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## Public Health and the Aging

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Traditionally, the beginning of a new century or a new half-century is a time for taking stock, for assessing past achievements, and for determining what our needs will be in the future. In the field of health and welfare, the middle of the twentieth century finds few factors more significant than this: for our country this is an era of an aging population. The increasing proportion of older people today undoubtedly presents the Nation with one of its foremost problems in the conservation of human resources.

It does not demand extraordinary vision to predict that few things will more profoundly affect the direction and emphasis of public health programs in the future than the progressive aging of our population. Answering the question of what can be done for and about the aging calls for considerable reflection, however. The problems of the aging are about as complex and varied as any in the entire field of human relations. Aging represents an economic, social, educational, and financial, as well as a health and medical problem, or at least an adjustment in each of these areas.

Nonetheless, I contend that health holds the key to the problems of making the years of later life happier and more productive for the individual and more useful to society. Once health agencies turn their attention to the normal health problems of aging—or what might be termed the hygiene of aging—and the prevention and stabilization of the chronic diseases, an important beginning will have been made. If, at the same time, the older people begin to find and accept their rightful place in society, then the solution of this “problem” is not far at hand.

There are some who might ask: “Why all this sudden interest in the aging? We have always had older people in our midst and they’ve always been more or less taken care of.” The answers are not hard

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to find; they are written in the demographic history of this country. If we go back to the year 1900, for example, we find that it was a time of youth—the median age was just under 23 years. Today, however, the median age is just over 30 and in 1975 it is expected to be 34.

Even more striking are the proportionate shifts toward the older ages. Less than one-fifth of the population was 45 years or older in 1900, but by 1960 almost one-third probably will have attained that age. Those who are generally lumped together in the old-age bracket, the group 65 years or over, constituted about 4 percent of the total in 1900. This group has now almost doubled, and 10 years from now almost 10 percent of the population is likely to be 65 years or over.

A number of factors have contributed to the rising age trend such as the decrease in immigration and the declining birth rate. Most important, however, has been the success of public health and allied agencies in substantially curbing the communicable diseases that took such heavy tolls in the last century. Because of better health in childhood and youth and because of better community sanitation more people are living longer. Thus, they are subject to the degenerative diseases prevalent among the older groups and to the stresses and deteriorations which are part of the aging process.

As a people, we have not given much thought to the problems of the aging because we never had to. Industry had enough young men to man the machines; those who were too old or unable to work were cared for by their families. We in the health fields were too busy building community sanitation facilities and fighting the infectious diseases to give much thought to the health problems of adults.

But the health of the aging group in the population, like the health of mothers and children, is in considerable measure a community and therefore a public health responsibility. If we accept the basic premise that the greatest asset of a Nation is its people, then ignoring the health and social needs of the 11,000,000 people who are 65 or over comes close to being criminally negligent. Aside from all humanitarian considerations, however, society has a very real stake in insuring that as many of this group as possible remain productive and independent. Otherwise, there will remain a group of people who are not only nonproductive but who are dependent on others for their livelihood and care. The effects on our ability to produce and on our standard of living cannot be anything but harmful.

There is another purely economic factor which must be considered in relation to the aging. Society has the right to expect a full measure of return from the investment, in terms of training and education, it puts into its citizens. This is impossible if older people are shunted out of industry, are permitted to fall victims of disability and chronic

disease, and are forced out of productive employment because of hiring prejudices or arbitrary retirement ages.

We are now in a position with regard to the aging, it seems to me, that is similar in many ways to the child health movement of the beginning of this century. Over 50 years ago public health workers, as well as numerous professional and voluntary groups, began to study intensively the child and his needs. Begun with the aim of reducing the major childhood diseases and impairments to health, these studies were logically extended to include the "whole child"—his growth and development, his behavior, his emotional problems, and his relationship to his family, school, and community. Out of these studies came concrete proposals for changes and adjustments in attitudes, facilities, and services for the child. The result is our present body of knowledge and active programs for advancing child health and for improving the entire period of childhood.

Somewhat the same type of approach is now needed for the mature and older members of the community. As yet, most of the efforts for improving adult health have been directed toward the prevention and control of the chronic diseases. This is all to the good, for the chronic diseases deteriorate organs, destroy tissues, and aggravate the normal process of aging. It is encouraging to note that more and more public and voluntary health agencies are developing aggressive chronic disease programs.

On the other hand, our attention must be turned increasingly to the hygiene of aging. This calls for developing techniques and programs which will sustain productivity, maintain health, and meet the basic emotional and social needs of the aging group in the population.

This kind of approach will demand considerable research—basic, clinical, and social—but at the same time it will call for putting all our present knowledge to work on a mass basis.

In speaking of the health needs of the aging, it is easy to fall into two errors. One is to stigmatize and segregate the aging, endow them with special rights and privileges, and set them up as a group apart. This is not only harmful to them as individuals but also disruptive of our social and familial patterns.

The other danger is to consider aging as synonymous with disease. Aging is not a disease. It is not a state of ill-health. Actually, we grow old from birth—indeed, even before birth.

There are, in fact, several different kinds of aging, and one of the sources of difficulty is that these develop at different rates among various occupational groups, and even in the same individual. I will mention only three—chronological, physiological, and psychological aging. By the latter I mean not only the individual's mental and

emotional maturation and decline but the acceptance of the older person by the community.

We can dismiss chronological aging at once, because we could no more "prevent" that type of aging than we could stop the earth in its orbit. Moreover, chronological aging—the mere ticking off of birthdays—is probably the least important of the three in fixing the "true" age of an individual.

Physiological aging is much more complex, because it implies a mixture of growth and decline that is going on in the same individual at one time. For example, physical decline begins to set in somewhere in the middle 20's but intellectual growth continues for some time thereafter. There are other compensations for biological aging, some internal, such as an increase in skill and judgment when speed of reaction lowers, and some man-made, such as the machine which takes the place of purely physical effort.

It is obvious, too, that physiological as well as psychological age differs markedly in various individuals with the same chronological age. How many of us "youngsters" have envied the buoyancy and vigor of a George Bernard Shaw and a Bernard Baruch? One of the lessons from this for health agencies is that health services will have to focus attention on the individual and on individual needs in dealing with the aging, while at the same time seeking to develop and apply more general measures to groups.

The public health approach to the problems of aging may be said to consist of four essential phases: (1) the hygiene of aging which includes not only the normal health requirements of the aging group with respect to diet, rest, recreation, etc., but the knowledge of how best to prepare for the period of aging; (2) the prevention or early finding and stabilization of the chronic diseases and impairments which accelerate the aging process; (3) rehabilitation and retraining which will enable the older person to make the adjustments required because of the exigencies of his age; and (4) education which must break down prejudices against older people and bring about widespread changes in attitudes by the employers, by the community, and by the older person himself.

Although there are many gaps in our knowledge of the aging process and although health work with the aging demands much individualized effort, the hygiene of aging implies certain common denominators which permit the application of mass measures. This would include measures directed toward preserving the physical vigor and work potential of older persons by husbanding physical resources, preventing disability and disease, and pushing back the period of true senility and complete dependency as far as possible.

Adults must be made aware of the necessity not only to preserve but to use fully all their physical resources, thus preventing atrophy

and premature decay. Coupled with that must come the recognition that physical capacities at 60 are far different than they are at 20. The acceptance and practice of good health habits throughout the entire period of adult life should decrease the hazards of later maturity.

The physical, mental, and emotional preparation for later life must begin in youth and not in middle and old age when habits are firmly established or disability has already occurred. For instance, the promotion of good dental hygiene, such as limiting the consumption of sweets, and the widespread application of preventive measures early in life, such as sodium fluoride, would, according to present knowledge, mean loss of fewer teeth and better dental health in later life.

Accidents, especially late in life, are apt to result in some permanent disability. Among older people accidents occur very often in the home. Practically all accidents are man-made and therefore, in theory at least, preventable. Accident prevention must be taught in youth if it is to be practiced in maturity.

Obesity is associated with the increased incidence of hypertension, diabetes, heart disease, and even arthritis. Control of overweight—not simply in old age but throughout the whole of adult life—might not only help prevent some of the more important chronic diseases but should make the period of maturity longer and happier.

The second part of a public health program for the aging involves the control and stabilization of chronic illness. An individual who retains all his faculties and all his functions can make a much better adjustment to the aging process than one who acquires some type of disability. While a great deal is still unknown about the chronic diseases, techniques have now been developed which allow for their early detection and for the prevention of crippling complications. Mass examinations for tuberculosis and syphilis have proved valuable and economical and have pointed the way for broader programs.

The technique of multiple screening, wherein individuals are rapidly tested for the presence of several specific diseases, holds out the promise of early case-finding and prompt detection of many conditions which might go unchecked and thereby contribute to impairments in old age. In about 30 minutes an individual at a multiple screening clinic can be given a chest X-ray, blood tests, urinalysis, blood pressure determination, measurement of height and weight, and tests of vision and hearing. Tuberculosis, other diseases of the lungs, syphilis, diabetes, anemia, high blood pressure, obesity, and sight and hearing defects can thus be "screened" out for definitive diagnosis and corrective treatment. Many of the technical and administrative details of multiple screening have yet to be perfected. However, when multiple screening methods are organized and functioning smoothly, health agencies will be in a position to detect and

place under control many adults who need preventive services, treatment, and rehabilitation.

All of these techniques not only make possible the rapid examination of large numbers of apparently well individuals but they may serve to stimulate people to arrange for more complete individual examinations. Periodic appraisals or regular check-ups are probably the most valuable procedures of all in looking for danger spots and guarding against break-downs. Public health agencies might well look toward the establishment and staffing of diagnostic centers which would assist the work of personal physicians in assuring the completeness of periodic health inventories. Even if the diseases found in this process could not be completely cured, early detection would enable the individual to make the necessary adjustments with regard to employment, diet, exercise, and his general regimen of life.

Rehabilitation and retraining are among the most important, albeit largely undeveloped, techniques in a program for dealing with the needs of the aging. Even when a chronic disease is not detected early, rehabilitation can mean a return to active, productive work by the sufferer. In some instances, restorative services will enable invalids to care for their own needs, thus freeing other persons from the burden of their care.

But retraining has even broader and more basic implications for the aging group in the population. Even if they have no disabilities, older people will have to modify normal activities and make the adjustment needed to meet depleted reserves of used up organs and tissues. Training for new and perhaps less strenuous types of work should begin well in advance of the ages when occupational changes may be desirable or necessary. Industry has a tremendous opportunity to retain the loyalty and experience of its older workers through a process of retraining and gradual change-over to jobs that will suit individual ages and capabilities. Beyond that, public health agencies will have to work with rehabilitation agencies, welfare and social groups, and educational institutions to make retraining for middle-aged workers more widespread, more individualized, and more beneficial to the community. Self-employed persons and workers in smaller establishments especially need help from community sources.

Basic to an improvement in the status of older people is a sustained public educational campaign to establish the older person's rightful place in society. This involves attitudes and prejudices, and a host of economic and social factors which are perhaps outside the direct responsibility of health agencies. Nevertheless, health agencies might point the way and exert their influence in teaching people to accept the period of aging and learn to live with it. There must be a recognition that people at all ages have a positive contribution to make to society. The accumulated wisdom and experience of the

mature citizen can provide the proper balance for the enthusiasm and energy of the younger citizen.

America has traditionally been termed the land of youth and opportunity. The accent has been on youth and rightly so in a Nation that needed young men to push back its frontiers and build a civilization out of forests and wilderness. However, this kind of thinking has resulted in unfortunate attitudes which have seeped into our national consciousness.

We tend to put a premium on youth and to scrap a tremendous portion of our human resources. We accept too readily such arbitrary and unfounded ideas that older people are unfit because of their age and are subject to more work accidents and greater absenteeism. A few studies which have been made, in fact, tend to prove that the exact opposite is true—that older workers have fewer accidents and spend less time away from their jobs. And while it is true that more specific measurements of the work capacities and abilities of older people are needed, it is also true that there are few jobs for which the mature citizen cannot be trained or conditioned.

The widespread feelings of prejudice toward older workers by employers and by the community engenders in older workers themselves a feeling of inadequacy. Thus, they accept an inferior status, which leads to physical stagnation and emotional breakdown, and ultimately to economic drain on the community. When older people begin to play a more active role, both on their jobs and in their communities, much of their physical and emotional anguish will disappear.

In stressing activity, I do not mean to ignore or belittle the need for retirement. There are some, for example, who will wish to retire from active work while still vigorous. If their economic circumstances permit, they should, of course, do so. Most of these persons desire some outlet in hobbies, civic affairs, or other pursuits less exacting than their normal occupation. For others, a system of gradual or partial retirement with some supplementation of income through pensions or insurance payments might be the answer to their needs. And finally, there will be those who are totally incapacitated for all gainful employment or participation in social affairs. These people need custodial care under circumstances most nearly approaching normal family life. This, perhaps, is not public health but it is good social practice.

As yet there are few established patterns of programs for the hygiene of aging. But States and localities can begin to survey their own problems in relation to that objective. They should determine the local resources available for meeting the problems and begin to formulate programs appropriate to their needs and resources.

Some States have already begun to take limited action in this field. For example, such widely separated States as Indiana and

California have set up divisions of adult health and geriatrics in their health departments to formulate and carry out programs for dealing with the aging. A legislative committee in New York State has recommended that a state-wide agency be established to deal with the aging, drawing from the resources and facilities of almost all the existing State agencies. Massachusetts and Maryland are pointing the way in programs for chronic disease control.

It is obvious that programs for meeting the varied problems of the aging will call for a complete mobilization of community resources. Many agencies will have to work together—health, welfare, housing, recreation, employment—if the needs of the aging are to be met effectively. For the immediate present, existing staffs can be utilized. Over the years, however, new competencies will have to be developed to direct and carry on the programs which are bound to evolve for older people.

The first half of the twentieth century can rightfully be termed the age of the child. Without diminishing our efforts to make the period of childhood healthier and happier we should, in the second half of the twentieth century, attempt to equal those efforts for adults. During this half century we should increasingly direct our thoughts and energies to make the period of maturity more useful and beneficial. I can think of few more lasting contributions to our Nation's ultimate health and welfare.



# Studies of Coxsackie Virus

## Adaptation of a Strain to Chick Embryos

By R. J. HUEBNER, M. D., SARA E. RANSOM, M. S., and E. A. BREMAN, M. D.\*

Coxsackie viruses are characterized by limited host ranges among laboratory animals (1, 2). The purpose of this note is to report the adaptation of one type of Coxsackie virus to chick embryos and the cultivation of virus through 10 egg passages.

### Materials and Methods

A virus isolated in September 1949 from the feces of an ill person during a study of an outbreak of mild febrile illness (3) was employed in this study. This virus which produced paralysis and death in suckling mice was representative of a group of similar viruses isolated from each of 8 persons who were ill during the outbreak. It appeared to be immunologically identical with, and in all other ascertainable respects similar to, Dalldorf's type 2 strain isolated in 1947 from a patient in Wilmington, Del. (4). When 3- to 4-day old mice were used for titrations, mouse-brain suspensions of this virus gave  $ID_{50}^1$  titers of  $10^{-3}$  to  $10^{-4}$ , while muscle suspensions gave  $ID_{50}$  titers of  $10^{-6}$  to  $10^{-7}$ . There was usually close agreement between  $ID_{50}$  and  $LD_{50}$  endpoints. Mice over 2 weeks of age showed no signs of illness when injected with potent virus.

The series of passages reported in this manuscript were initiated with a pool of mouse brains from the fifth mouse passage following primary isolation from human feces. Egg passages were made in fertile New Hampshire Red and white Leghorn eggs which had been incubated 7 days. Suckling albino mice (NIH strain) 3 to 4 days of age were employed for mouse passages and titrations of viruses. Older mice were used for preparation of antiserum. Sterile distilled water was used for suspending all egg and mouse materials. Specimens were emulsified by grinding with alundum in hand blender or a mortar. All suspensions from egg and mouse materials were tested for bacterial contaminants in fluid thioglycolate media incubated at 37° C. and were observed for 7 days.

### *Techniques of Injection and Harvesting*

Fertile eggs were injected into the allantoic or yolk-sac cavities with 0.5 cc. of the specified inoculum and incubated at 35° C. Various post-inoculation periods of incubation were employed. However, in

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<sup>1</sup> 50 percent endpoint based on paralysis.

each instance, during 10 successful consecutive passages of virus, the eggs were incubated 6 days before harvesting.

The various specified embryo fluids and tissues were harvested; suspensions were immediately prepared, cultured, and then frozen at  $-45^{\circ}\text{C}$ . until used in further studies. Only those suspensions shown to be free of bacterial contamination were employed as inoculums for eggs or mice.

### *Methods for Demonstrating Virus in Egg Materials*

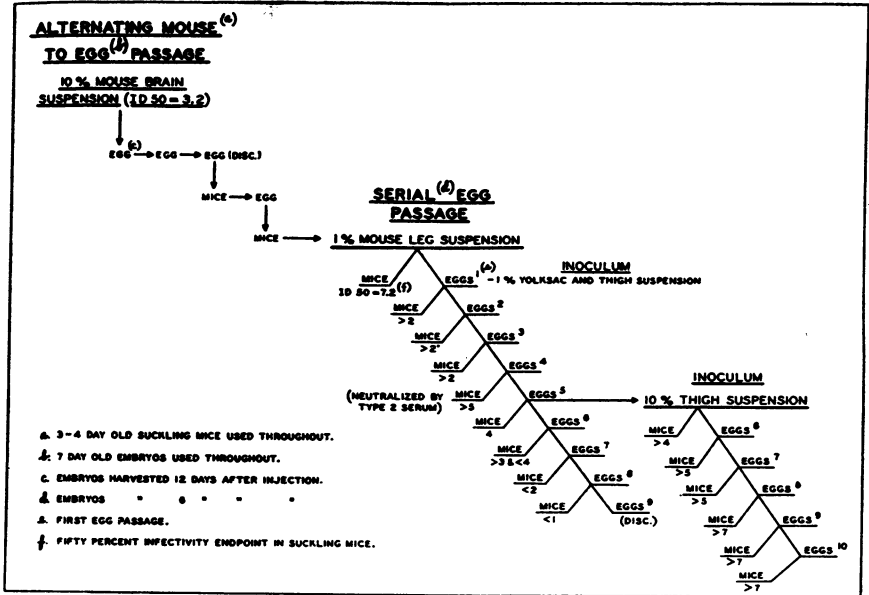
Embryo tissues and fluids from each egg passage were injected into 3- to 4-day old suckling mice. Typical paralysis within 6 or 7 days was accepted as evidence of virus. When virus appeared abundant, titrations using tenfold dilutions were performed in suckling mice in order to determine approximate endpoints. Suspensions of embryo tissues were also titrated in eggs, following which pools of embryo tissues representing the various dilutions were tested in the usual manner in mice for the presence of virus.

## Results

Early attempts at egg passage were discouraging. Fertile eggs which were injected in the allantoic cavity with infected mouse brain ( $\text{ID}_{50}=3.2$ ) and harvested at 4, 9, and 12 days after injection could not be shown to contain virus in any tissues or fluids beyond second passage. Similarly, virus could no longer be demonstrated beyond third yolk-sac passage even when embryo thigh muscles which contained most demonstrable virus were used as inoculum. However, there appeared to be some indication of propagation in the latter series of passages.

At this point an alternating passage technique (5) was tried using embryo tissue from the third yolk-sac passage described above to produce illness in suckling mice. Following a mouse-to-egg-to-mouse passage (chart) consecutive yolk-sac passages were again initiated with a leg suspension ( $\text{ID}_{50}=7.2$ ) from a paralyzed mouse. Virus was successfully propagated in embryos harvested 6 days after injection in this series of egg passages as shown in the chart. It will be noted that the virus content of embryo thigh tissues increased during the last 4 passages when 10 percent thigh-tissue suspensions were used as inoculum. This is in contrast to a parallel series of passages in which 1 percent suspensions of mixed yolk sac and thigh tissues were used as inoculum, and which resulted in a progressive loss of virus during subsequent passages.

Egg-propagated virus was identified following fifth, seventh, eighth, and ninth passages by means of neutralization tests using antiserum prepared in adult mice (3) against Dalldorf's type 2 virus, homologous mouse passage virus, heterologous strains of virus, and



Schematic presentation of a series of yolk-sac passages resulting in the adaptation of Cocksackie virus (type 2) to chick embryos, showing 50 percent infectivity titers of embryonic tissues from successive passages when titrated in suckling mice.

normal mouse tissue. Maximal amounts (100-10,000 ID<sub>50</sub>) of virus employed in the tests were neutralized by Dalldorf's type 2 serum and by the homologous serum but not by heterologous or normal serums.

Early studies showed that virus was present in larger quantities in embryo tissue than in allantoic and yolk-sac fluids or membranes. These observations were confirmed in later experiments when parallel titrations of pooled portions of embryos also showed that thigh muscles contained more virus than viscera or brain tissue. A suspension made from bodies of embryos (without heads) from tenth passage was found to have an ID<sub>50</sub> titer of approximately 10<sup>-7</sup> in mice.

The chart shows that the use of a 1 percent yolk-sac and thigh-tissue suspension as standard inoculum for serial egg passages finally resulted in the loss of virus. When it became apparent in sixth passage that the virus content was diminishing progressively, a titration of inoculum from fifth passage was performed in eggs using tenfold dilutions of chick-embryo thigh tissue. It was found that a 10-percent thigh suspension produced more virus in the chick-embryo tissues than higher dilutions. From this experiment it appeared that more concentrated inoculums were necessary to maintain virus growth in chick embryos. This indeed proved to be the case (chart).

During the 10 successive passages in eggs, death rates among infected embryos prior to harvesting did not appear to exceed those

expected among normal embryos. In one experiment, however, embryos injected with a 10-percent suspension of thigh tissue (eighth passage;  $ID_{50}=5.0$ ) were not harvested but allowed to proceed to the hatching stage. Four of six embryos survived 21 days but were poorly developed and failed to hatch.

An attempt to establish yolk-sac adapted virus in serial allantoic passage was unsuccessful. A 10-percent thigh-tissue suspension from fifth-passage yolk sac was used to initiate a series of passages via the allantoic fluid. Although virus was demonstrable in embryo thigh muscles and allantoic fluid for three subsequent egg passages, no virus could be demonstrated following fourth passage.

### Summary and Conclusion

Following the use of an alternating mouse-to-egg passage technique, a Coxsackie virus similar to Dalldorf's type 2 was propagated in 10 consecutive yolk-sac passages. Despite the fact that inoculums were injected into the yolk-sac cavity, nearly all demonstrable virus was found localized in embryo tissue. After 10 passages, chick-embryo tissues when diluted  $10^{-7}$  produced paralysis and death in mice, which appeared in all visible respects similar to the effects produced by mouse tissue infected with the parent virus.

After five, seven, eight, and nine passages the egg-propagated virus was neutralized in a specific manner by antiserum against Dalldorf's type 2 and homologous mouse-passage virus.

It cannot be concluded from one series of experiments that the alternating mouse-to-egg-passage technique was responsible for the successful adaptation of Coxsackie virus to fertile hen eggs. However, the evidence is consistent with such an hypothesis and justifies additional similar attempts with the same or different strains of virus.

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# **Medical Examination and Vaccination of Farm Laborers Recruited from Mexico.**

By **RALPH GREGG, M. D.\***

The Division of Foreign Quarantine is responsible for preventing the introduction of quarantinable diseases into the United States and for preventing the entry of aliens afflicted with serious mental and physical conditions excludable under the immigration laws. An important activity of the Division in connection with these responsibilities is the medical examination of laborers at the Mexican border. This work is carried out as part of a cooperative procedure involving the United States Employment Service, the Immigration and Naturalization Service, the Public Health Service, and the National Government of Mexico.

For many years Mexican laborers have been admitted into the United States for limited periods to work on farms, particularly in the Southwest where large numbers of hand laborers are needed to harvest vegetable crops. To a less extent Mexican labor has been recruited for railroad work.

Before World War II little attention was paid to the health of the workers brought in. However, when the United States Government became concerned with the labor supply from the standpoint of the war effort, medical examinations and vaccinations were instituted in connection with the recruitment procedures.

During the war the Public Health Service sent physicians and mobile chest X-ray units into Mexico to conduct the examinations. Applicants were rejected when found to be afflicted with so-called "class A" conditions causing exclusion under the immigration laws. These conditions include insanity, feeble-mindedness, epilepsy, and other serious mental defects; tuberculosis; venereal diseases; trachoma; and a large group of contagious diseases not common in the United States. Besides class A conditions, other physical conditions that might make a man unfit for physical labor were causes for rejection.

All laborers examined were vaccinated against smallpox in accordance with the Public Health Service foreign quarantine regulations, in order to prevent introduction of this disease.

Since the war, the examinations have been performed in Mexico by Mexican physicians. Their work has been supervised by the medical officer in charge of United States Public Health Service quarantine on

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**Braceros being vaccinated against smallpox by Public Health Service personnel.**

the Mexican border, assisted by his staff at El Paso, Tex., and by medical officers at the border quarantine stations under his direction, such as Brownsville, Eagle Pass, and Laredo, Tex., and Nogales, Ariz.

In 1949, as in other recent years, recruitment and examination of Mexican laborers was done in the fall. A departure in 1949 consisted in examining workers in both the United States and Mexico. In the United States, the procedures were carried out at El Paso, Crystal City, and Harlingen, Tex., and in Mexico, at Chihuahua and Hermosillo. While procedures in Mexico followed the usual pattern, the purpose in the United States was to legalize, temporarily, the status of many workers who had already entered the country illegally.

In Mexico, examinations, including use of the stethoscope for the heart and lungs, were made of all workers by Mexican doctors furnished by the local health departments. At the time of examination, all workers were vaccinated against smallpox. Chest X-rays for tuberculosis were not made in 1949, as the examination procedure had of necessity been set up on very short notice. The labor contract agreements with Mexico were made late in the harvest season and the examination of workers was initiated under emergency conditions that did not permit the use of photofluorographic X-ray equipment. In some instances as many as 1,000 persons per day were examined at

rural points near large pools of labor. Rejections were made for all class A conditions encountered, for communicable diseases, and diseases and physical defects that would obviously interfere with satisfactory performance of work or that might require prolonged treatment in the United States. On arrival at the border ports of entry all accepted workers, together with their baggage, were dusted with DDT powder by Service personnel to prevent introduction of typhus fever.

Because there was an insufficient number of doctors at the three centers in the United States, inspections of workers were made by sanitary inspectors under the supervision of a doctor at each place. All personnel required were taken from the quarantine stations at El Paso, Laredo, Hidalgo, and Brownsville. As was the case in Mexico, all workers were vaccinated against smallpox, but physicians examined the heart and lungs only when they thought it necessary. Also, the DDT dusting of workers was not routine but was carried out only when inspection revealed the need for it. Rejections were made for the same causes as for workers recruited in Mexico.

The following table gives the number of laborers examined and vaccinated, the number rejected, and causes for rejection, for the year ending June 30, 1949.

*Medical examinations of alien laborers, fiscal year 1949*

<i>Where examined</i>	<i>Number examined</i>	<i>Number rejected</i>	<i>Number vaccinated</i>
Mexico.....	19, 013	561	19, 013
United States.....	80, 020	1, 042	80, 020
<b>Total.....</b>	<b>99, 033</b>	<b>1, 603</b>	<b>99, 033</b>

<i>Causes for rejections</i>	<i>Mexico</i>	<i>United States</i>	<i>Total</i>
Mental conditions.....	2	2	4
Eye disease or defect.....	93	333	426
Skin disease.....	29	58	87
Heart disease or defect.....	13	0	13
Pulmonary condition.....	10	5	15
Toxic goiter or other thyroid condition.....	13	0	13
Teeth, severe pyorrhea or caries.....	143	19	162
Generalized lymphadenopathy (glands, neck, groin, etc.)..	10	11	21
Hemorrhoids and varicose veins.....	65	23	88
Urethral discharge.....	14	142	156
Venereal ulcers (includes penile ulcer, mucous patches, and genital and inguinal scars of less than 2 years' duration)..	38	96	134
Hernia (all forms).....	95	230	325
Contracture, fixed joints, etc.....	8	55	63
Absence of arms, legs, hands, fingers, etc. (one thumb and two fingers will pass if individual otherwise normal).....	4	26	30
Fever (any unexplained elevation above 100° F.).....	2	8	10
All other causes.....	22	34	56
<b>Total.....</b>	<b>561</b>	<b>1, 042</b>	<b>1, 603</b>

# Sickness Absenteeism Among Industrial Workers, Third and Fourth Quarters of 1949

By W. M. GAFAFER, D. Sc.\*

The accompanying data on 8-day or longer disabilities experienced by male employees during the third and fourth quarters of 1949 are derived from periodic reports submitted by industrial sick benefit associations, company relief departments, and group health insurance plans. The reports cover approximately 200,000 male workers in various industries.

The third and fourth quarter rates for 1949 for sickness and non-industrial injuries are 9 and 13 percent, respectively, below the corresponding rates for 1948; the corresponding decreases for the respiratory group of diseases are 23 and 20 percent. The third and fourth quarter respiratory rates of 1949 are the lowest recorded for the 10 years, 1940-49; the third quarter rate of 15.4 is 36 percent below the 10-year third quarter mean rate of 24.0 while the rate of 23.0 for the fourth quarter is 48 percent below the 10-year fourth quarter mean of 44.6. Both quarters of 1949 show lower rates for influenza and grippe than the corresponding quarters of 1948; the third quarter rate of 2.7 for 1949 and the fourth quarter rate of 6.3 for the same year are the lowest rates recorded for the corresponding quarters of the 10 years 1940-49, the two rates being 58 and 65 percent, respectively, below the 10-year mean rates of 6.4 and 18.2.

Both the third and fourth quarter rates of 1949 for all sickness and nonindustrial injuries, 80.1 and 79.8, respectively, continue the decline from the maximum rates of 120.1 and 157.6 recorded for the third and fourth quarters of 1945. The excesses in the frequency of disability recorded during the war period are particularly notable when it is recalled that the present experience is based on absences of 8 days or longer generally certified by a physician. In evaluating time changes in absenteeism rates consideration must be given to the possible effect on recorded disabilities of a complex of factors affecting the worker, and his home and industrial environment. Any conclusions derivable from the increase in sickness frequency during the war years and the drop in rates beginning in 1946 can be made only with information on such factors as the composition of the exposed population with respect to age, physical fitness, and general work experience during the prewar, war, and postwar periods.

\*From Division of Industrial Hygiene, Public Health Service. The report for first and second quarters of 1949, and for year 1948 appeared in Pub. Health Rep. 64: 1350-1352 (1949). Reprint No. 2974.



*Number of absences per 1,000 males (annual basis) on account of sickness and nonindustrial injuries disabling for 8 consecutive calendar days or longer, by cause; experience of male employees in various industries, third and fourth quarters of 1949<sup>1</sup>*

Cause <sup>2</sup>	Number of absences per 1,000 males (annual basis) beginning in specified period						
	Fourth quarter		Third quarter		Year		
	1949	1948	1949	1948	1949	1948	1944-48
Sickness and nonindustrial injuries.....	79.8	91.8	80.1	88.1	93.1	102.0	123.8
Nonindustrial injuries (169-195).....	10.2	11.0	11.4	12.5	10.9	12.2	12.3
Sickness.....	69.6	80.8	68.7	75.6	82.2	89.8	111.5
Respiratory diseases.....	23.0	28.8	15.4	20.0	26.1	31.8	44.8
Tuberculosis of respiratory system (13).....	.7	.4	.5	.8	.6	.6	.7
Influenza, gripe (33).....	6.3	8.2	2.7	4.9	7.6	10.2	17.4
Bronchitis, acute and chronic (106).....	3.9	5.5	2.7	3.9	4.3	5.8	7.5
Pneumonia, all forms (107-109).....	3.9	4.3	2.5	2.3	3.9	4.3	4.8
Diseases of pharynx and tonsils (115b, 115c).....	2.1	3.5	2.6	2.6	3.3	3.5	4.7
Other respiratory diseases (104, 105, 110-114).....	6.1	6.9	4.4	5.5	6.4	7.4	9.7
Digestive diseases.....	14.0	16.5	15.6	15.7	16.4	16.6	18.0
Diseases of stomach except cancer (117, 118).....	4.9	6.1	4.5	5.1	5.2	5.6	6.0
Diarrhea and enteritis (120).....	1.4	2.1	2.2	2.6	2.0	2.1	2.4
Appendicitis (121).....	2.6	3.4	3.5	3.5	3.5	3.4	3.8
Hernia (122a).....	2.3	1.8	2.8	1.9	2.6	2.4	2.4
Other digestive diseases (115a, 115d, 116, 122b-129).....	2.8	3.1	2.6	2.6	3.1	3.1	3.4
Nonrespiratory-nondigestive diseases.....	29.9	33.3	35.5	37.2	37.3	38.3	44.1
Infectious and parasitic diseases (1-12, 14-24, 26-29, 31, 32, 34-44) <sup>3</sup> .....	1.3	1.8	1.8	2.2	2.2	2.7	2.7
Rheumatism, acute and chronic (58, 59).....	2.9	3.3	3.3	3.4	3.8	4.1	5.2
Neurasthenia and the like (part of 84d).....	1.2	1.5	1.0	1.6	1.6	1.6	2.1
Neuralgia, neuritis, sciatica (87b).....	1.5	2.2	2.0	2.1	2.0	2.4	3.0
Other diseases of nervous system (80-85, 87, except part of 84d, and 87b).....	1.5	1.2	1.7	1.8	1.7	1.5	1.9
Diseases of heart and arteries, and nephritis (90-99, 102, 130-132).....	5.4	6.0	6.2	5.9	6.5	6.6	7.4
Other diseases of genitourinary system (133-138).....	3.1	2.9	3.1	3.2	3.2	3.1	3.3
Diseases of skin (151-153).....	2.4	3.1	3.2	3.7	3.0	3.3	3.6
Diseases of organs of movement except diseases of joints (156b).....	1.8	2.3	2.3	2.6	2.4	2.8	3.4
All other diseases (45-57, 60-79, 88, 89, 100, 101, 103, 154, 155, 156a, 157, 162).....	8.8	9.0	10.9	10.7	10.9	10.2	11.5
Ill-defined and unknown causes (200).....	2.7	2.2	2.2	2.7	2.4	3.1	4.6
Average number of males.....	187, 245	203, 231	192, 840	203, 564	195, 059	200, 901	1, 048, 177

<sup>1</sup> Industrial injuries and venereal diseases are not included.

<sup>2</sup> Numbers in parentheses are disease title numbers from International List of Causes of Death, 1939.

<sup>3</sup> Exclusive of influenza and gripe, respiratory tuberculosis, and venereal diseases.

—Announcement—

**Ten Openings for Physicians Under Displaced  
Persons Act**

Approximately 10 physicians will be needed on and after July 1, 1950, to supervise and participate in the medical examination of about 200,000 persons under the provisions of the Displaced Persons Act. This act considerably expands the area in which the work has been conducted during the past 2 years. Special training in psychiatry and tuberculosis are desirable but not considered essential. The assignment will be for a period of approximately 1 year. The work will be conducted in the following countries: Germany, Austria, England, Italy, Greece, and the Philippine Islands.

There also is a continuing need for physicians for assignment to the American Consulates in Europe as medical advisers in the regular immigration work. The medical screening of aliens is considered a significant contribution to the broad public health programs for the control of tuberculosis, venereal diseases, and mental health. The established period for this duty is 2 years.

Applicants who are not already medical officers of the Public Health Service and who meet the requirements for appointment in the Reserve Corps of the Public Health Service will receive reserve commissions. Special foreign service allowances are provided varying from \$4 to \$12 per day, depending on the cost of living in the various cities. No special foreign allowances are paid in Germany and Austria as in these countries, quarters, commissary, post exchange, and clothing store privileges are available through the Army.

Overseas transportation in most cases probably will be by air. During a tour of duty, there is generally an opportunity to take vacation trips and, if desired, work at more than one station.

Physicians without dependents are preferred. Any physician interested in a foreign assignment should immediately so indicate by telegram or letter addressed to R. C. Williams, Assistant Surgeon General, Chief, Bureau of Medical Services, U. S. Public Health Service, Federal Security Agency, Washington 25, D. C.

# INCIDENCE 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

### REPORTS FROM STATES FOR WEEK ENDED JUNE 3, 1950

Reported cases of influenza in the Nation increased from 1,259 to 1,590 for the current week over the preceding week. The rise was due to a reported increase in Virginia of 378 cases, from 183 to 561. South Carolina reported an increase from 3 cases last week to 22 cases, and West Virginia reported a decrease from 35 to 16 cases. The cumulative number of cases of influenza for the first 22 weeks of the year was 241,068 which may be compared with the corresponding totals of 71,644 for 1949 and 296,940 for 1947, the highest on record for the past 5 years. The corresponding 5-year (1945-49) median was 133,962.

A decrease from the preceding week was noted in the reported incidence of whooping cough, from 2,852 to 2,484 for the current

#### Comparative Data for Cases of Specified Reportable Diseases

[Numbers after diseases are International List numbers, 1948 revision]

Disease	Total for week ended		5-year median 1945-49	Seasonal low week	Cumulative total since seasonal low week		5-year median 1944-45 through 1948-49	Cumulative total for calendar year		5-year median 1945-49
	June 3, 1950	June 4, 1949			1949-50	1948-49		1950	1949	
	Anthrax (062).....					( <sup>1</sup> )		( <sup>1</sup> )	( <sup>1</sup> )	
Diphtheria (055).....	75	117	165	27th...	* 7,088	* 8,445	13,123	2,817	* 3,331	5,557
Acute infectious encephalitis (082).....	9	17	9	( <sup>1</sup> ).....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	283	* 217	193
Influenza (480-483).....	1,590	923	923	30th...	271,598	107,914	177,520	241,068	71,644	133,962
Measles (085).....	13,061	17,967	17,967	35th...	239,426	571,694	478,392	220,296	519,301	443,446
Meningococcal meningitis (057.0).....	72	56	58	37th...	2,898	* 2,626	2,854	1,985	* 1,782	1,882
Pneumonia (490-493).....	1,163	1,224		( <sup>1</sup> ).....	( <sup>1</sup> )	( <sup>1</sup> )		50,732	* 46,107	
Acute poliomyelitis (080).....	132	156	144	11th...	881	* 860	565	2,015	* 1,775	1,032
Rocky Mountain spotted fever (104).....	23	19	23	( <sup>1</sup> ).....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	77	123	88
Scarlet fever (050).....	1,015	1,115	1,522	32d...	51,963	75,549	80,871	35,524	53,005	54,185
Smallpox (084).....	1		3	35th...	( <sup>1</sup> )	42	52	188	22	42
Tularemia (059).....	13	32	25	( <sup>1</sup> ).....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	434	530	413
Typhoid and paratyphoid fever † (040, 041).....	84	52	61	11th...	604	552	666	1,114	* 1,040	1,139
Whooping cough (056).....	2,484	1,046	2,079	39th...	79,886	* 32,509	76,130	58,350	22,476	44,864

<sup>1</sup> Not computed.

\* Changed by corrected report from Indiana for week ended April 29.

† Deduction: North Carolina, week ended April 1, 1 case.

‡ Including cases reported as salmonellosis.

week. The 5-year median was 2,079. The cumulative total for the first 22 weeks of the year was 58,350 as compared with the corresponding total of 22,476 for the same period last year; and 44,864 for the 5-year median.

The total number of acute poliomyelitis cases reported for the current week was 132 as compared with 103 last week. The corresponding figure last year was 156 and the 5-year (1945-49) median was 144. Included in the total of 132 cases were 55 from Texas, 18 from California, and 12 from Oklahoma.

Reported cases of meningococcal meningitis numbered 72 for the week as compared with 62 cases last week, and a 5-year median of 58. The total for the week included 9 cases in Pennsylvania, 6 in Michigan, 6 in Tennessee, and 7 in Texas.

The reported incidence of typhoid and paratyphoid fever increased from 75 the preceding week to 84. The 5-year median was 61. The cumulative total for 22 weeks of this year was 1,114 cases of typhoid and paratyphoid fever.

For this week in the Nation the following cases were reported: Diphtheria 75, infectious encephalitis 9, measles 13,061, Rocky Mountain spotted fever 23, scarlet fever 1,015, smallpox 1, and tularemia 13.

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### DEATHS DURING WEEK ENDED JUNE 3, 1950

	Week ended June 3, 1950	Corresponding week, 1949
<b>Data for 94 large cities of the United States:</b>		
Total deaths.....	8,797	8,731
Median for 3 prior years.....	8,731	-----
Total deaths, first 22 weeks of year.....	213,361	211,044
Deaths under 1 year of age.....	597	611
Median for 3 prior years.....	661	-----
Deaths under 1 year of age, first 22 weeks of year.....	13,662	14,342
<b>Data from industrial insurance companies:</b>		
Policies in force.....	69,787,264	70,396,235
Number of death claims.....	10,595	10,152
Death claims per 1,000 policies in force, annual rate.....	7.9	7.5
Death claims per 1,000 policies, first 22 weeks of year, annual rate.....	9.9	9.6

**Reported Cases of Selected Communicable Diseases: United States,  
Week Ended June 3, 1950**

[Numbers under diseases are International List numbers, 1948 revision]

Area	Diph- theria (055)	Enceph- alitis, in- fectious (082)	Influ- enza (490-483)	Measles (085)	Menin- gitis, men- ingococcal (057.0)	Pneu- monia (490-493)	Polio- myelitis (080)
<b>United States</b> .....	<b>75</b>	<b>9</b>	<b>1,590</b>	<b>13,061</b>	<b>72</b>	<b>1,163</b>	<b>132</b>
<b>New England</b> .....	<b>5</b>	<b>1</b>	<b>4</b>	<b>914</b>	<b>2</b>	<b>27</b>	
Maine.....			3	17		5	
New Hampshire.....				2			
Vermont.....				9			
Massachusetts.....	5	1		695	2		
Rhode Island.....			1	5		4	
Connecticut.....				186		18	
<b>Middle Atlantic</b> .....	<b>8</b>	<b>1</b>	<b>3</b>	<b>3,931</b>	<b>14</b>	<b>246</b>	<b>8</b>
New York.....	1	1	1 <sup>2</sup>	1,482	4	166	5
New Jersey.....	1		1	1,390	1	23	3
Pennsylvania.....	6			1,059	9	57	
<b>East North Central</b> .....	<b>5</b>	<b>4</b>	<b>27</b>	<b>4,366</b>	<b>14</b>	<b>194</b>	<b>8</b>
Ohio.....	3		1	678	4	31	5
Indiana.....	1			473		10	
Illinois.....	1	2	2	1,233	2	91	1
Michigan.....		2	6	1,111	6	55	2
Wisconsin.....			18	871	2	7	
<b>West North Central</b> .....	<b>3</b>		<b>22</b>	<b>722</b>	<b>9</b>	<b>83</b>	<b>4</b>
Minnesota.....			9	248	2	10	1
Iowa.....				117		1	2
Missouri.....	1		1	78	3	16	
North Dakota.....			6	3		44	
South Dakota.....				22	1		1
Nebraska.....	1		5	155		3	
Kansas.....	1		1	99	3	9	
<b>South Atlantic</b> .....	<b>10</b>		<b>633</b>	<b>641</b>	<b>9</b>	<b>170</b>	<b>10</b>
Delaware.....				7			
Maryland.....	4		4	47	2	34	
District of Columbia.....			1	35		15	
Virginia.....			561	200	2	70	
West Virginia.....	1		16	73		10	
North Carolina.....	2			76	3		2
South Carolina.....			22	59		13	1
Georgia.....	1		26	35		19	
Florida.....	2		3	109	2	9	7
<b>East South Central</b> .....	<b>17</b>		<b>39</b>	<b>361</b>	<b>9</b>	<b>58</b>	<b>6</b>
Kentucky.....	4		3	120	2	8	
Tennessee.....	5		14	141	6		1
Alabama.....	4		18	78	1	36	1
Mississippi.....	4		4	22		14	4
<b>West South Central</b> .....	<b>18</b>		<b>726</b>	<b>785</b>	<b>10</b>	<b>289</b>	<b>69</b>
Arkansas.....	1		55	70	1	17	1
Louisiana.....				18		16	1
Oklahoma.....	1		27	15	2	21	12
Texas.....	16		644	682	7	235	55
<b>Mountain</b> .....	<b>5</b>		<b>114</b>	<b>643</b>	<b>2</b>	<b>63</b>	<b>5</b>
Montana.....			6	33	1		
Idaho.....			54	135			
Wyoming.....				15			1
Colorado.....	3		1	180	1	32	1
New Mexico.....	2		3	18		12	2
Arizona.....			49	36		16	1
Utah.....			1	226		3	
Nevada.....							
<b>Pacific</b> .....	<b>4</b>	<b>3</b>	<b>22</b>	<b>698</b>	<b>3</b>	<b>33</b>	<b>22</b>
Washington.....				78			1
Oregon.....			18	9		11	3
California.....	4	3	4	611	3	22	18
Alaska.....	1		1			10	
Hawaii.....			1	2			3

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

**Reported Cases of Selected Communicable Diseases: United States,  
Week Ended June 3, 1950—Continued**

[Numbers under diseases are International List numbers, 1948 revision]

Area	Rocky Mountain spotted fever (104)	Scarlet fever (050)	Small-pox (084)	Tularemia (059)	Typhoid and paratyphoid fever <sup>1</sup> (040, 041)	Whooping cough (056)	Rabies in animals
United States.....	23	1,015	1	13	84	2,484	126
<b>New England</b> .....		142			10	338	
Maine.....		6				58	
New Hampshire.....		3				2	
Vermont.....		1				30	
Massachusetts.....		104			9	138	
Rhode Island.....		2			1	55	
Connecticut.....		26				55	
<b>Middle Atlantic</b> .....		232			10	313	15
New York.....		114			4	109	15
New Jersey.....		29				98	
Pennsylvania.....		89			6	106	
<b>East North Central</b> .....	3	320			4	555	10
Ohio.....		101			1	160	4
Indiana.....	2	32				53	
Illinois.....		36			2	77	2
Michigan.....	1	111			1	167	3
Wisconsin.....		40				98	1
<b>West North Central</b> .....		35		1	11	106	2
Minnesota.....		7				36	
Iowa.....		7				10	2
Missouri.....		5		1	11	33	
North Dakota.....		6					
South Dakota.....							
Nebraska.....		13					
Kansas.....		4				27	
<b>South Atlantic</b> .....	9	68		2	9	307	26
Delaware.....		2				8	
Maryland.....	5	12		1		26	
District of Columbia.....	1	4				1	
Virginia.....	1	19			1	135	5
West Virginia.....	1	5			2	24	8
North Carolina.....	1	11				53	
South Carolina.....		1			3	13	4
Georgia.....		5		1	2	41	9
Florida.....		9			1	6	
<b>East South Central</b> .....	3	24			2	128	23
Kentucky.....	1	8			1	49	11
Tennessee.....		9			1	43	4
Alabama.....	1	5				34	6
Mississippi.....	1	2				2	2
<b>West South Central</b> .....		33		9	13	402	43
Arkansas.....		1		7	1	60	2
Louisiana.....					2	1	
Oklahoma.....		6				15	4
Texas.....		26		2	10	326	37
<b>Mountain</b> .....	4	44	1	1		145	2
Montana.....	2	7				12	
Idaho.....		3				26	
Wyoming.....		1		1		1	
Colorado.....	2	24	1			51	2
New Mexico.....		2				17	
Arizona.....		4				35	
Utah.....		3				3	
Nevada.....							
<b>Pacific</b> .....	4	117			25	190	5
Washington.....		19			1	44	
Oregon.....	4	12			1	37	
California.....		86			23	109	5
Alaska.....						2	
Hawaii.....							

<sup>1</sup> Including cases reported as salmonellosis.

<sup>2</sup> Including cases reported as streptococcal sore throat.

## PLAGUE INFECTION IN TEXAS COUNTY, OKLA.

Under date of June 2, 1950, plague infection was reported proved in a specimen of 37 fleas, *Thrassiss fatus*, from 5 grasshopper mice, *Onychomys leucogaster*, trapped May 18, 1950, in Texas County, Okla., about 27 miles northwest of Guymon on United States Highway No. 64, then 7 miles north on a county road to Elkhart, Kans.

## FOREIGN REPORTS

### CANADA

*Provinces—Notifiable diseases—Week ended May 20, 1950.*—Cases of certain notifiable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	New-found-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Brucellosis.....					3	1					4
Chickenpox.....			3		175	186	6	16	61	42	489
Diphtheria.....					2			1			3
Dysentery, bacillary.....						1					1
Encephalitis, infectious.....						2					2
German measles.....			39		26	1,694		123	201	221	2,304
Influenza.....			53			8	3				64
Measles.....			20	40	692	828	46	34	25	116	1,801
Meningitis, meningococcal.....				2		1		1			4
Mumps.....			83	48	145	429	7	58	79	147	996
Poliomyelitis.....						1					2
Scarlet fever.....	3		4	2	79	22	4	6	38	3	161
Tuberculosis (all forms).....	23		1	14	59	31	17	6		33	184
Typhoid and paratyphoid fever.....					4			1		2	7
Veneral diseases:											
Gonorrhoea.....	9		7	7	98	57	11	8	26	56	279
Syphilis.....	2		6	8	53	15	7	8	4	18	121
Other forms.....							1				1
Whooping cough.....	1		7	1	123	53	1	1	1	54	242

### REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

*Note.*—The following reports include only items of unusual incidence or of special interest and the occurrence of these diseases, except yellow fever, in localities which had not recently reported cases. All reports of yellow fever are published currently.

A table showing the accumulated figures for these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday in each month.

#### Cholera

*India*—During the week ended May 20, 1950, 422 cases of cholera, with 236 deaths, were reported in Calcutta. Three hundred and

eight cases were reported during the week ended May 27. Reported cases in other cities in India for the week ended May 20 are as follows: Allahabad 3, Ahmedabad 3 (all fatal), Lucknow 3.

*Pakistan*—During the week ended May 20, 1950, 29 cases of cholera, with 8 deaths, were reported in Chittagong.

#### Plague

*Indochina (French)*—During the week ended May 20, 1950, plague was reported in French Indochina as follows: In rural areas of Kampot, Cambodia, 34 cases, 8 deaths; in the port of Phanthiet, Annam, 6 cases, 2 deaths.

#### Smallpox

*French West Africa*—During the period May 1–10, 1950, 105 cases of smallpox were reported in Niger Territory.

*Gold Coast*—Eighteen cases of smallpox (2 deaths) were reported during the period May 6–15, 1950.

*Indonesia—Java*—The incidence of smallpox in Surabaya rose from 21 cases reported for the week ended March 4, to 103 cases for the week ended April 22. For the week ended April 29, 94 cases were reported.

#### Typhus Fever

*Spain*—During the week ended April 22, 1950, four cases of typhus fever were reported (one in Madrid and three in Segovia).

#### Yellow Fever

*Gold Coast*—During the week ended March 25, 1950, three suspected cases of yellow fever were reported in Akwatia, Oda Area.

*Peru*—On May 2, 1950, one death from yellow fever was reported in Lamas, San Martin Department.