder involvement, and acute alcoholism.

*Larvae in blood stream and muscles.*—*Symptoms:* Eosinophilia, oligemia, oligocythemia, hypotension, leucocytosis, splenic enlargement, anemia absent or else present in varying degree, edema in

various parts of body (especially suborbital), dyspnoea, orthopnoea, diaphragmatic breathing, pleurisy, cough, hiccough, asthma, hemoptysis, pneumonia, dysphagia, aphonia, laryngitis, myositis, myalgia, furunculosis, cutaneous eruptions, urticaria, rose spots, desquamation, sweating, apathy, lassitude, somnolence or insomnia, anorexia, conjunctivitis, corneal ecchymoses, mydriasis, photophobia, diplopia, pulse often slow by comparison with height of fever, albuminuria present or absent, indicanuria present or absent, positive diazo reaction, casts in urine, positive Kernig's sign, loss of patellar and Achilles' tendon reflexes, neuritis, rigor, persistent or remittent fever, and menstrual disturbances; *diagnosed as* arthritis, rheumatism, rheumatic fever, dermatomyositis, pelvic inflammatory disease, pleurisy, asthma, upper respiratory infection, pneumonia, laryngitis, conjunctivitis, nephritis, multiple neuritis, intercostal neuritis, angioneurotic edema, syphilis, tuberculosis, undulant fever, tetanus, scarlet fever, measles, mumps, influenza, frontal sinusitis, erysipelas, and lead poisoning.

*Larvae in heart.*—*Symptoms:* Myocarditis, systolic murmur at apex, cardiac lability, and dirotic pulse; *diagnosed as* myocarditis, rheumatic myocarditis, endocarditis, or other heart diseases.

*Larvae in brain and meninges.*—*Symptoms:* Encephalitis, meningitis, cephalalgia, hemiplegia, delirium, and coma; *diagnosed as* encephalitis, meningitis, tuberculous meningitis, and poliomyelitis.

From the above it appears that diagnoses of approximately 50 disease conditions may be made, and in practically all cases have been made, when the actual basis of these conditions is the presence of trichinae. Undoubtedly, this list could be materially enlarged from a more extensive search of the literature or a more adequate knowledge of the polymorphic manifestations of trichinosis. Somewhere among the diagnoses listed, and others not listed, we must look for the large number of cases of trichinosis which necropsy studies show exist in the United States, and which are being missed in our diagnoses. In general, the diagnoses made are based on symptomatology rather than on established etiology.

Even in severe clinical trichinosis, part of the classical picture may be omitted or suppressed, and the order of events may be irregular. The first stage, that of gastrointestinal disturbances, is absent in many cases. Visible symptoms may first develop or be noted in from a few hours to over 40 days after the apparent time of infection. Eosinophilia may be absent if there is a concomitant bacterial infection or may decrease if a bacterial infection supervenes, as Spink (1934) has demonstrated experimentally; and with peritonitis present the eosinophiles may never rise above 3 percent, the blood picture showing a high neutrophile count indicative of bacterial infection. While there is a customary gradual rise to a high eosinophile level, followed by a gradual decline, the level may never be high, the peak

may be reached early or late in the course of the disease, there may be an irregular rise and fall, and eosinophilia may persist at some such level as 10 percent for long periods after recovery. The myalgia may be generalized or definitely localized and, if localized, may mislead the clinician into a diagnosis of intercostal neuritis or neuritis of other sorts, and of rheumatic conditions, the latter especially plausible in those cases in which myalgia persists for a year or more. Children usually have the disease in atypical forms, with a low mortality rate, although some rare cases in children are of a fulminating type which is fatal in less than a week. The eye conditions often predominate to the extent that the patient goes first to an ophthalmologist, and since a careful examination usually shows little of a definite character to account for the trouble, these cases may be very perplexing. Heart conditions may obscure the entire picture of trichinosis. Predominant nervous conditions suggestive of meningitis are given little consideration as possibly suggestive of trichinosis. Added to all this is the too common denial of the eating of raw pork or pork products, even by orthodox Jews who contend, sometimes quite honestly, that they have never eaten meat that is not kosher, but who, nevertheless, show trichinae on biopsy in addition to definite symptoms of trichinosis.

The fourth factor, that of the patient's individual condition, resistance, and concomitant pathologic conditions, modifies the picture of trichinosis as it does the picture of other diseases. Theobald Smith (1934), in his excellent work on parasites and disease published just before his death, notes that in any invasion of a host by a parasite, the parasite brings to the conflict its appropriate weapons of offense and defense, and the host in turn brings to bear its weapons for the destruction of the parasite and its defense for the immobilization of the parasite and its own protection. This highly useful concept needs only to be stated to make clear its application to trichinosis. The war rages, with its gains and losses in this or that part of the host terrain; and from the conflict the patient emerges triumphant, perhaps with little injury, perhaps scarred and doomed to a shortened life from wounds sustained, or goes down in defeat and death. Victory or defeat, wounds and healing, are determined by the interplay of the weapons of offense and defense wielded by both combatants. Obviously, such a weak spot in the host defenses as an already damaged heart may turn the tide of battle in favor of the parasite, with the war terminating in the death of the patient from heart disease with no suspicion, on the part of the physician, of the parasite that worked the essential injury.

Between light infestations, producing zoological but not clinical trichinosis, and heavy infestations, producing severe clinical trichinosis, there is the unstudied no-man's land of infestations of inter-

mediate degrees of all sorts, which infestations must produce atypical clinical trichinosis of unknown symptomatology. The study of these atypical cases, making up probably the majority of all cases of trichina infestation, so far as data are available for estimating this calls for the cooperation of many pathologists, clinicians, and parasitologists, and for a lot of quantitative studies which have never been made. The material is obviously at hand almost anywhere in the United States, and notably abundant in such localities as the New York-New England area and on the west coast; it is plentiful in Washington. It is the purpose of this paper to invite attention to the problem and its importance, and to supply some background of information to indicate the direction along which investigations might proceed. At the same time, it is hoped that the emphasis on the inadequate nature of the classical picture of trichinosis will aid in the development of a better type of diagnosis.

At the present time we have, in addition to the symptomatology of trichinosis, such aids to diagnosis as the biopsy, the examination of stools for trichinae, the search for trichina larvae in the blood and cerebrospinal fluid, and the skin test and precipitin test. As regards the biopsy, the tissue excised should be examined as a press preparation and not sectioned, since the press preparation is much more certain to detect trichinae present and permits of a much more rapid determination of the presence or absence of trichinae. The biopsy method has the limitation that it is negative in the early stage of the disease, and even when trichinae have just arrived in the muscles they are much less likely to be detected than when they have had time to grow and encyst; thereafter they give dependable information provided the biopsy specimen comes from an infested muscle and the picture is not complicated by trichinae present from a previous infection and hence not correlated with the clinical symptoms being considered at the time of the biopsy.

The examination of stools for trichinae is not established at this time as a valuable aid in diagnosis. The weight of evidence is to the effect that it is of little or no value.

As regards the presence of trichina larvae in the blood and cerebrospinal fluid, this has two time limitations. The larvae are present, although not always easy to find, about one week after infection, and they persist throughout the period of larval production by females in the villi, having been detected in the blood over a period of 3 weeks, but when looked for too early or too late they will be absent even though the case is clinical trichinosis.

As regards the skin tests, they do not give positive reactions in trichinosis as early as is desirable, being positive, in certain dilutions, in 11 days, according to McCoy, Miller, and Friedlander (1933), or 14 days, according to Spink and Augustine (1935), and the test being

positive, and hence potentially misleading, for over 7 years after clinical recovery. McCoy, Miller, and Friedlander have reported the test as somewhat nonspecific in giving positive reactions in cases of infestation with the whipworm, *Trichuris trichiura*, a nematode somewhat closely related to *Trichinella spiralis*, but Theiler, Augustine, and Spink (1935) have taken exception to one basis of their assumptions, namely, that trichinosis is apparently absent in the South, where the work was done, and Hinman's (1936) report of an incidence of 3.5 percent of trichinae in cadavers at New Orleans, a figure which is probably too low because of the use of only one technique in the study, supports the exception.

The precipitin test becomes positive even later than the skin test, usually about the end of the fourth week after infection. It may remain positive for a year after infection, but how much longer it may remain positive is unknown. Bachman, Rodríguez Molina, and Gonzales (1934) report various conditions which give non-specific and anomalous reactions. Both the precipitin test and the skin test need more careful study in titration, standardization, preparation of antigen, and interpretation of reaction. A test which will permit of earlier diagnosis is evidently desirable, and will probably be developed. In the meantime and pending improvements, these diagnostic tests should be used when any of the cardinal symptoms of trichinosis, such as fever and marked eosinophilia, or suborbital edema and myalgia, are present. So far as available material permits, the National Institute of Health will cooperate with physicians in making such tests and affording information in regard to them. What are at present regarded as the cardinal symptoms—a history of the eating of raw pork products or raw or undercooked pork, gastrointestinal disturbances, eosinophilia, edema (usually suborbital), high fever, myositis, and pneumonia—must continue to be regarded as valuable clues to diagnosis, but it must be kept in mind that they may be present in varying combinations and that a consideration of other symptoms may be found essential, especially for the diagnosis of the atypical trichinosis which probably makes up the large bulk of cases.

#### SUMMARY

Since examinations of 1,778 cadavers at 24 hospitals in 11 places in the United States indicate an incidence of at least 12.5 percent of trichinae, with not 1 case out of 222 positive cases having been diagnosed as trichinosis at any time, it is evident that our knowledge of the polymorphic picture of clinical trichinosis is inadequate and that we need more information in regard to diagnosis.

Trichinosis, as a disease, is determined by the presence of larval and adult worms in the intestine, and of larvae in the lymph, blood,

lymph nodes and glands, brain, heart, voluntary muscles, and other tissues and certain cavities. The disease is conditioned by the numbers of worms present, the size of the patient, the tissues invaded, and the individual patient's physical condition, resistance, and concomitant pathologic conditions present.

As regards numbers of worms present, we are certain that such large numbers of larvae as 1,000 per gram of muscle will produce severe clinical trichinosis, and suspect that such small numbers as one larva per 100 grams will not produce clinical trichinosis, but we have no data on which to judge intermediate degrees of infestation. Within this range of intermediate infestation there is undoubtedly a large group of cases of atypical clinical trichinosis, much larger than the group of so-called typical cases, which is unknown and unstudied.

As regards the size of the patient, the same number of larvae in a small individual will give a higher concentration of larvae per gram, so that a given number of worms may cause, relatively, four times as much damage, or more, in one individual as they will cause in another.

As regards tissues invaded, the wide range of tissues damaged gives rise to numerous cases in which the predominant symptoms are those of diseases of infectious sorts other than trichinosis, of heart disease, of respiratory disease terminating in pneumonia, often fatal, of meningitis and other disturbances of the nervous system, of eye lesions, and other conditions. Approximately 50 disease conditions confused with trichinosis are listed.

As regards the condition of the individual patient, we expect the most variegated clinical picture associated with weaknesses in various organs, sometimes with death so closely correlated with the attack on one weak organ, such as the heart, that trichinosis is never suspected.

To clarify our picture of trichinosis, especially of atypical clinical cases caused by infestations of intermediate extent, as opposed to very heavy or very light infestations, calls for much research and cooperation by pathologists, clinicians, and parasitologists. Quantitative studies are especially necessary.

The various laboratory aids in diagnosis are noted, and their limitations pointed out.

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## MORTALITY STATISTICS FOR THE UNITED STATES, 1935

Deaths (exclusive of stillbirths) and death rates, by cause, for 1935 and comparison with 1930 and 1934

According to figures compiled by the Bureau of the Census, Department of Commerce,<sup>1</sup> there were 1,392,752 deaths from all causes (exclusive of stillbirths) in the United States in 1935, representing a mortality rate of 10.9 per 1,000 estimated population, a decrease as compared with 1934, when 1,396,903 deaths occurred, giving a mortality rate of 11.0 per 1,000. The rates for 1935, 1934, and 1933 are the lowest in the 6-year period 1930-35. The death rate for 1933 (10.7 per 1,000) was the lowest rate recorded since the annual collection of mortality statistics was begun in 1900.

The accompanying table<sup>1</sup> gives the number of deaths and the death rates for the United States for 1935, and comparison with 1930 and 1934, for each cause according to the titles of the International List of Causes of Death.<sup>2</sup> The figures for the 2 later years include the entire United States; those for 1930 include all States except Texas, which was admitted to the death registration area in 1933.

<sup>1</sup> Vital Statistics—Special Reports, Vol. 3, No. 10, pp. 58-64. Department of Commerce, Bureau of the Census.

<sup>2</sup> The detailed causes of death in the Supplemental Classification of Accidents (201-214) and data for the years 1931-33, given in the Census report, are omitted here.

## Deaths (exclusive of stillbirths) from each cause and death rates in the United States, 1930, 1934, and 1935\*

International list no.	Cause of death	Number			Rate per 100,000 estimated population		
		1935	1934	1930	1935	1934	1930
	Total deaths (all causes).....	1,392,752	1,396,903	1,343,356	1,092.2	1,103.2	1,133.9
	I. INFECTIOUS AND PARASITIC DISEASES.....	146,840	148,124	162,326	115.1	117.0	137.0
1	Typhoid fever.....	3,442	4,162	5,610	2.7	3.3	4.7
2	Paratyphoid fever.....	89	75	88	.1	.1	.1
3	Typhus fever.....	80	86	33	.1	.1	(1)
4	Relapsing fever.....	2	1	3	(1)	(1)	(1)
5	Undulant fever.....	98	65	53	.1	.1	(1)
6	Smallpox.....	25	24	165	(1)	(1)	.1
7	Measles.....	3,907	6,986	3,820	3.1	5.5	3.2
8	Scarlet fever.....	2,718	2,524	2,279	2.1	2.0	1.9
9	Whooping cough.....	4,753	7,518	5,707	3.7	5.9	4.8
10	Diphtheria.....	3,901	4,159	5,822	3.1	3.3	4.9
11	Influenza.....	28,230	21,868	23,066	22.1	17.3	19.5
	Respiratory complications specified.....	18,878	13,966	13,734	14.8	11.0	11.6
	Respiratory complications not specified.....	9,352	7,902	9,332	7.3	6.2	7.9
12	Cholera.....						
13	Dysentery.....	2,436	3,373	3,356	1.9	2.7	2.8
	Amebic.....	282	362	225	.2	.3	.2
	Bacillary.....	725	974	610	.6	.8	.5
	Unspecified or due to other causes.....	1,429	2,037	2,521	1.1	1.6	2.1
14	Plague.....		2			(1)	
	Bubonic.....		2			(1)	
	Pneumonic.....						
	Septicemic.....						
	Unspecified.....						
15	Erysipelas.....	2,106	1,947	2,508	1.7	1.5	2.1
16	Acute poliomyelitis, acute polioencephalitis.....	1,040	852	1,370	.8	.7	1.2
17	Lethargic or epidemic encephalitis.....	857	923	1,062	.7	.7	.9
18	Epidemic cerebrospinal meningitis.....	2,657	1,272	4,211	2.1	1.0	3.6
19	Glanders.....	2	2	1	(1)	(1)	(1)
20	Anthrax (bacillus anthracis) malignant pustule.....	10	9	15	(1)	(1)	(1)
21	Rabies.....	77	80	60	.1	.1	.1
22	Tetanus.....	1,057	1,226	1,287	.8	1.0	1.1
23-32	Tuberculosis (all forms).....	70,080	71,609	84,741	55.0	56.6	71.5
23	Respiratory system.....	63,488	64,706	75,120	49.8	51.1	63.4
24	Meninges and central nervous system.....	1,963	2,109	2,995	1.5	1.7	2.5
25	Intestines and peritoneum.....	1,431	1,579	2,554	1.1	1.2	2.2
26	Vertebral column.....	730	738	883	.6	.6	.7
27	Bones and joints (vertebral column excepted).....	360	398	517	.3	.3	.4
	Bones.....	138	133	205	.1	.1	.2
	Joints.....	222	265	312	.2	.2	.3
28	Skin and subcutaneous cellular tissue.....	36	27	37	(1)	(1)	(1)
29	Lymphatic system (bronchial, mesenteric, and retroperitoneal glands excepted).....	171	150	210	.1	.1	.2
30	Genitourinary system.....	566	569	642	.4	.4	.5
31	Other organs.....	94	96	146	.1	.1	.1
32	Disseminated tuberculosis.....	1,241	1,237	1,637	1.0	1.0	1.4
	Acute.....	1,096	1,095	1,429	.9	.9	1.2
	Chronic.....	19	8	29	(1)	(1)	(1)
	Unspecified.....	126	134	179	.1	.1	.2
33	Leprosy.....	25	32	27	(1)	(1)	(1)
34	Syphilis.....	11,560	11,726	10,554	9.1	9.3	8.9
35	Gonococcus infection and other venereal diseases.....	853	1,051	1,087	.7	.8	.9
36	Purulent infection, septicemia (nonpuerperal).....	1,149	928	1,081	.9	.7	.9
37	Yellow fever.....						
38	Malaria.....	4,435	4,520	3,403	3.5	3.6	2.9
39	Other diseases due to protozoal parasites.....	78	52	43	.1	(1)	(1)
40	Ankylostomiasis.....	18	24	32	(1)	(1)	(1)
41	Hydatid cysts.....	21	26	23	(1)	(1)	(1)
	Liver.....	16	18	15	(1)	(1)	(1)
	Other organs.....	5	8	8	(1)	(1)	(1)
42	Other diseases caused by helminths.....	122	107	119	.1	.1	.1
43	Mycoses.....	267	287	237	.2	.2	.2

See footnotes at end of table.



*Deaths (exclusive of stillbirths) from each cause and death rates in the United States, 1930, 1934, and 1935—Continued*

International list No.	Cause of death	Number			Rate per 100,000 estimated population		
		1935	1934	1930	1935	1934	1930
	<b>I. INFECTIOUS AND PARASITIC DISEASES—Continued.</b>						
44	Other infectious and parasitic diseases.....	715	608	463	0.6	0.5	0.4
	Chicken-pox.....	193	177	152	.2	.1	.1
	German measles.....	148	47	21	.1	( <sup>1</sup> )	( <sup>1</sup> )
	Others under this title.....	374	384	290	.3	.3	.2
	<b>II. CANCERS AND OTHER TUMORS.....</b>	<b>144,065</b>	<b>140,771</b>	<b>120,956</b>	<b>113.0</b>	<b>111.2</b>	<b>102.1</b>
45-53	Cancer and other malignant tumors.....	137,649	134,428	115,265	107.9	106.2	97.3
45	Of the buccal cavity and pharynx.....	4,905	5,009	4,554	3.8	4.0	3.8
	Lip.....	727	712	586	.6	.6	.5
	Tongue.....	1,076	1,056	947	.8	.8	.8
	Mouth.....	550	555	439	.4	.4	.4
	Jaw.....	999	1,053	1,051	.8	.8	.9
	Other and unspecified parts of the buccal cavity.....	600	611	520	.5	.5	.4
	Pharynx.....	953	1,022	1,011	.7	.8	.9
46	Of the digestive tract and peritoneum.....	66,461	65,476	57,812	52.1	51.7	48.8
	Esophagus.....	2,256	2,243	1,896	1.8	1.8	1.6
	Stomach and duodenum.....	27,104	26,869	25,408	21.3	21.2	21.4
	Intestines (except duodenum, rectum, anus).....	14,465	14,105	10,996	11.2	11.1	9.3
	Rectum and anus.....	7,061	6,740	5,195	5.5	5.3	4.4
	Liver and biliary passages.....	10,479	10,668	10,388	8.2	8.4	8.8
	Pancreas.....	4,118	3,775	2,969	3.2	3.0	2.5
	Mesentery and peritoneum.....	950	999	895	.7	.8	.6
	Others under this title.....	28	77	65	( <sup>1</sup> )	.1	.1
47	Of the respiratory system.....	6,201	5,473	3,848	4.9	4.3	3.3
	Larynx.....	1,152	1,100	983	.9	.9	.8
	Lungs and pleura.....	4,356	3,877	2,653	3.4	3.1	2.2
	Other respiratory organs.....	693	496	212	.5	.4	.3
48	Of the uterus.....	15,853	15,635	14,132	12.4	12.3	11.9
49	Of other female genital organs.....	3,345	3,271	2,290	2.6	2.6	1.9
	Ovary and Fallopian tube.....	2,795	2,676	1,833	2.2	2.1	1.6
	Vagina and vulva.....	509	545	406	.4	.4	.3
	Other female genital organs.....	41	50	48	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
50	Of the breast.....	13,226	13,171	10,912	10.4	10.4	9.2
51	Of the male genitourinary organs.....	11,702	11,542	8,661	9.2	9.0	7.3
	Kidneys and suprarenals (male).....	1,178	1,149	924	.9	.9	.8
	Bladder (male).....	3,014	2,825	2,512	2.4	2.2	2.1
	Prostate.....	6,765	6,578	4,648	5.3	5.2	3.9
	Testes.....	412	452	270	.3	.4	.2
	Scrotum.....	34	30	30	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Other male genitourinary organs.....	299	308	277	.2	.2	.2
52	Of the skin.....	3,391	3,315	3,019	2.7	2.6	2.5
53	Of other or unspecified organs.....	12,565	11,736	10,037	9.9	9.3	8.5
	Kidneys and suprarenals (female).....	870	865	705	.7	.7	.6
	Bladder (female).....	1,485	1,351	1,172	1.2	1.1	1.0
	Brain.....	1,141	1,164	804	.9	.9	.7
	Bones (except jaw).....	1,764	1,832	1,611	1.4	1.4	1.4
	Other or unspecified organs.....	7,305	6,524	5,745	5.7	5.2	4.8
54	Nonmalignant tumors.....	4,063	4,500	3,734	3.2	3.6	3.2
	Ovary.....	151	183	96	.1	.1	.1
	Uterus.....	2,535	2,707	2,504	2.0	2.1	2.1
	Other female genital organs.....	9	8	13	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Brain.....	805	941	611	.6	.7	.5
	Other organs.....	563	661	610	.4	.5	.4
55	Tumors of which the nature is not specified.....	2,353	1,843	1,957	1.8	1.5	1.7
	Ovary.....	48	18	41	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Uterus.....	22	12	24	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Other female genital organs.....	2	3	5	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Brain.....	1,622	1,358	1,439	1.3	1.1	1.2
	Other organs.....	659	452	448	.5	.4	.4
	<b>III. RHEUMATIC DISEASES, NUTRITIONAL DISEASES, DISEASES OF THE ENDOCRINE GLANDS, AND OTHER GENERAL DISEASES.....</b>	<b>42,793</b>	<b>42,568</b>	<b>41,214</b>	<b>33.6</b>	<b>33.6</b>	<b>31.8</b>
56	Acute rheumatic fever.....	2,238	2,330	2,920	1.8	1.8	2.5
57	Chronic rheumatism, osteoarthritis.....	1,721	1,695	1,566	1.3	1.3	1.3
58	Gout.....	2	2	7	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )

See footnotes at end of table.

## Deaths (exclusive of stillbirths) from each cause and death rates in the United States, 1930, 1934, and 1935—Continued

International list No.	Cause of death	Number			Rate per 100,000 estimated population		
		1935	1934	1930	1935	1934	1930
	III. RHEUMATIC DISEASES, NUTRITIONAL DISEASES, DISEASES OF THE ENDOCRINE GLANDS, AND OTHER GENERAL DISEASES.....						
59	Diabetes mellitus.....	28,364	28,000	22,528	22.2	22.1	19.0
60	Scurvy.....	30	36	42	(1)	(1)	(1)
61	Beriberi.....	7	5	1	(1)	(1)	(1)
62	Pellagra.....	3,543	3,602	6,333	2.8	2.8	5.3
63	Rickets.....	261	292	537	.2	.2	.5
64	Osteomalacia.....	12	21	11	(1)	(1)	(1)
65	Diseases of the pituitary body.....	90	117	59	.1	.1	(1)
66	Diseases of thyroid and parathyroid glands.....	4,379	4,228	4,797	3.4	3.3	4.0
	Simple goiter.....	226	247	318	.2	.2	.3
	Exophthalmic goiter.....	3,624	3,502	4,004	2.8	2.8	3.4
	Myxedema and cretinism.....	273	255	162	.2	.2	.1
	Tetany.....	108	129	127	.1	.1	.1
	Others under this title.....	148	95	186	.1	.1	.2
67	Diseases of the thymus gland.....	1,323	1,369	1,538	1.0	1.1	1.3
68	Diseases of the adrenals (Addison's disease, not specified as tuberculous).....	379	347	306	.3	.3	.3
69	Other general diseases.....	444	524	567	.3	.4	.5
	IV. DISEASES OF THE BLOOD AND BLOOD-MAKING ORGANS.....	10,069	10,250	9,285	7.9	8.1	7.8
70	Hemorrhagic conditions.....	836	825	702	.7	.7	.6
	Primary purpura.....	582	534	594	.6	.4	.5
	Hemophilia.....	254	291	108	.2	.2	.1
71	Anemias.....	3,481	3,943	4,411	2.7	3.1	3.7
	Pernicious anemia.....	2,935	3,374	3,906	2.3	2.7	3.3
	Other anemias.....	546	569	503	.4	.4	.4
72	Leukemias and pseudoleukemias.....	5,186	4,915	3,756	4.1	3.9	3.2
	True leukemias.....	3,552	3,408	2,543	2.8	2.7	2.1
	Pseudoleukemias (Hodgkin's disease).....	1,634	1,512	1,213	1.3	1.2	1.0
73	Diseases of the spleen.....	409	430	328	.3	.3	.3
74	Other diseases of the blood and blood-making organs.....	157	137	38	.1	.1	(1)
	V. CHRONIC POISONINGS AND INTOXICATIONS.....	3,611	3,921	4,439	2.8	3.1	3.7
75	Alcoholism (acute or chronic).....	3,349	3,655	4,158	2.6	2.9	3.5
76	Chronic poisoning by other organic substances.....	106	123	153	.1	.1	.1
	Occupational.....	7	6	3	(1)	(1)	(1)
	Others under this title.....	99	117	150	.1	.1	.1
77	Chronic poisoning by mineral substances.....	156	143	128	.1	.1	.1
	Lead.....	130	118	101	.1	.1	.1
	Occupational (except lead).....	13	6	14	(1)	(1)	(1)
	Others under this title.....	13	19	13	(1)	(1)	(1)
	VI. DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE.....	135,065	134,365	132,841	105.9	106.1	112.1
78	Encephalitis (nonepidemic).....	1,527	1,527	1,396	1.2	1.2	1.2
79	Meningitis.....	2,763	2,560	3,048	2.2	1.9	2.6
	Simple meningitis.....	2,337	2,094	2,485	1.8	1.7	2.1
	Nonepidemic cerebrospinal meningitis.....	426	266	563	.3	.2	.5
80	Progressive locomotor ataxia (tabes dorsalis).....	942	1,151	1,306	.7	.9	1.1
81	Other diseases of the spinal cord.....	3,267	3,137	3,278	2.6	2.5	2.8
82	Cerebral hemorrhage, cerebral embolism and thrombosis.....	109,058	108,110	105,317	85.5	85.4	88.9
	Cerebral hemorrhage.....	96,988	97,148	95,308	76.0	76.7	80.4
	Cerebral embolism and thrombosis.....	7,375	6,392	4,678	5.8	5.0	3.9
	Softening of brain.....	690	720	660	.5	.6	.6
	Hemiplegia and other paralysis, cause unspecified.....	4,046	3,850	4,671	3.2	3.0	3.9
83	General paralysis of the insane.....	4,588	4,896	4,816	3.6	3.8	4.1
84	Dementia praecox and other psychoses.....	1,383	1,468	1,627	1.1	1.2	1.4
85	Epilepsy.....	2,743	2,913	3,080	2.2	2.3	2.6
86	Convulsions (under 5 years).....	764	774	1,164	.6	.6	1.0

See footnotes at end of table.

## Deaths (exclusive of stillbirths) from each cause and death rates in the United States, 1930, 1934, and 1935—Continued

International list No.	Cause of death	Number			Rate per 100,000 estimated population		
		1935	1934	1930	1935	1934	1930
	<b>VI. DISEASES OF THE NERVOUS SYSTEM AND OF THE ORGANS OF SPECIAL SENSE—Contd.</b>						
87	Other diseases of the nervous system.....	3,854	3,929	3,742	3.0	3.1	3.2
	Neuralgia and neuritis.....	230	239	204	.2	.2	.2
	Others under this title.....	3,624	3,690	3,448	2.8	2.9	2.9
88	Diseases of the organs of vision.....	64	91	99	.1	.1	.1
89	Diseases of the ear and mastoid process.....	4,112	4,100	3,968	3.2	3.2	3.3
	Diseases of ear.....	2,022	2,543	2,353	1.6	2.0	2.0
	Diseases of mastoid process.....	2,090	1,557	1,605	1.6	1.2	1.4
	<b>VII. DISEASES OF THE CIRCULATORY SYSTEM.....</b>	<b>340,786</b>	<b>333,296</b>	<b>281,287</b>	<b>267.2</b>	<b>263.2</b>	<b>237.4</b>
90	Pericarditis.....	740	709	1,040	.6	.6	.9
91	Acute endocarditis.....	3,519	3,574	3,913	2.8	2.8	3.2
	Specified as acute.....	2,956	2,983	3,158	2.3	2.4	2.7
	Unspecified (under 45 years).....	563	592	755	.4	.5	.6
92	Chronic endocarditis, valvular diseases.....	54,306	57,762	66,482	42.6	45.6	56.1
	Endocarditis, specified as chronic, and other valvular diseases.....	50,480	54,048	62,213	39.6	42.7	52.5
	Endocarditis, unspecified (45 years and over).....	3,826	3,714	4,269	3.0	2.9	3.6
93	Diseases of the myocardium.....	138,043	136,726	115,864	108.3	108.0	97.8
	Acute myocarditis.....	4,808	4,800	4,405	3.8	3.8	3.7
	Myocarditis, unspecified (under 45 years).....	1,095	1,221	1,793	.9	1.0	1.5
	Chronic myocarditis, myocardial degeneration.....	101,998	99,679	81,922	80.0	78.7	69.1
	Unspecified.....	30,142	31,026	27,744	23.6	24.5	23.4
94	Diseases of coronary arteries, angina pectoris.....	59,744	54,089	28,597	46.9	42.7	24.1
	Angina pectoris.....	19,182	19,922	19,159	15.0	15.7	18.2
	Diseases of coronary arteries.....	40,562	34,167	9,438	31.8	27.0	8.0
95	Other diseases of the heart.....	55,981	50,864	37,188	43.9	40.2	31.4
	Functional diseases of heart.....	789	878	747	.6	.7	.6
	Other and unspecified.....	55,192	49,986	36,441	43.3	39.5	30.8
96	Aneurysm (except of heart).....	2,440	2,393	2,119	1.9	1.9	1.8
97	Arteriosclerosis (coronary arteries excepted).....	21,549	22,696	21,868	16.9	17.9	18.5
98	Gangrene.....	857	900	1,094	.7	.7	.9
99	Other diseases of the arteries.....	1,602	1,684	1,459	1.3	1.3	1.2
100	Diseases of veins (varices, hemorrhoids, phlebitis, etc.).....	748	715	725	.6	.6	.6
101	Diseases of lymphatic system (lymphangitis, etc.).....	177	169	156	.1	.1	.1
102	Idiopathic anomalies of the blood pressure.....	778	743	518	.6	.6	.4
103	Other diseases of the circulatory system.....	302	272	264	.2	.2	.2
	<b>VIII. DISEASES OF THE RESPIRATORY SYSTEM.....</b>	<b>118,557</b>	<b>114,879</b>	<b>113,237</b>	<b>93.0</b>	<b>90.7</b>	<b>95.6</b>
104	Diseases of the nasal fossae and annexa.....	1,096	1,097	1,088	.9	.9	.9
	Diseases of nasal fossae.....	391	375	340	.3	.3	.3
	Others under this title.....	705	722	748	.6	.6	.6
105	Diseases of the larynx.....	474	522	477	.4	.4	.4
106	Bronchitis.....	3,966	4,145	4,992	3.1	3.3	4.2
	Acute.....	1,281	1,422	1,737	1.0	1.1	1.5
	Chronic.....	1,794	1,794	2,015	1.4	1.4	1.7
	Unspecified (under 5 years).....	246	250	436	.2	.2	.4
	Unspecified (5 years and over).....	645	679	804	.5	.5	.7
107	Bronchopneumonia (including capillary bronchitis).....	42,621	41,923	40,663	33.4	33.1	31.3
	Bronchopneumonia.....	42,288	41,520	40,131	33.2	32.8	33.9
	Capillary bronchitis.....	333	403	532	.3	.3	.4
108	Lobar pneumonia.....	57,658	54,794	53,810	45.2	43.3	45.4
109	Pneumonia, unspecified.....	4,116	3,856	4,184	3.2	3.0	3.5
110	Pleurisy.....	2,908	2,897	2,689	2.3	2.3	2.3
111	Congestion, edema, embolism, hemorrhagic infarct, thrombosis of lungs.....	2,222	2,051	1,935	1.7	1.6	1.6
	Pulmonary embolism and thrombosis.....	635	511	487	.5	.4	.4
	Others under this title.....	1,587	1,540	1,448	1.2	1.2	1.2
112	Asthma.....	1,861	1,983	1,954	1.5	1.6	1.6
113	Pulmonary emphysema.....	115	119	153	.1	.1	.1

See footnotes at end of table.

## Deaths (exclusive of stillbirths) from each cause and death rates in the United States, 1930, 1934, and 1935—Continued

International list No.	Cause of death	Number			Rate per 100,000 estimated population		
		1935	1934	1930	1935	1934	1930
	<b>VIII. DISEASES OF THE RESPIRATORY SYSTEM—Continued.</b>						
114	Other diseases of the respiratory system (tuberculosis excepted).....	1,520	1,492	1,292	1.2	1.2	1.1
	Chronic interstitial pneumonia, including occupational diseases of respiratory system.....	863	864	271	.8	.8	.2
	Others, including gangrene of lung.....	1,157	1,128	1,021	.9	.9	.9
	<b>IX. DISEASES OF THE DIGESTIVE SYSTEM.....</b>	89,659	95,961	101,756	70.3	75.8	85.9
115	Diseases of buccal cavity and annexe and of pharynx, tonsils.....	5,835	5,970	5,673	4.6	4.7	4.8
	Diseases of pharynx and tonsils.....	4,922	4,994	4,743	3.9	3.9	4.0
	Others under this title.....	912	976	930	.7	.8	.8
116	Diseases of esophagus.....	217	169	155	.2	.1	.1
117	Ulcer of stomach and duodenum.....	8,430	7,690	7,360	6.6	6.1	6.2
	Ulcer of stomach.....	5,839	5,323	5,046	4.6	4.2	4.3
	Ulcer of duodenum.....	2,591	2,367	2,314	2.0	1.9	2.0
118	Other diseases of stomach (cancer excepted).....	2,355	2,650	4,528	2.6	2.9	3.8
119	Diarrhea and enteritis (under 2 years).....	12,204	17,019	23,204	10.4	13.4	19.7
120	Diarrhea and enteritis (2 years and over).....	4,760	6,192	7,868	3.7	4.9	6.7
121	Appendicitis.....	16,142	18,129	18,100	12.7	14.3	15.3
122	Hernia, intestinal obstruction.....	13,161	13,023	12,176	10.3	10.3	10.8
	Hernia.....	5,845	5,093	4,550	4.2	4.0	3.8
	Intestinal obstruction.....	7,316	7,930	7,626	6.1	6.3	6.4
123	Other diseases of intestines.....	1,584	1,455	1,263	1.2	1.1	1.1
124	Cirrhosis of liver.....	10,063	9,733	8,583	7.9	7.7	7.2
	Specified as alcoholic.....	797	773	568	.6	.6	.5
	Not specified as alcoholic.....	9,266	8,960	8,015	7.3	7.1	6.8
125	Other diseases of the liver (including yellow atrophy of liver).....	1,642	1,800	1,836	1.3	1.4	1.5
	Yellow atrophy of liver.....	473	511	560	.4	.4	.5
	Others under this title.....	1,169	1,289	1,246	.9	1.0	1.1
126	Biliary calculi.....	4,543	4,749	4,566	3.6	3.8	3.9
127	Other diseases of gall bladder, biliary passages.....	4,034	4,068	3,989	3.2	3.2	3.3
128	Diseases of pancreas.....	769	746	699	.6	.6	.6
129	Peritonitis, cause not specified.....	1,960	1,578	1,687	1.5	1.2	1.4
	<b>X. DISEASES OF THE GENITOURINARY SYSTEM.....</b>	122,707	125,171	123,650	96.2	98.9	104.4
130	Acute nephritis (including unspecified under 10 years).....	4,457	4,506	5,178	3.5	3.6	4.4
131	Chronic nephritis.....	92,272	93,922	92,355	72.4	74.2	78.0
132	Nephritis, unspecified (10 years and over).....	6,787	8,154	10,086	5.3	6.4	8.5
133	Other diseases of kidneys and ureters (puerperal diseases excepted).....	3,893	3,730	3,506	3.1	2.9	3.0
134	Calculi of urinary passages.....	1,430	1,372	1,009	1.1	1.1	.9
135	Diseases of bladder (tumor excepted).....	764	740	853	.6	.6	.7
136	Diseases of urethra, urinary abscess, etc.....	517	468	432	.4	.4	.4
	Stricture of urethra.....	322	311	297	.3	.2	.3
	Others under this title.....	195	157	135	.2	.1	.1
137	Disease of prostate.....	8,477	8,357	6,464	6.6	6.6	5.5
138	Diseases of male genital organs, not specified as venereal.....	115	135	106	.1	.1	.1
139	Diseases of female genital organs, not specified as venereal.....	3,995	3,785	3,661	3.1	3.0	3.1
	Cysts of ovary.....	684	754	776	.6	.6	.7
	Other diseases of ovaries, diseases of tubes and parametrium.....	2,219	1,993	2,052	1.7	1.6	1.7
	Diseases of uterus.....	967	943	756	.8	.7	.6
	Nonpuerperal diseases of breast (cancer excepted).....	30	16	19	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Others under this title.....	95	79	58	.1	.1	( <sup>1</sup> )

See footnotes at end of table.

*Deaths (exclusive of stillbirths) from each cause and death rates in the United States, 1930, 1934, and 1935—Continued*

International list No.	Cause of death	Number			Rate per 100,000 estimated population		
		1935	1934	1930	1935	1934	1930
	<b>XI. DISEASES OF PREGNANCY, CHILDBIRTH, AND THE PUERPERAL STATE</b>	<b>12,544</b>	<b>12,859</b>	<b>15,165</b>	<b>9.8</b>	<b>10.2</b>	<b>12.8</b>
140	Abortion with septic conditions	2,167	2,204	2,009	1.7	1.7	1.7
141	Abortion without mention of septic conditions (to include hemorrhages)	602	570	685	.5	.5	.6
142	Ectopic gestation	545	571	606	.4	.5	.5
	Septic conditions specified	105	106	103	.1	.1	.1
	Septic conditions not mentioned	440	465	503	.3	.4	.4
143	Other accidents of pregnancy (not to include hemorrhages)	84	94	171	.1	.1	.1
144	Puerperal hemorrhage	1,370	1,404	1,545	1.1	1.1	1.3
	Placenta praevia	425	432	554	.3	.3	.5
	Other puerperal hemorrhages	945	972	991	.7	.8	.8
145	Puerperal septicemia and ectopic conditions (not specified as due to abortion)	2,902	2,808	3,430	2.3	2.2	2.9
	Puerperal septicemia and pyemia	2,897	2,800	3,411	2.3	2.2	2.9
	Puerperal tetanus	5	8	19	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
146	Puerperal albuminuria and eclampsia	2,229	2,431	3,655	1.7	1.9	3.1
147	Other toxemias of pregnancy	497	559	502	.4	.4	.4
148	Puerperal phlegmasia, alba dolens, embolus, sudden death (not specified as septic)	578	561	710	.5	.4	.6
149	Other accidents of childbirth	1,543	1,621	1,807	1.2	1.3	1.5
	Cesarean operation	336	416	441	.3	.8	.4
	Others under this title	1,207	1,205	1,366	.9	1.0	1.2
150	Other and unspecified conditions of puerperal state	27	36	45	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	<b>XII. DISEASES OF THE SKIN AND CELLULAR TISSUES</b>	<b>2,018</b>	<b>2,144</b>	<b>2,121</b>	<b>1.6</b>	<b>1.7</b>	<b>1.8</b>
151	Furuncle, carbuncle	585	605	624	.5	.5	.5
152	Phlegmon, acute abscess	728	766	771	.6	.6	.7
153	Other diseases of skin and annera, and of cellular tissue	705	773	726	.6	.6	.6
	<b>XIII. DISEASES OF THE BONES AND ORGANS OF LOCOMOTION</b>	<b>1,654</b>	<b>1,694</b>	<b>1,558</b>	<b>1.3</b>	<b>1.3</b>	<b>1.3</b>
154	Osteomyelitis	1,103	1,115	1,052	.9	.9	.9
155	Other diseases of the bones (tuberculosis excepted)	174	189	200	.1	.1	.2
156	Diseases of joints and other organs of locomotion	377	390	306	.3	.3	.3
	Diseases of joints (tuberculosis and rheumatism excepted)	282	277	244	.2	.2	.2
	Diseases of other organs of locomotion	95	113	62	.1	.1	.1
	<b>XIV. CONGENITAL MALFORMATIONS</b>	<b>11,840</b>	<b>12,640</b>	<b>13,280</b>	<b>9.3</b>	<b>10.0</b>	<b>11.2</b>
157	Congenital malformations	11,840	12,640	13,280	9.3	10.0	11.2
	Congenital hydrocephalus	1,667	1,653	1,607	1.3	1.3	1.4
	Spina bifida and meningocele	1,163	1,317	1,462	.9	1.0	1.2
	Congenital malformations of the heart	5,982	6,368	6,978	4.7	5.0	5.9
	Others under this title	3,028	3,302	3,233	2.4	2.6	2.7
	<b>XV. DISEASES OF EARLY INFANCY</b>	<b>51,214</b>	<b>54,348</b>	<b>58,966</b>	<b>40.2</b>	<b>42.9</b>	<b>49.8</b>
158	Congenital debility	3,613	4,223	4,700	2.8	3.3	4.0
159	Premature birth	33,147	35,302	37,433	26.0	27.7	31.6
160	Injury at birth	9,644	9,860	10,639	7.6	7.8	9.1
	Cesarean operation	321	376	240	.3	.3	.2
	Without Cesarean operation	9,323	9,484	10,699	7.3	7.5	8.9
161	Other diseases peculiar to early infancy	4,810	5,163	5,994	3.8	4.1	5.1
	Atelectasis	2,093	2,034	2,106	1.6	1.6	1.8
	Icterus of new-born	851	968	1,008	.7	.8	.9
	Sclerema	7	10	13	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
	Others under this title	1,859	2,151	2,867	1.5	1.7	2.4
162	<b>XVI. SENILITY</b>	<b>10,010</b>	<b>10,961</b>	<b>11,766</b>	<b>7.8</b>	<b>8.7</b>	<b>9.9</b>

See footnotes at end of table.

## Deaths (exclusive of stillbirths) from each cause and death rates in the United States, 1930, 1934, and 1935—Continued

International list No.	Cause of death	Number			Rate per 100,000 estimated population		
		1935	1934	1930	1935	1934	1930
	<b>XVII. VIOLENT AND ACCIDENTAL DEATHS</b>	<b>128,768</b>	<b>132,082</b>	<b>124,695</b>	<b>101.0</b>	<b>104.8</b>	<b>105.8</b>
163-171	<b>Suicide</b>	<b>18,214</b>	<b>18,828</b>	<b>18,551</b>	<b>14.3</b>	<b>14.9</b>	<b>15.7</b>
163	By solid or liquid poisons or by absorption of corrosive substances	2,852	2,980	3,056	2.2	2.3	2.6
	Arsenic	208	229	229	.2	.2	.2
	Hydrocyanic acid	332	302	131	.3	.2	.1
	Opium, morphine, laudanum	472	32	30	.4	(1)	(1)
	Strychnine	20	357	356	(1)	.8	.8
	Corrosive sublimate	330	354	436	.3	.8	.4
	Carbolic acid	323	562	775	.3	.4	.7
	Lysol	376	366	374	.3	.3	.3
	Other poisons or kind not stated	791	782	715	.6	.6	.6
164	By poisonous gas	2,395	2,574	2,579	1.9	1.9	2.2
165	By hanging or strangulation	3,309	3,517	3,281	2.7	2.8	2.8
166	By drowning	908	872	903	.7	.7	.8
167	By firearms	6,830	7,296	6,583	5.4	5.8	5.8
168	By cutting or piercing instruments	777	847	877	.6	.7	.7
169	By jumping from high places	606	633	604	.5	.5	.5
170	By crushing	163	147	167	.1	.1	.1
171	By other means	197	182	191	.2	.1	.2
172-175	<b>Homicide</b>	<b>10,587</b>	<b>12,065</b>	<b>10,617</b>	<b>8.3</b>	<b>9.5</b>	<b>9.0</b>
172	(Infanticide—murder of infants under 1 year)	184	187	134	.1	.1	.1
173	By firearms	6,506	7,702	7,190	5.1	6.1	6.1
174	By cutting or piercing instruments	2,018	2,122	1,615	1.6	1.7	1.4
175	By other means	2,063	2,231	1,812	1.6	1.8	1.5
176-198	<b>Accidental, other, or undefined</b>	<b>99,967</b>	<b>101,139</b>	<b>95,527</b>	<b>78.4</b>	<b>79.9</b>	<b>80.6</b>
176	Attack by venomous animals	211	147	104	.2	.1	.1
177	Poisoning by food	709	738	805	.6	.6	.7
178	Accidental absorption of poisonous gas	1,665	1,695	2,433	1.3	1.3	2.1
	Not associated with symbols 201-214	1,608	1,639	2,315	1.3	1.3	2.0
	Associated with symbols 201-214	57	56	118	(1)	(1)	.1
179	Other acute accidental poisonings (except gas)	1,411	1,417	1,770	1.1	1.1	1.5
	Wood alcohol	89	68	316	.1	.1	.3
	Denatured alcohol	149	74	187	.1	.1	.1
	Carbolic acid	42	44	60	(1)	(1)	.1
	Opium, morphine, laudanum	23	26	24	(1)	(1)	(1)
	Strychnine	82	113	143	.1	.1	.1
	Other poisons or kind not stated	1,026	1,092	1,085	.8	.9	.9
180	Conflagration	1,681	1,752	1,992	1.2	1.4	1.7
181	Accidental burns (except conflagration)	6,298	6,509	6,523	4.9	5.1	5.5
	Not associated with symbols 201-214	5,687	5,758	5,898	4.5	4.5	5.0
	Associated with symbols 201-214	606	751	625	.5	.6	.5
182	Accidental mechanical suffocation	1,230	1,124	1,152	1.0	.9	1.0
	Not associated with symbols 201-214	1,132	1,055	1,091	.9	.8	.9
	Associated with symbols 201-214	98	69	61	.1	.1	.1
183	Accidental drowning	7,108	7,326	7,450	5.6	5.8	6.3
	Not associated with symbols 201-214	5,855	6,006	6,641	4.6	4.7	5.6
	Associated with symbols 201-214	1,253	1,320	809	1.0	1.0	.7
184	Traumatism by firearms	2,854	3,023	3,120	2.2	2.4	2.6
185	Traumatism by cutting or piercing instruments	1,316	1,254	1,077	1.0	1.0	1.0
	Not associated with symbols 201-214	898	925	755	.7	.7	.6
	Associated with symbols 201-214	418	329	322	.3	.3	.3
186	Traumatism by fall, crushing, landslide	33,762	32,854	26,571	26.5	25.9	22.4
186a	By fall	24,520	23,828	20,030	19.2	18.8	16.9
	Not associated with symbols 201-214	21,400	20,762	17,390	16.8	16.4	14.7
	Associated with symbols 201-214	3,120	3,066	2,640	2.4	2.4	2.2

See footnotes at end of table.

*Deaths (exclusive of stillbirths) from each cause and death rates in the United States, 1930, 1934, and 1935—Continued*

International list No.	Cause of death	Number			Rate per 100,000 estimated population		
		1935	1934	1930	1935	1934	1930
	<b>XVII. VIOLENT AND ACCIDENTAL DEATHS—Continued</b>						
186b	By crushing, landslide.....	9,242	9,026	6,541	7.2	7.1	5.5
	Not associated with symbols 201-214.....	620	613	712	.5	.5	.6
	Associated with symbols 201-214.....	8,622	8,413	5,829	6.8	6.6	4.9
187	Cataclysm.....	617	117	117	.5	.1	.1
188	Injuries by animals.....	520	660	598	.4	.5	.5
189	Hunger and thirst.....	53	21	28	(1)	(1)	(1)
190	Excessive cold.....	397	437	337	.3	.3	.3
191	Excessive heat.....	728	3,250	1,487	.6	2.6	1.3
192	Lightning.....	362	442	359	.3	.3	.3
193	Accidents due to electric currents.....	676	723	967	.5	.6	.8
	Not associated with symbols 201-214.....	556	623	879	.4	.5	.7
	Associated with symbols 201-214.....	110	100	108	.1	.1	.1
194	Other accidents.....	38,120	37,483	38,461	29.9	29.6	32.5
194a	Foreign bodies.....	736	681	667	.6	.5	.6
	Not associated with symbols 201-214.....	736	681	667	.6	.5	.6
194b	Others under this title.....	37,384	36,802	37,794	29.3	29.1	31.9
	Not associated with symbols 201-214.....	5,012	4,558	4,891	3.9	3.6	4.1
	Associated with symbols 201-214.....	32,372	32,244	32,903	25.4	25.5	27.8
195	Violent deaths of unknown nature.....	160	5	8	.1	(1)	(1)
196	Wounds of war.....	3		6	(1)		(1)
198	Legal executions.....	191	162	142	.1	.1	.1
	<b>XVIII. ILL-DEFINED CAUSES OF DEATH</b>	20,552	20,929	24,864	16.1	16.5	21.0
199	Sudden death.....	1,908	2,004	2,400	1.5	1.6	2.0
200	Cause of death not specified or ill-defined.....	18,644	18,925	22,464	14.6	14.9	19.0
	Ill-defined.....	5,263	5,128	5,600	4.1	4.0	4.7
	Not specified or unknown.....	13,381	13,797	16,864	10.5	10.9	14.2
	<b>Supplemental classification <sup>1</sup></b>						
201	Accidents in mines and quarries.....	1,581	1,490	2,560	1.2	1.2	2.2
202	Accidents from agricultural machinery.....	367	226	314	.3	.2	.3
203	Elevator accidents.....	222	231	3-8	.2	.2	.3
204	Accidents from machinery used for recreation.....	22	14	17	(1)	(1)	(1)
205	Other machinery accidents.....	1,186	1,139	1,386	.9	.9	1.2
206	Railroad and automobile collisions.....	1,587	1,457	1,760	1.2	1.2	1.5
207	Other railroad accidents.....	3,819	3,789	4,012	3.0	3.0	3.4
208	Street car and automobile collisions.....	253	332	463	.2	.3	.4
209	Other street car accidents.....	512	552	711	.4	.4	.6
210	Automobile accidents (primary).....	34,183	33,980	29,080	26.8	26.8	24.5
211	Motorcycle accidents.....	346	332	375	.3	.3	.3
212	Other land transportation accidents.....	1,179	1,202	1,076	.9	.9	.9
213	Water transportation accidents.....	1,041	1,186	717	.8	.9	.6
214	Air transportation accidents.....	358	428	596	.3	.3	.5

\* Data for 1930 do not include Texas.

<sup>1</sup> Less than 1/10 of 1 per 100,000 estimated population.

<sup>2</sup> Deaths tabulated under International list numbers 178, 181, 182, 183, 185, 186a, 186b, 193, 194a, 194b, as "Associated with symbols 201-214," are retabulated in the supplemental classification. The detailed classification under numbers 201-214 is omitted here.

**DEATHS DURING WEEK ENDED APRIL 10, 1937**

(From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

	Week ended Apr. 10, 1937	Correspond- ing week, 1936
<b>Data from 86 large cities of the United States:</b>		
Total deaths.....	9,466	9,206
Average for 3 prior years.....	8,995	
Total deaths, first 14 weeks of year.....	142,237	136,899
Deaths under 1 year of age.....	601	596
Average for 3 prior years.....	620	
Deaths under 1 year of age, first 14 weeks of year.....	8,777	8,261
<b>Data from industrial insurance companies:</b>		
Policies in force.....	69,637,691	68,350,305
Number of death claims.....	14,956	12,900
Death claims per 1,000 policies in force, annual rate.....	11.2	9.9
Death claims per 1,000 policies, first 14 weeks of year, annual rate.....	11.5	11.9



# 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

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Apr. 17, 1937, and Apr. 18, 1936*

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936
<b>New England States:</b>								
Maine.....		2	10	13	9	117	0	0
New Hampshire.....				1	73	15	0	0
Vermont.....	8	3			1	598	0	0
Massachusetts.....	2	6			714	1,216	9	4
Rhode Island.....	2	1			211	78	1	1
Connecticut.....	1	2	9	6	517	104	0	0
<b>Middle Atlantic States:</b>								
New York.....	45	43	123	113	1,073	2,653	16	21
New Jersey.....	14	11	5	53	2,582	311	5	6
Pennsylvania.....	83	48			737	1,509	15	12
<b>East North Central States:</b>								
Ohio.....	21	21	147	173	900	360	14	52
Indiana.....	9	10	24	83	203	24	5	8
Illinois.....	80	85	83	54	209	31	8	19
Michigan.....	11	9	7	14	84	68	4	4
Wisconsin.....	3	1	60	71	24	94	1	2
<b>West North Central States:</b>								
Minnesota.....	8			1	20	520	1	2
Iowa.....	10	4	2	8	9	8	0	4
Missouri.....	20	25	103	532	31	19	1	6
North Dakota.....		8	22	7		2	1	0
South Dakota.....	1					15	1	1
Nebraska.....	1	6			70	93	0	0
Kansas.....	3	8	6	43	42	22	0	4
<b>South Atlantic States:</b>								
Delaware.....	2				60	6	0	0
Maryland.....	7	2	15	12	737	255	4	22
District of Columbia.....	4	13		1	94	96	3	5
Virginia.....	10	30		334	668	104	19	8
West Virginia.....	17	8	51	124	53	99	9	14
North Carolina.....	19	12	77	18	248	57	8	6
South Carolina.....	2	1	429	299	41	35	0	8
Georgia.....	9	4	247	180			4	1
Florida.....	9	5		51		13	18	8
<b>East South Central States:</b>								
Kentucky.....	5	7	34	262	315	54	13	33
Tennessee.....	6	5	154	427	18	63	2	8
Alabama.....	11	9	365	421	11	60	15	2
Mississippi.....	5	2					1	2

See footnotes at end of table.

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Apr. 17, 1937, and Apr. 18, 1936—Continued*

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936
<b>West South Central States:</b>								
Arkansas.....	1	6	82	1,040	6	1	0	
Louisiana.....	13	13	26	258	7	41	2	5
Oklahoma.....	8	10	133	538	61	16	3	7
Texas.....	42	34	763	592	1,011	418	6	7
<b>Mountain States:</b>								
Montana.....	2	2	7	33	6	1	1	
Idaho.....	3		38	7	24	19	2	2
Wyoming.....					2	7	0	0
Colorado.....	10	5			7	19	1	0
New Mexico.....	1	3	1	8	80	49	1	3
Arizona.....	1	6	30	119	186	144	1	0
Utah.....					23	31	0	1
<b>Pacific States:</b>								
Washington.....			1	6	54	451	1	3
Oregon.....		1	39	106	7	305	0	2
California.....	15	24	258	564	214	2,692	1	6
<b>Total.....</b>	<b>419</b>	<b>445</b>	<b>3,201</b>	<b>6,472</b>	<b>11,430</b>	<b>12,898</b>	<b>193</b>	<b>300</b>
<b>First 15 weeks of year.....</b>	<b>7,637</b>	<b>8,617</b>	<b>262,793</b>	<b>120,474</b>	<b>104,153</b>	<b>138,385</b>	<b>2,540</b>	<b>3,679</b>

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936
<b>New England States:</b>								
Maine.....	1	0	25	22	0	0	1	0
New Hampshire.....	0	0	14	4	0	0	0	0
Vermont.....	0	0	9	11	1	0	0	0
Massachusetts.....	0	0	308	253	0	0	1	0
Rhode Island.....	0	0	56	24	0	0	0	0
Connecticut.....	0	0	177	63	0	0	0	2
<b>Middle Atlantic States:</b>								
New York.....	3	1	1,034	965	1	0	8	7
New Jersey.....	0	0	214	427	0	0	2	0
Pennsylvania.....	1	1	1,077	746	0	0	8	2
<b>East North Central States:</b>								
Ohio.....	1	1	419	473	2	2	7	22
Indiana.....	0	0	218	294	14	7	1	1
Illinois.....	1	0	835	705	60	4	4	4
Michigan.....	2	2	720	320	13	1	6	1
Wisconsin.....	0	0	289	490	12	9	4	3
<b>West North Central States:</b>								
Minnesota.....	2	0	163	377	13	10	0	1
Iowa.....	0	0	287	220	48	26	3	1
Missouri.....	0	0	478	231	47	9	3	1
North Dakota.....	0	0	16	41	13	15	0	0
South Dakota.....	0	0	63	62	2	22	1	0
Nebraska.....	0	0	62	137	8	11	1	0
Kansas.....	1	0	401	386	37	24	0	0
<b>South Atlantic States:</b>								
Delaware.....	0	0	11	5	0	0	1	0
Maryland.....	0	0	50	71	0	0	0	0
District of Columbia.....	1	0	21	16	0	0	2	0
Virginia.....	0	0	19	42	0	2	2	3
West Virginia.....	3	0	56	47	0	0	4	6
North Carolina.....	0	1	28	10	0	0	3	1
South Carolina.....	1	0	3	3	0	1	4	3
Georgia.....	0	1	6	24	0	0	3	6
Florida.....	0	0	15	8	0	0	5	6

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Apr. 17, 1937 and Apr. 18, 1936—Continued*

Division and State	Pollomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936	Week ended Apr. 17, 1937	Week ended Apr. 18, 1936
<b>East South Central States:</b>								
Kentucky.....	1	0	57	79	2	1	4	6
Tennessee.....	1	0	25	24	0	0	6	1
Alabama.....	1	0	7	7	0	0	2	1
Mississippi.....	2	0	7	8	0	1	5	0
<b>West South Central States:</b>								
Arkansas.....	0	0	3	12	0	0	0	1
Louisiana.....	0	0	12	8	0	0	13	2
Oklahoma.....	0	0	33	53	7	0	1	2
Texas.....	3	0	208	59	11	0	15	6
<b>Mountain States:</b>								
Montana.....	0	0	29	76	9	15	1	1
Idaho.....	0	0	21	33	7	1	1	0
Wyoming.....	0	0	14	54	4	8	0	0
Colorado.....	0	0	33	94	15	2	0	0
New Mexico.....	0	0	29	88	0	0	1	0
Arizona.....	0	0	16	16	0	0	0	1
Utah.....	0	0	18	64	0	2	0	1
<b>Pacific States:</b>								
Washington.....	0	0	15	80	6	3	2	1
Oregon.....	1	0	35	56	15	22	1	1
California.....	4	4	213	263	18	6	4	12
<b>Total.....</b>	<b>30</b>	<b>11</b>	<b>7,859</b>	<b>7,546</b>	<b>365</b>	<b>204</b>	<b>130</b>	<b>106</b>
<b>First 15 weeks of year.....</b>	<b>336</b>	<b>249</b>	<b>103,233</b>	<b>118,216</b>	<b>4,698</b>	<b>3,323</b>	<b>1,644</b>	<b>1,580</b>

<sup>1</sup> New York City only.

<sup>2</sup> Week ended earlier than Saturday.

<sup>3</sup> Typhus fever, week ended Apr. 17, 1937, 24 cases, as follows: North Carolina, 1; South Carolina, 2; Georgia, 10; Alabama, 2; Texas, 9.

<sup>4</sup> Exclusive of Oklahoma City and Tulsa.

<sup>5</sup> Rocky Mountain spotted fever, week ended Apr. 17, 1937, Oregon, 1 case.

## 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	Menin- gococ- cus menin- gitis	Diph- theria	Influ- enza	Malar- ia	Mea- sles	Pel- lagra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<b>March 1937</b>										
Colorado.....	5	26	4	-----	26	-----	1	298	25	2
Hawaii Territory.....	-----	13	49	-----	2,806	-----	3	3	0	10
Maryland.....	28	40	233	1	3,839	1	1	177	0	7
Minnesota.....	8	57	12	-----	166	-----	0	767	62	4
Mississippi.....	12	11	14,489	1,605	1,912	205	4	29	0	5
Nevada.....	-----	-----	34	-----	114	-----	0	26	0	0
New Jersey.....	13	61	121	-----	12,279	-----	1	995	0	6
Ohio.....	51	95	806	2	1,829	-----	6	1,517	7	17
Pennsylvania.....	48	157	-----	-----	1,735	-----	2	3,663	0	18
Rhode Island.....	7	4	38	-----	1,867	-----	0	315	0	2

March 1937		March 1937—Continued		March 1937—Continued	
<b>Anthrax:</b>	<b>Cases</b>	<b>Hookworm disease:</b>		<b>Septic sore throat—Contd.</b>	
Mississippi.....	1	Hawaii Territory.....	9	Minnesota.....	7
New Jersey.....	1	Mississippi.....	276	Ohio.....	118
Pennsylvania.....	1	Impetigo contagiosa:		Rhode Island.....	9
<b>Chicken pox:</b>		Colorado.....	12	<b>Tetanus:</b>	
Colorado.....	204	Hawaii Territory.....	81	Hawaii Territory.....	2
Hawaii Territory.....	192	Maryland.....	15	Maryland.....	1
Maryland.....	752	<b>Jaundice, infectious:</b>		New Jersey.....	1
Minnesota.....	569	Hawaii Territory.....	7	<b>Trachoma:</b>	
Mississippi.....	722	<b>Lead poisoning:</b>		Colorado.....	1
Nevada.....	24	New Jersey.....	3	Hawaii Territory.....	1
New Jersey.....	2, 090	Ohio.....	21	Minnesota.....	1
Ohio.....	2, 853	<b>Leprosy:</b>		New Jersey.....	1
Pennsylvania.....	5, 233	Hawaii Territory.....	6	Ohio.....	3
Rhode Island.....	230	<b>Mumps:</b>		<b>Trichinosis:</b>	
<b>Conjunctivitis:</b>		Colorado.....	111	Minnesota.....	2
Hawaii Territory.....	1	Hawaii Territory.....	127	New Jersey.....	3
<b>Dengue:</b>		Maryland.....	1, 071	Ohio.....	1
Mississippi.....	1	Mississippi.....	1, 350	Pennsylvania.....	3
<b>Diarrhea:</b>		New Jersey.....	1, 646	<b>Tularaemia:</b>	
Maryland.....	5	Ohio.....	583	Minnesota.....	1
Ohio (under 2 years; enteritis included).....	5	Pennsylvania.....	3, 181	<b>Typhus fever:</b>	
<b>Dysentery:</b>		Rhode Island.....	48	Colorado.....	2
Colorado.....	3	<b>Ophthalmia neonatorum:</b>		Hawaii Territory.....	6
Hawaii Territory (amoebic).....	1	Maryland.....	1	<b>Undulant fever:</b>	
Maryland.....	5	Minnesota.....	1	Maryland.....	2
Minnesota (amoebic).....	3	Mississippi.....	5	Minnesota.....	4
Mississippi (amoebic).....	82	New Jersey.....	7	Mississippi.....	3
Mississippi (bacillary).....	288	Ohio.....	82	Nevada.....	1
New Jersey.....	1	<b>Paratyphoid fever:</b>		New Jersey.....	9
Pennsylvania (bacil- lary).....	2	Hawaii Territory.....	5	Ohio.....	2
<b>Encephalitis (epidemic or lethargic):</b>		Maryland.....	5	Pennsylvania.....	11
Maryland.....	1	<b>Puerperal septicemia:</b>		Rhode Island.....	4
New Jersey.....	2	Mississippi.....	6	<b>Vincent's infection:</b>	
Ohio.....	6	Ohio.....	2	Maryland.....	54
Pennsylvania.....	6	<b>Rabies in animals:</b>		<b>Whooping cough:</b>	
<b>German measles:</b>		Mississippi.....	35	Colorado.....	400
Maryland.....	65	New Jersey.....	10	Hawaii Territory.....	1
New Jersey.....	215	<b>Rabies in man:</b>		Maryland.....	417
Ohio.....	44	Ohio.....	1	Minnesota.....	592
Pennsylvania.....	242	<b>Rocky Mountain spotted fever:</b>		Mississippi.....	471
Rhode Island.....	55	Colorado.....	1	Nevada.....	6
		<b>Scabies:</b>		New Jersey.....	500
		Maryland.....	1	Ohio.....	1, 941
		<b>Septic sore throat:</b>		Pennsylvania.....	2, 457
		Colorado.....	2	Rhode Island.....	158
		Maryland.....	34		

## CASES OF VENEREAL DISEASES REPORTED FOR FEBRUARY 1937

These reports are published monthly for the information of health officers in order to furnish current data as to the prevalence of the venereal diseases. The figures are taken from reports received from State and city health officers. They are preliminary and are therefore subject to correction. It is hoped that the publication of these reports will stimulate more complete reporting of these diseases.

### Reports from States

	Syphilis		Gonorrhea	
	Cases reported during month	Monthly case rates per 10,000 population	Cases reported during month	Monthly case rates per 10,000 population
Alabama.....	1, 036	3. 66	327	1. 15
Arizona.....	46	1. 19	112	2. 90
Arkansas <sup>1</sup> .....	276	1. 38	162	. 81
California.....	1, 428	2. 53	1, 351	2. 40
Colorado <sup>1</sup> .....				
Connecticut.....	174	1. 01	105	. 61
Delaware.....	152	5. 94	40	1. 63
Dist. of Columbia.....	164	2. 76	130	2. 19
Florida <sup>1</sup> .....	42	. 26	25	. 15
Georgia.....	1, 286	3. 84	432	1. 29
Idaho.....	89	. 61	26	. 54
Illinois.....	1, 576	2. 02	1, 121	1. 43
Indiana.....	112	. 63	94	. 27
Iowa.....	214	. 84	188	. 74

See footnotes at end of table.

## Reports from States—Continued

	Syphilis		Gonorrhea	
	Cases reported during month	Monthly case rates per 10,000 population	Cases reported during month	Monthly case rates per 10,000 population
Kansas.....	137	0.74	49	0.37
Kentucky.....	166	.55	165	.56
Louisiana.....	182	.86	69	.28
Maine.....	35	.41	83	.96
Maryland.....	888	5.32	213	1.26
Massachusetts.....	500	1.16	429	.96
Michigan.....	728	1.56	445	.95
Minnesota.....	255	.97	225	.86
Mississippi.....	1,982	9.85	2,259	11.52
Missouri.....	346	.88	246	.63
Montana.....	31	.58	38	.72
Nebraska.....	56	.41	88	.28
Nevada <sup>1</sup> .....				
New Hampshire.....	12	.24	20	.40
New Jersey.....	536	1.25	200	.47
New Mexico.....	50	1.24	21	.52
New York.....	7,111	5.52	1,656	1.28
North Carolina.....	1,875	5.49	506	1.48
North Dakota.....	16	.23	42	.60
Ohio.....	1,028	1.53	290	.43
Oklahoma.....	251	1.00	171	.68
Oregon.....	81	.31	77	.76
Pennsylvania <sup>1</sup> .....	641	.64	145	.14
Rhode Island.....	106	1.59	61	.90
South Carolina.....	381	1.89	401	1.99
South Dakota.....	74	1.10	24	.36
Tennessee.....	614	2.11	297	1.02
Texas.....	265	.44	223	.37
Utah <sup>1</sup> .....				
Vermont.....	27	.72	20	.53
Virginia.....	554	2.10	233	.88
Washington.....	242	1.48	325	1.99
West Virginia.....	185	1.02	110	.61
Wisconsin <sup>1</sup> .....	26	.09	172	.59
Wyoming <sup>1</sup> .....				
Total.....	25,827	2.06	13,304	1.06

## Reports from cities of 200,000 population or over

Akron, Ohio.....	56	2.06	14	0.52
Atlanta, Ga.....	131	4.56	59	3.10
Baltimore, Md.....	502	6.06	143	1.73
Birmingham, Ala.....	125	4.43	62	2.20
Boston, Mass.....	250	3.16	148	1.87
Buffalo, N. Y.....	140	2.37	94	1.59
Chicago, Ill.....	955	2.68	777	2.18
Cincinnati, Ohio <sup>1</sup> .....				
Cleveland, Ohio <sup>1</sup> .....				
Columbus, Ohio.....	39	1.28	8	.26
Dallas, Tex.....	194	6.70	114	3.94
Dayton, Ohio <sup>1</sup> .....				
Denver, Colo.....	56	1.89	28	.94
Detroit, Mich. <sup>1</sup> .....				
Houston, Tex. <sup>1</sup> .....	125	3.73	26	.78
Indianapolis, Ind.....	29	.77	31	.62
Jersey City, N. J. <sup>1</sup> .....				
Kansas City, Mo.....	59	1.40	9	.21
Los Angeles, Calif.....	224	1.56	268	1.87
Louisville, Ky. <sup>1</sup> .....				
Memphis, Tenn.....	190	7.12	51	1.91
Milwaukee, Wis. <sup>1</sup> .....				
Minneapolis, Minn.....	80	1.64	85	1.75
Newark, N. J.....	239	5.16	83	1.79
New Orleans, La. <sup>1</sup> .....				
New York, N. Y.....	5,896	8.07	1,089	1.49
Oakland, Calif.....	42	1.39	38	1.25
Omaha, Nebr.....	16	.73	6	.27
Philadelphia, Pa. <sup>1</sup> .....				
Pittsburgh, Pa. <sup>1</sup> .....				
Portland, Oreg. <sup>1</sup> .....				

See footnotes at end of table.

## Reports from cities of 200,000 population or over—Continued

	Syphilis		Gonorrhea	
	Cases reported during month	Monthly case rates per 10,000 population	Cases reported during month	Monthly case rates per 10,000 population
Providence, R. I.	60	2.32	28	1.08
Rochester, N. Y.	63	1.57	30	.89
St. Louis, Mo.	165	1.97	115	1.33
St. Paul, Minn.	28	.99	23	.82
San Antonio, Tex. <sup>1</sup>				
San Francisco, Calif.	197	2.94	182	2.71
Seattle, Wash.	117	3.08	135	3.58
Syracuse, N. Y.	105	4.82	20	.92
Toledo, Ohio	77	2.53	26	.85
Washington, D. C. <sup>2</sup>	104	2.76	130	2.19

<sup>1</sup> Incomplete.<sup>2</sup> No report for current month.<sup>3</sup> Not reporting.<sup>4</sup> Includes only those cases of syphilis that enter the clinics conducted by State department of health.<sup>5</sup> Only cases of syphilis in the infectious stage are reported.<sup>6</sup> Reported by Jefferson Davis Hospital; physicians are not required to report venereal disease.<sup>7</sup> Reported by social hygiene clinic.

## WEEKLY REPORTS FROM CITIES

City reports for week ended Apr. 10, 1937

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. Weekly reports are received from about 700 cities, from which the data are tabulated and filed for reference.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Small-pox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Data for 90 cities:											
5-year average	225	388	106	7,729	855	2,650	24	426	25	1,524	-----
Current week <sup>1</sup>	138	240	98	3,453	866	2,630	51	405	14	1,560	-----
Maine:											
Portland	0	-----	0	1	2	9	0	0	2	1	28
New Hampshire:											
Concord	0	-----	0	0	3	0	0	0	0	0	11
Manchester	0	-----	0	0	0	0	0	0	0	0	5
Vermont:											
Barre	0	-----	0	0	0	0	0	0	0	3	2
Burlington	0	-----	0	0	0	0	0	0	0	0	17
Rutland	0	-----	1	1	1	1	0	1	0	4	12
Massachusetts:											
Boston	0	-----	0	17	45	72	0	11	0	73	272
Fall River	0	-----	2	34	2	1	0	0	0	5	18
Springfield	0	-----	0	3	1	9	0	1	0	12	39
Worcester	1	-----	0	129	5	5	0	2	0	38	-----
Rhode Island:											
Pawtucket	0	-----	0	8	0	2	0	0	0	0	31
Providence	0	-----	0	200	9	52	0	3	1	58	66
Connecticut:											
Bridgeport	0	-----	0	11	5	72	0	0	0	0	32
Hartford	1	-----	0	2	1	6	0	3	0	6	42
New Haven	0	-----	0	0	1	11	0	2	0	2	37
New York:											
Buffalo	0	-----	1	98	10	25	0	8	0	24	152
New York	25	-----	7	484	207	428	6	82	3	67	1,727
Rochester	0	-----	0	2	2	8	0	1	0	23	74
Syracuse	0	-----	0	5	6	43	0	0	0	43	64
New Jersey:											
Camden	3	-----	3	7	2	6	0	5	0	2	42
Newark											
Trenton	1	-----	0	2	4	6	0	2	0	2	45

<sup>1</sup> Figures for Newark, N. J., and Springfield, Ill., estimated; reports not received.

## City reports for week ended Apr. 10, 1937—Continued

State and city	Diph- theria cases	Influenza		Mea- sles cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths, all causes
		Cases	Deaths								
<b>Pennsylvania:</b>											
Philadelphia.....	6	9	5	24	41	305	0	22	0	76	584
Pittsburgh.....	8	7	5	93	34	54	0	11	0	19	207
Reading.....	0		3	176	3	12	0	1	0	8	20
Scranton.....	0			0		19	0		0	0	
<b>Ohio:</b>											
Cincinnati.....	3	3	2	118	20	24	0	14	0	8	163
Cleveland.....	2	15	4	73	29	77	0	14	0	72	208
Columbus.....	0	1	1	8	4	11	0	4	0	33	89
Toledo.....	1	4	2	113	8	8	0	6	0	41	79
<b>Indiana:</b>											
Anderson.....	0		1	0	2	8	0	0	0	4	10
Fort Wayne.....	0		2	0	5	0	0	1	0	0	36
Indianapolis.....	1		3	115	12	51	0	9	0	39	100
Muncie.....	0		0	0	4	4	0	0	0	0	12
South Bend.....	0		0	3	0	3	0	0	0	1	23
Terre Haute.....	1		0	0	0	0	0	0	0	0	15
<b>Illinois:</b>											
Alton.....	0		0	0	1	9	0	0	0	1	6
Chicago.....	11	17	4	42	56	323	1	38	0	67	732
Elgin.....	7		0	0	4	2	0	0	0	1	8
Moline.....	0		0	0	2	1	1	0	0	9	18
Springfield.....											
<b>Michigan:</b>											
Detroit.....	2	7	0	5	43	355	1	16	0	89	335
Flint.....	2		0	0	7	9	0	0	0	0	33
Grand Rapids.....	0		0	22	2	10	0	1	0	23	25
<b>Wisconsin:</b>											
Kenosha.....	0		0	0	0	2	0	0	0	2	11
Madison.....	0		0	0	0	12	0	0	0	8	24
Milwaukee.....	1		0	4	0	69	0	3	0	21	109
Racine.....	0		0	1	0	5	0	1	0	0	16
Superior.....	0		0	0	0	5	0	0	0	16	8
<b>Minnesota:</b>											
Duluth.....	0		0	1	4	8	0	1	0	8	27
Minneapolis.....	1		2	4	3	38	0	4	0	52	86
St. Paul.....	0	1	1	1	7	7	0	2	0	139	85
<b>Iowa:</b>											
Cedar Rapids.....	1			1		3	0		0	0	
Davenport.....	0			0		1	0		0	0	
Des Moines.....	0			0		42	0		0	0	33
Sioux City.....	0			0		20	0		0	1	
Waterloo.....	1			1		11	0		0	7	
<b>Missouri:</b>											
Kansas City.....	1	1	0	0	21	92	0	0	0	24	113
St. Joseph.....	1		0	0	3	24	29	1	0	0	31
St. Louis.....	13	1	1	5	14	118	0	7	0	75	205
<b>North Dakota:</b>											
Fargo.....	0		0	0	0	4	3	2	0	0	12
Grand Forks.....	0			0		0	3		0	3	
Minot.....	0		0	0		0	0		0	0	6
<b>South Dakota:</b>											
Aberdeen.....	0			0		10	0		0	0	
Sioux Falls.....	0		0	0	0	0	0	0	0	0	6
<b>Nebraska:</b>											
Omaha.....	0		0	0	10	20	0	2	0	22	62
<b>Kansas:</b>											
Lawrence.....	0		0	0	0	0	0	0	0	0	
Topeka.....	0		0	0	2	14	0	0	0	0	17
Wichita.....	0		0	19	3	6	4	1	0	13	25
<b>Delaware:</b>											
Wilmington.....	2		0	2	2	2	0	0	0	2	34
<b>Maryland:</b>											
Baltimore.....	8	8	2	658	37	21	0	12	0	57	251
Cumberland.....	0		0	0	1	2	0	0	0	0	11
Frederick.....	0		0	12	1	1	0	1	0	0	4
<b>District of Colum- bia:</b>											
Washington.....	4	3	3	116	15	11	0	9	1	10	163
<b>Virginia:</b>											
Lynchburg.....	0		0	1	1	0	0	0	0	1	18
Norfolk.....	0	1	1	2	6	2	0	3	0	2	44
Richmond.....	0		0	1	5	1	0	2	1	0	46
<b>West Virginia:</b>											
Charleston.....	2		0	2	7	4	0	1	1	0	32
Huntington.....	0			0			0		0	0	
Wheeling.....	0		0	2	2	4	0	0	0	3	23

## City reports for week ended Apr. 10, 1937—Continued

State and city	Diph- theria cases	Influenza		Meas- les cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths all causes
		Cases	Deaths								
North Carolina:											
Raleigh.....	0	-----	0	0	2	0	0	0	0	0	12
Wilmington.....	0	-----	0	0	5	0	0	0	1	0	11
Winston-Salem.....	0	1	0	1	1	2	0	0	0	7	14
South Carolina:											
Charleston.....	1	41	1	0	4	0	0	1	0	0	20
Columbia.....	0	-----	0	0	3	0	0	0	0	0	11
Greenville.....	0	-----	0	0	0	1	0	0	0	0	3
Georgia:											
Atlanta.....	3	19	5	0	0	5	0	5	0	4	95
Brunswick.....	0	-----	0	0	0	0	0	0	0	2	5
Savannah.....	0	15	2	0	1	0	0	0	0	0	42
Florida:											
Miami.....	0	5	2	2	2	1	0	2	1	0	45
Tampa.....	0	2	1	1	3	2	0	1	0	0	25
Kentucky:											
Ashland.....	0	-----	1	57	5	0	0	0	0	0	29
Covington.....	0	-----	0	8	2	1	0	1	0	0	12
Lexington.....	0	-----	0	10	2	0	0	2	0	15	25
Louisville.....	0	4	3	4	17	17	0	5	0	25	68
Tennessee:											
Knoxville.....	0	-----	1	0	3	1	0	1	0	0	27
Memphis.....	1	-----	5	1	10	4	0	6	1	35	84
Nashville.....	0	-----	4	0	8	4	0	3	0	12	54
Alabama:											
Birmingham.....	2	13	3	2	8	4	0	6	0	2	104
Mobile.....	1	-----	2	0	5	3	0	2	0	2	25
Montgomery.....	0	3	-----	0	-----	0	0	-----	0	4	-----
Arkansas:											
Fort Smith.....	0	-----	-----	0	-----	0	0	-----	0	0	-----
Little Rock.....	0	-----	1	0	1	3	0	2	1	0	4
Louisiana:											
Lake Charles.....	0	-----	-----	0	2	0	0	-----	2	0	8
New Orleans.....	4	9	6	1	17	8	0	13	0	9	168
Shreveport.....	0	-----	1	0	4	0	0	2	0	2	29
Oklahoma:											
Muskogee.....	0	-----	-----	0	-----	0	0	-----	0	0	-----
Oklahoma City.....	0	10	0	0	15	0	0	2	0	6	52
Tulsa.....	0	-----	-----	2	0	6	0	-----	1	0	-----
Texas:											
Dallas.....	3	4	4	68	10	13	0	1	0	29	71
Fort Worth.....	0	-----	0	39	7	8	0	2	0	5	35
Galveston.....	0	-----	0	0	4	0	0	0	0	0	17
Houston.....	6	-----	2	0	9	9	9	2	0	0	89
San Antonio.....	0	-----	2	15	7	1	0	11	1	3	77
Montana:											
Billings.....	0	-----	0	1	0	0	1	0	0	0	5
Great Falls.....	0	-----	0	0	1	2	0	0	0	1	10
Helena.....	0	-----	0	11	0	2	0	0	0	0	2
Missoula.....	0	-----	0	0	0	0	0	0	1	0	2
Idaho:											
Boise.....	0	-----	0	0	1	0	0	0	0	0	10
Colorado:											
Colorado Springs.....	1	-----	0	0	2	7	0	2	0	6	17
Denver.....	4	-----	2	4	3	16	0	2	0	21	88
Pueblo.....	0	-----	0	0	1	2	0	0	0	1	7
New Mexico:											
Albuquerque.....	0	-----	0	0	0	0	0	6	0	0	16
Utah:											
Salt Lake City.....	2	-----	0	23	0	11	0	3	0	9	36
Washington:											
Seattle.....	2	-----	1	7	5	6	1	3	0	20	122
Spokane.....	0	2	2	2	3	1	1	1	0	9	36
Tacoma.....	0	-----	0	0	1	4	0	0	0	0	41
Oregon:											
Portland.....	0	5	1	1	6	13	5	1	0	2	88
Salem.....	0	1	-----	0	-----	1	0	-----	0	1	-----
California:											
Los Angeles.....	10	23	1	23	20	25	9	24	0	103	358
Sacramento.....	2	-----	0	4	2	7	0	2	0	1	27
San Francisco.....	1	3	1	1	12	17	0	11	0	26	136



## City reports for week ended Apr. 10, 1937—Continued

State and city	Meningococcus meningitis		Pollo-mye-litis cases	State and city	Meningococcus meningitis		Pollo-mye-litis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				Virginia:			
Boston.....	5	4	0	Richmond.....	2	1	0
Rhode Island:				North Carolina:			
Providence.....	1	2	0	Wilmington.....	2	0	0
New York:				South Carolina:			
New York.....	5	4	2	Greenville.....	0	1	0
Syracuse.....	3	1	0	Georgia:			
Pennsylvania:				Atlanta.....	1	1	0
Philadelphia.....	4	1	0	Tennessee:			
Pittsburgh.....	2	1	0	Knorrville.....	3	0	0
Reading.....	0	0	1	Memphis.....	0	1	0
Ohio:				Alabama:			
Cincinnati.....	2	1	0	Birmingham.....	3	2	0
Cleveland.....	1	2	0	Mobile.....	2	0	0
Indiana:				Louisiana:			
Indianapolis.....	0	1	0	Shreveport.....	0	2	0
Muncie.....	1	1	0	Oklahoma:			
Illinois:				Oklahoma City.....	1	0	0
Chicago.....	0	1	0	Tulsa.....	0	0	1
Michigan:				Texas:			
Detroit.....	2	2	0	San Antonio.....	0	0	1
Missouri:				Montana:			
Kansas City.....	1	0	0	Missoula.....	1	0	0
Nebraska:				Utah:			
Omaha.....	1	0	0	Salt Lake City.....	0	0	1
Maryland:				California:			
Baltimore.....	5	2	0	Los Angeles.....	1	2	1
District of Columbia:				Sacramento.....	1	0	0
Washington.....	2	1	0	San Francisco.....	0	1	0

*Encephalitis, epidemic or lethargic*.—Cases: New York, 4; Cleveland, 1; Chicago, 1; Washington, 2; Mobile, 1.

*Pellagra*.—Cases: Worcester, 1; Charleston, S. C., 3; Savannah, 5; New Orleans, 1; Dallas, 1; Los Angeles, 1.

*Typhus fever*.—Cases: Charleston, S. C., 2; Galveston, 2.

## FOREIGN AND INSULAR

### CUBA

*Provinces—Notifiable diseases—4 weeks ended April 3, 1937.*—During the 4 weeks ended April 3, 1937, cases of certain notifiable diseases were reported in the Provinces of Cuba, as follows:

Disease	Pinar del Rio	Habana	Matan- zas	Santa Clara	Cama- gney	Oriente	Total
Cancer.....	2			13	1	1	17
Chicken pox.....		4	1	39		5	49
Diphtheria.....	1	1			2	1	5
Hookworm disease.....	1			1			2
Leprosy.....		3		1	2	2	8
Malaria.....	59	30	14	118	90	219	530
Measles.....	37	2	10			3	52
Poliomyelitis.....	1	1					2
Scarlet fever.....		1					1
Tuberculosis.....	50	21	41	52	32	27	223
Typhoid fever.....	10	37	6	54	11	26	144

### VIRGIN ISLANDS

*Notifiable diseases—January–March 1937.*—During the months of January, February, and March, 1937, cases of certain notifiable diseases were reported in the Virgin Islands as follows:

Disease	Janu- ary	Febru- ary	March	Disease	Janu- ary	Febru- ary	March
Chicken pox.....	1	3		Mumps.....	1	54	50
Dengue.....	1	3		Pellagra.....		3	1
Erysipelas.....			2	Pneumonia.....		4	8
Gonorrhea.....	9	8	7	Schistosomiasis.....		2	2
Hookworm disease.....		4	6	Syphilis.....	8	12	43
Leprosy.....	1	1		Tetanus.....			4
Malaria.....	163	95	164	Tuberculosis.....	3	3	3

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

From medical officers of the Public Health Service, American consuls, International Office of Public Health, Pan-American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following table must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

## CHOLERA

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

Place	Aug. 30- Sept. 26, 1936	Sept. 27- Oct. 31, 1936	Nov. 1-28, 1936	Nov. 29- Dec. 26, 1936	Week ended—												
					January 1937					February 1937					March 1937		
					2	9	16	23	30	6	13	20	27	6	13	20	27
Afghanistan.....																	
Ceylon: Batticaloa.....		P 3															
India.....	19,883	20,423	23,017	17,965													
	9,785	9,520	11,747	9,506	4,921	4,585	3,817	3,742	3,117	2,839	1,778	1,473	1,646				
Assam.....	289	368	710	664	2,733	2,690	2,118	2,115	1,656	1,559	1,026	821	899				
	158	184	315	315	343	102	87	44	39	82	34	29	52	62	64	101	167
Bassein.....				315	191	67	30	19	23	30	19	12	19	24	26	42	60
Bombay Presidency.....	2,970	4,281	2,359	2,637	283	83	76	76	43								8
	1,378	1,575	1,120	1,467	151	64	43										19
Bombay.....	11	2															7
Calcutta.....	54	73	61	61	17	11	18	23	19	26	14	26	21	16	21	35	34
Central Provinces and Berar.....	4,363	4,239	922	567	52	69	3		1	1				2	1	1	3
Chittagong.....	6	2		11	2												
Madras Presidency.....	4,607	8,271	10,204	5,588	2,098	2,008	2,302	2,302	2,162	1,986	1,195	643	692				
	2,336	3,143	5,161	2,885	935	1,127	1,192	1,350	1,132	1,081	677	371	385				
Madras.....	1	21	57	60	21	21	11	14	6	6	9	12	3		1	2	2
	8	6	12	21	8	10	6	4	8	2	2	4	1				
	9	21	11	11	4	11	4	1	1	3				1		1	
Nagapatam.....	6		7	7	4	7	1										
Northwest Frontier Province.....			84	7													
Orissa Province.....			155	994													
Punjab.....	169	18	7														
Rangoon.....		4	4	2													
Sind State.....																	
Tuticorin.....	38																
Tuticorin.....			12	3													
India (French):																	
Chanderagor Territory.....				5	5	3											
Karikal Province.....	25	69	4	96	23	22	15	26	1								
Pondichery Province.....	4		10						10	6	6	5	5	1	1	2	2

1 Suspected.  
2 Imported.



## PLAGUE †

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

Place	Week ended—													
	January 1937				February 1937				March 1937					
	2	9	16	23	30	6	13	20	27	6	13	20	27	
Algeria:														
Algiers.....														
Plague-infected rats.....														
Oran Department.....														
Argentina. (See table below.)														
Belgian Congo.....														
Brazil. (See table below.)														
British East Africa:														
Kenya.....														
Tanganyika.....														
Uganda.....														
Ceylon:														
Coleombo.....														
China: Plague-infected rats.....														
Fukien Province.†														
Hainan Island.....														
Dutch East Indies: Java and Madura.....														
Ecuador (see also table below):														
Alaus.....														
Bahoyo.....														
Plague-infected rats.....														
Belasda del Morro.....														
Guayaquil.....														
Plague-infected rats.....														
Playas.....														

† Including plague in the United States and its possessions.

‡ Suspected.

\* For the week ended Apr. 3, 1937, 130 deaths from plague were reported in Fukien Province, China.





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

## PLAGUE—Continued

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

Place	September 1936	October 1936	November 1936	December 1936	January 1937	February 1937	Place	September 1936	October 1936	November 1936	December 1936	January 1937	February 1937
Argentina:							Indochina (see also table above):						
Buenos Aires—							Cambodia.....				1		
Plague-infected rats.....		4					Cochinchina.....				176	1	
Catamarca Province.....		1					Madagascar (central region).....	104	160	182	167	170	219
Cordoba Province.....			4	5			Peru.....	95	154	174	161	161	199
Salta Province.....					2		Cajamarca Department.....	8	16	33	16	23	23
San Luis Province.....				1			Lambayeque Department.....		1	3			
Santiago del Estero Province.....	4						Libertad Department.....	3	6	19	14	15	12
Tucuman Province.....	11	6			P	5	Lima Department.....	2	9	2	1	4	5
Bolivia: Chuquisaca Department.....							Galles: Plague infected rats.....	P					
Brasil:							Lima City.....						1
Oceania:							Pura Department.....	2				2	2
Paraguay State.....					1		Union of South Africa (see also table above).....	21	11	5	2	2	
Paraguay State.....					4								
Ecuador (see also table above):													
Manabí.....													
Rio de Janeiro.....													
Manta.....													

\* Includes 1 case of pneumonic plague.

11 Pneumonic plague.

12 Includes 4 cases of pneumonic plague.

13 Includes 66 cases of pneumonic plague.



## SMALLPOX

Place	Week ended—															
	January 1937						February 1937						March 1937			
	2	9	16	23	30		6	13	20	27		6	13	20	27	
Algeria:																
Algiers Department.....																
Oran Department.....				2								2				
Angola. (See table below.)																
Argentina. (See table below.)																
Belgian Congo. (See table below.)																
Bolivia. (See table below.)																
Brazil:																
Bahia.....	99		99													
Porto Alegre (elastirim).....	1		4													
Pacific (elastirim).....			3													
Rio de Janeiro.....																
British East Africa: Tanganyika.....	74	453	207													
Canada:																
Quebec.....																
British Columbia.....			4													
Saskatchewan.....																
Ceylon: Colombo.....		1														
China:																
Amoy.....																
Canton.....																
Dairen.....																
Foochow.....	P		P													
Hankow.....	1															
Hankow.....																
Hong Kong.....	1															
Macao.....																
Nanking.....																
Shanghai.....																
Tientsin.....																
Chosen. (See table below.)																
Colombia.....	176	84														
Barranquilla.....	1															
Dahomey. (See table below.)																
Dutch East Indies: Java—Surabaya.....																
Ecuador: Guayaquil.....																

1 For 2 weeks.

: For 3 weeks.

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

## SMALLPOX—Continued

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

Place	Aug. 30- Sept. 26, 1936	Sept. 27- Oct. 31, 1936	Nov. 1-28, 1936	Nov. 29- Dec. 26, 1936	Week ended—									
					January 1937					February 1937				
					2	9	16	23	30	6	13	20	27	March 1937 6 13 20 27
Egypt:														
Alexandria.....	C													
Qena Province.....	C													
Eritrea (see also table below).....	C		1											
Ethiopia.....	C												3	102
Finland. (See table below.).....	C		13											
France. (See table below.).....														
Gambia:														
Bathurst.....	C													
MacCarthy Island.....	C													
Great Britain: England and Wales—														
Derby.....	C													
Lancaster—Fallsworth.....	C													
London and Great Towns (Oldham).....	C		1			2								
Ripley.....	C													
Greece Salonika.....	C	40	34	38	10						5	5	5	6
Guatemala. (See table below.).....	C													
India:														
Bombay:														
Assam.....	C	3,413	3,559	4,605	1,638	2,118	2,263	2,552	3,418	3,492	3,835	3,016		
Bassein.....	D	886	968	1,136	400	584	543	570	799	742	799	908	770	
Bombay Presidency.....	C	70	64	36	20	47	64	44	37	47	78	60	35	49
Assam.....	C	258	183	116	170	34	57	102		217	242			145
Bombay.....	C	46	41	27	30	15	9	13		24	36			23
Bombay.....	D	17	11	3	7	4	3	2	10	8	17	11	13	13
Calcutta.....	D	14	6	3	3	5	1	3	4	6	6	7	9	16
Central Provinces and Berar.....	D	6	12	8	9	5	4	5	8	13	17	25	31	10
Chittagong.....	D	8	7	2	7	1	2	3	4	7	7	11	16	21
Cochin.....	D	70	46	38	115	6	36	21	89	83	97	81	68	76
Cochin.....	C			2	10	48	46	38	48	67	62	28	51	24
Karachi.....	C			1	8	2	10	11	9	8	9	14	18	20
Madras Presidency.....	C	442	161	298	71	131	168	157	144	188	228	163	74	7
Madras.....	D	96	96	59	37	11	34	27	32	27	26	31	15	15
Moulmein.....	D	3	1	3	3				2	4	6	13	8	3
Northwest Frontier Province.....	C	12	3	12	31	12	13	10	13	14	19	16	15	10
Orissa Province.....	C	22	14	15	57	20	11	35	24	35	12	27	23	11
Punjab.....	C	65	77	294	499	130	146	187	81	226	289	275	269	237
Punjab.....	C					117	111	109	101	95	168	80	147	156







## TYPHUS FEVER—Continued

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

**1 For 2 weeks.**

Place	Septem- ber 1936	October 1936	Novem- ber 1936	Decem- ber 1936	January 1937	Febru- ary 1937
Bolivia.....						
Bulgaria.....						
China: Manchuria—Harbin.....	4		10	19	24	26
Chosen.....	24	24	1	7	8	
Czechoslovakia.....	1		30	28	88	
Finland.....	1			3	15	1
France.....						
Greece (see also table above).....			1	1		
Guatemala.....	9	11	11	2	7	
Lithuania.....	38	17	23	28	29	
Latvia.....	1	2	3	3	13	
Mexico (see also table above):						
Agua Calientes State: Agua Calientes.....	1	2				
Chihuahua State.....	1					
Jalisco State: Guadalajara.....	1					
Mexico State.....	4	18				
Mexico, D. F.....	21	11				
Mexico City.....	3	7	2	5	6	6
Mexico—Continued.						
Oaxaca State.....						
Puebla State: Puebla.....	2					
Queretaro State.....	6					
San Luis Potosi State: San Luis Potosi.....	1					
Morocco (see also table above).....	1					
Peru.....	48					
Portugal.....	2					
Rumania.....	25					
Turkey.....	27					
Isarabul.....	1					
Union of South Africa:						
Cape Province.....	43					
Natal.....	7					
Orange Free State.....	14					
Transvaal.....	1					
Yugoslavia.....	6					

Place	Septem- ber 1936	October 1936	Novem- ber 1936	Decem- ber 1936	January 1937	Febru- ary 1937
Mexico—Continued.						
Oaxaca State.....	2	2				
Puebla State: Puebla.....	6	2				
Queretaro State.....	1	3				
San Luis Potosi State: San Luis Potosi.....	1	1	5	7		
Morocco (see also table above).....			1	2	11	22
Peru.....	48	80	60	52		
Portugal.....	2					
Rumania.....	25	60	178	380	941	1,018
Turkey.....	27	21	18	21	24	50
Isarabul.....	1	3	4	1	7	3
Union of South Africa:						
Cape Province.....	43	75	74	61	52	
Natal.....	7	7	10	4	4	
Orange Free State.....	14	43	10	8	5	
Transvaal.....	1	4	11	6	13	
Yugoslavia.....	6		7	49	150	125





