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RADIO PRATIQUE AT THE PORT OF NEW YORK

Radio pratique was introduced at the port of New York on February 1, 1937, by Dr. Charles V. Akin of the Public Health Service, who was then Chief Quarantine Officer of that port. Its purpose is to facilitate the handling of vessels ordinarily subject to quarantine inspection.

Under this procedure certain carefully selected passenger vessels with a satisfactory health and sanitary status may enter specified United States ports and proceed directly to dock without stopping for the customary quarantine inspection, provided the ship's doctor certifies to the quarantine station through the ship's agents, by radio before arrival, that health conditions on board are satisfactory.

To be eligible for radio pratique a vessel must fulfill certain conditions, fully outlined in the following explanation. It must be a passenger vessel employing a full-time doctor on board, must be in a satisfactory sanitary and relatively rat-free condition, must carry no commercial shipments of psittacine birds, and must be in service between certain specified ports which are not infected with quarantinable disease. Health conditions on board during the voyage must have been satisfactory.

Radio pratique is at present in use in several United States ports. The following explanation of the administrative procedures in connection with radio pratique at the port of New York has been prepared by Dr. Robert Olesen, at present Chief Quarantine Officer of the port.

General Information

Applications for the establishment or restoration of eligibility for radio pratique and all questions concerning eligibility under any particular circumstances shall be addressed to the Chief Quarantine Officer in writing. Interpretations, rulings, and opinions will likewise be given only in writing.

Provided all conditions have been met, eligible vessels may proceed directly to their docks without anchoring and undergoing quarantine inspection. After radio pratique or other quarantine formalities have been completed, vessels may remain for brief periods in the quarantine anchorage until ready to proceed to their docks.

Facilities for quarantine inspection are maintained constantly at the United States Quarantine Station, Rosebank, Staten Island, N. Y.

A passenger vessel designated as eligible for radio pratique will not lose its eligibility while engaged in cruises outside its regular itinerary, provided such cruises include acceptable ports and that advance notice is filed of the intention to engage in a specified cruise.

Following the loss of eligibility because of failure or inability to comply with radio pratique requirements, the agents of a vessel may apply for restoration of the privilege. The Chief Quarantine Officer may restore radio pratique when full compliance with the requirements is again assured and observed.

There are no charges incident to the operation of radio pratique. However, charges for rat infestation inspection, sanitary inspection, fumigation, and other required quarantine treatment will be made in accordance with the official schedule.

The following definitions, rules, and conditions govern the eligibility of vessels, the method of applying for radio pratique, and the procedure whereby this privilege is granted to vessels primarily engaged in carrying passengers from foreign ports to the port of New York.

Agents seeking radio pratique for a vessel must submit an application in accordance with the following form:

---------- (Date)

The CHIEF QUARANTINE OFFICER,
Rosebank, Staten Island, N. Y.

SIR: It is requested that the ---------- (Nationality and name of vessel) be considered for radio pratique. The vessel is continually maintained in a clean and sanitary condition and is believed to be rat-free.

The following data are submitted:

1. The vessel operates on a regular schedule with a fixed itinerary, and is licensed as a passenger-carrying vessel by the Bureau of Marine Inspection and Navigation of the United States Department of Commerce.
2. The total cargo-carrying capacity of this vessel is -------- tons.
3. The foreign ports regularly visited are ----------
4. The vessel reaches New York at intervals of ----------
5. The vessel carries as a regular member of the crew a doctor who is a full-time employee.
6. Name of the ship's doctor ----------

It is understood by the undersigned steamship agents that should this application be approved, the vessel may enter the port of New York without stopping for quarantine inspection. Prior to each entry of the vessel, application will be made by radio to the Chief Quarantine Officer through the undersigned agents. The application for radio pratique will include all information required by the rules and regulations governing this privilege.

---------- Company.
By ----------
---------- (title).

Definitions

1. *Communicable diseases.*—These are of particular interest to civil health authorities and must be reported to the Chief Quarantine

Officer at the time of requesting radio pratique and also directly to the department of health having jurisdiction, as prescribed by the Sanitary Code. The communicable diseases include the following:

Chickenpox.
Diphtheria.
Dysentery (amebic or bacillary).
Encephalitis.
Gastrointestinal disease.
German measles.
Measles.
Meningitis.
Mumps.
Paratyphoid fever.
Poliomyelitis (infantile paralysis).
Scarlet fever.
Tuberculosis.
Typhoid fever.
Whooping cough.

Reporting to departments of health: Insofar as New York City is concerned the duty of ship's officers on incoming vessels to report and detain on board persons having communicable disease is set forth in article 18 of the Sanitary Code. Reporting is also required to the city department of health of births, deaths, and marriages at sea of residents of the city of New York, in addition to the reporting of all cases of communicable disease. When vessels dock at ports in the metropolitan area other than New York, viz, Jersey City, Hoboken, etc., reports of communicable disease, births, deaths, and marriages must be submitted promptly to the department of health having jurisdiction.

When communicable disease develops between the time radio pratique is granted and the docking of the vessel within the city limits, the appropriate city department of health must be notified immediately by the ship's officers or agents. In the meantime the sick must be isolated pending removal or other disposition by representatives of the department of health.

The Chief Quarantine Officer will, upon request, assist the officers and agents of vessels in establishing official contact with the department of health in order that acceptable procedures may be instituted.

2. *Quarantinable diseases.*—Because of their more serious import, special laws and regulations govern the so-called "quarantinable" diseases. Precautions must be taken to prevent the embarkation and transportation to United States ports of persons having such diseases. However, when a vessel arrives with quarantinable disease aboard, it must stop in the quarantine anchorage and await the treatment prescribed by the quarantine laws and regulations. Immediate notification to the Chief Quarantine Officer of the presence on a vessel of these diseases is among the foremost requirements. The quarantinable diseases have been officially designated as follows:

Anthrax.
Cholera.
Leprosy.
Plague.
Psittacosis (parrot fever).
Smallpox.
Typhus fever.
Yellow fever.

3. *Doctors (ships').*—A fully qualified and regularly employed physician devoting whole time to his duties, acceptable to the steamship company and the Public Health Service by reason of skill, experience, reputation, and registered credentials. A photostatic copy of the license to practice medicine, issued by a State board of medical examiners, will be accepted as prima facie evidence of a doctor's professional qualifications. When a ship's doctor is not a citizen of the United States, a photostatic copy of the certification of his professional qualifications from the country of which he is a citizen will receive due consideration.

With his credentials an applicant for registry as doctor on radio pratique vessels shall submit a recent, unmounted photograph of himself.

Special considerations: (*a*) A ship's doctor may serve on vessels other than the one to which he originally was appointed, but notice of such transfer must be sent promptly to the Chief Quarantine Officer.

(*b*) The agents of a vessel anticipating radio pratique shall communicate to the Chief Quarantine Officer the name of the eligible ship's doctor, preferably prior to the vessel's arrival in New York.

(*c*) When a steamship company requiring the services of a ship's doctor makes a definite tender of employment to a qualified physician, the Public Health Service requires for its consideration photostatic copies of documents attesting the professional qualifications of the physician. The list of eligible ships' doctors is not established by the Public Health Service but by the steamship company having definite need of medical service. However, the Public Health Service maintains registries of ships' doctors who are on the active or inactive lists and are eligible for service on radio pratique vessels.

The Public Health Service encourages the shipping interests, and physicians, too, to regard the position of ship's doctor as a full-time and permanent career worthy of the best traditions of medicine. Radio pratique will achieve its fullest measure of success when the ship's doctor is fully conversant with and alert to his responsibility in safeguarding the public health.

4. *Psittacine birds* (including African grays, Amazons, cockatoos, lories, lorikeets, love birds, macaws, Mexican double heads, parakeets, parrots, and all similar birds).

(*a*) *A commercial shipment* consists of one or more birds imported for the purpose of sale. A vessel with such a shipment loses for the time being its radio pratique privileges and must stop for quarantine inspection. The presence of such a commercial shipment of psitta-

cine birds will necessitate the application of special measures, as follows:

(1) Birds of the parrot family of an age greater than 8 months may be permitted entry at certain United States ports designated by the Surgeon General of the Public Health Service. (The port of New York is not one of these.) The conditions under which such commercial shipments may enter have been specified in Foreign Quarantine Division Circular No. 67, of the Public Health Service, issued May 11, 1939, and in greater detail in title 42, chapter 1, of the regulations dated April 28, 1939, and issued by the United States Treasury Department. Copies of these regulations may be obtained upon application to the Chief Quarantine Officer.

(2) Commercial shipments arriving in New York or other ports lacking facilities for the quarantine of psittacine birds will not be permitted to land.

(*b*) *Privately owned birds* not to exceed three in number may be admitted provided they have been in the owner's possession at least 2 years immediately prior to entry, are healthy, have not been in contact with other birds of the parrot family, and will not be offered for sale, barter, be given away, or placed on public exhibition. In addition to an inspection by a Public Health Service representative, a permit will be required from the department of health of the city of New York for transfer through and away from the city and State of New York which are prohibited territory.

The presence of privately owned birds is not sufficient grounds for withholding radio pratique, but it should be known that the Public Health Service discourages the importation of all psittacine birds because of the possibility of introducing psittacosis, a disease of high infectivity and heavy mortality.

(*c*) The presence of psittacine birds must be made known simultaneously with the request for radio pratique. Subsequent action will depend upon the circumstances. However, all birds must be held either on the vessel or at the dock until inspected by a representative of the Public Health Service.

5. *Rat-attractive cargo.*—Includes all foodstuffs, raw or refined, intended for human or animal consumption, exclusive of ship's stores, when stowed in bulk or packed in containers of nonratproof materials.

6. *Rat-harboring cargo.*—Includes all cargo packed, crated, boxed, bagged, or baled in such a manner that the individual package, crate, box, bag, or bale may be entered by a rat, either through normal

openings in the container or through holes cut by rats and which afford safe harborage to the rat after gaining entry.

7. *Vessels.*—(*a*) *Cargo vessels.*—For the purpose of radio pratique this is one not within the description of a "passenger" vessel as defined below. A vessel regularly carrying an appreciable amount of rat-attractive or rat-harboring cargo, irrespective of the number of passengers accommodated, is ineligible for radio pratique.

(*b*) *Passenger vessels:* One operating on a regular schedule with a fixed itinerary, having for its principal purpose the carrying of passengers, and licensed as a passenger-carrying vessel by the Bureau of Marine Inspection and Navigation of the United States Department of Commerce.

Eligibility

A passenger vessel will be considered for radio pratique, provided:

(1) A qualified and approved, full-time ship's doctor is employed. (The name of an eligible ship's doctor should be communicated to the Chief Quarantine Officer before the vessel leaves port on its outward voyage.)

(2) It has not, on the proximal voyage, touched at a foreign port against which special measures have been invoked because of quarantinable disease being present or suspected of being present.

(3) It carries no commercial shipments of psittacine birds (parrots, etc.).

(4) It is maintained in a relatively rat-free condition.

(5) It is maintained in sanitary condition and there is satisfactory cooperation from the ship's personnel.

(6) There has been no known or suspected quarantinable disease during the voyage, and no unusual incidence of any other communicable disease.

Vessels eligible for radio pratique.—Passenger vessels in regular service between:

(*a*) New York and certain European ports.

(*b*) The east and west coasts of the United States via the Panama Canal.

(*c*) New York and the Panama Canal.

(*d*) New York and Bermuda, or ports in the West Indies. Also passenger vessels engaged in seasonal cruises to Bermuda or ports in the West Indies.

The designation "West Indies" shall include ports in the following Island groups:

(1) Greater Antilles—including Cuba, Jamaica, Puerto Rico, and Haiti.

(2) Lesser Antilles—including Windward Islands, Leeward Islands, and numerous smaller islands.

(3) The Bahamas.

(*e*) New York and certain ports of Central and South America.

Vessels ineligible for radio pratique.—(*a*) Cargo vessels.

(*b*) Passenger vessels having either known or suspected quarantinable disease or an unusual incidence of any other communicable disease.

(*c*) Vessels from ports against which special measures have been invoked because quarantinable disease is present or is suspected of being present.

(*d*) Passenger vessels with commercial shipments of birds of the parrot family.

(*e*) Passenger vessels which do not carry a qualified and full-time doctor.

(*f*) Vessels not approved by the Public Health Service because of sanitary defects.

Radio Pratique Procedure

Not more than 24 hours nor less than 12 hours before the expected arrival of an eligible vessel at New York, a message shall be addressed by the ship's officers to the Chief Quarantine Officer through the agents. This message shall contain the information required for determining whether the vessel may proceed to its dock without stopping for quarantine inspection.

It will not be necessary, in the preliminary request for radio pratique, to give the number of passengers and crew. (This information is required in the final written confirmation. See p. 1277.) Insofar as the Public Health Service is concerned the message may be transmitted in code, provided the following essential information is included:

(1) Known or suspected quarantinable disease.

(2) Incidence of any other communicable disease.

(3) Commercial shipments of psittacine birds.

Applications for radio pratique will be received by telephone and acted upon only between the hours of 9 a. m. and 4 p. m. daily, including Sundays and holidays. These telephone messages will be addressed to the Officer of the Day, Quarantine Station, Telephone Gibraltar 7–1400.

It will no longer be necessary to confirm this request in writing.

If the application is approved the master of the vessel will be notified by radio, through its agents, the provisions, if any, being indicated at the time the message is sent.

The Government will be subject to no expense in connection with messages used in establishing radio pratique.

At 4 p. m. daily the quarantine station will communicate with the Customs, Immigration, and Post Office officials, giving the names of vessels to which radio pratique has been granted and which are scheduled to arrive on the following day. At the same time the approximate hour at which it is expected the vessel will pass the quarantine station will be given.

When a vessel eligible for radio pratique but unable, because of unusual circumstances, to comply with the usual requirements, is passed without boarding by the quarantine officer, an immediate report of the granting of modified radio pratique will be made by telephone to the above mentioned Federal agencies.

As soon as radio pratique is granted, formal notification in writing on Federal Security Agency Form No. 1940–A will be sent by the Chief Quarantine Officer to the Collector of Customs.

FINAL WRITTEN CONFIRMATION (VERY IMPORTANT!)

As soon as a vessel reaches its dock a final confirmatory statement shall be prepared by the ship's officers in conformity with the accompanying sample. This statement must be completed in its entirety and dispatched immediately by special delivery to the Chief Quarantine Officer.

The confirmation form, not being available from the Public Health Service, must be printed, typed, or otherwise duplicated by each steamship company.

Loss of radio pratique privileges through disuse.—When radio pratique has not been used for a period of 6 months, the vessel will automatically be removed from the eligible list. Before eligibility is restored a new application will be required, observing all of the formalities originally stipulated for placing the vessel on the radio pratique list. These requirements will include an acceptable ship's doctor, freedom of the vessel from rat infestation, and satisfactory sanitation.

Lapsed radio pratique will not be restored until after the first reentry of such a vessel and after an inspection has disclosed the existence of conditions satisfactory to the Public Health Service.

Final Confirmation on Radio Pratique

(By special delivery mail)

The CHIEF QUARANTINE OFFICER,
United States Quarantine Station, Rosebank, Staten Island, N. Y.

SIR: The _____ S/S _____
(Nationality) (Name)

arrived in New York on _____ with the following:

Officers and crew _____
First- or cabin-class passengers _____
Second- or tourist-class passengers _____
Third-class passengers _____
Stowaways _____
Workaways _____

There was no known or suspected quarantinable disease during the voyage.

The names, home addresses, and ailments of all persons, passengers and crew, ill during the voyage from a communicable disease, including diarrhea, dysentery, typhoid fever, or any other gastrointestinal ailment, are listed on a separate sheet accompanying this statement.

If no such illnesses, so state _____.

Place and date of last fumigation certificate or last fumigation exemption certificate _____
(Place and date)

Psittacine birds (parrots, etc.) _____

Ports touched during voyage _____

Bills of health from ports of call accompany this statement

CERTIFIED CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF

_____ _____
(Ship's doctor) (Ship's master)

THE GROWTH AND EFFECTS OF THE TUBERCLE BACILLUS ON THE CHORIO-ALLANTOIC MEMBRANE OF THE CHICK EMBRYO: A METHOD FOR STUDIES IN CHEMOTHERAPY[1]

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The length of time required for tubercle formation in experimental animals inoculated with tubercle bacilli has raised the question as to whether or not this period could be shortened by the cultivation of the bacillus on the chorio-allantoic membrane of the chick embryo. Goodpasture and Anderson in 1937 (*1*) and Costil and Bloch in 1938 (*2*) successfully obtained tubercles in the chorio-allantoic membrane from implants of suspensions of *Mycobacterium tuberculosis avium* as early as 7 days after inoculations. It remains to be shown whether

[1] From the Division of Chemotherapy, National Institute of Health.

tubercles so produced can be consistently differentiated from cellular lesions producible by injections of dead tubercle bacilli. If this could be shown, then the production of tubercles in the membrane, the time required for their appearance, and the incidence of their occurrence might be correlated with the virulence of the strain of the bacillus. Such a technique might thus be used to compare the pathogenicity of different strains of tubercle bacilli. In addition the method might be useful for testing the tuberculocidal action of drugs or their ability to attenuate the bacillus.

The present paper deals with observations on the principal morphological changes which occur in the chorio-allantoic membrane of the chick embryo after implantations of several strains of tubercle bacilli on the outer surface of the membrane.

MATERIAL AND METHODS

Four strains of tubercle bacilli were used in this work.

1. Human H 37 (Saranac).[2] This strain after cultivation in this laboratory on Jensen's egg medium was found to be one of low virulence. When injected intraperitoneally into guinea pigs, 1 mg. failed to produce generalized tuberculosis or any evidence of tuberculous infection beyond a few miliary tubercles in the spleen or liver in some of the animals. In a personal communication Dr. Gardner wrote in reference to it as follows: "This strain will maintain a standard degree of infectivity when grown on Proskauer and Beck's synthetic medium. If we attempt to carry it on a solid medium, it immediately reverts" (to the avirulent form).

2. Human H 37 (Phipps).[3] This strain has been carried at the Phipps Institute for several years on either Long's synthetic medium or Dorset's egg medium and has been passed through animals several times to maintain its virulence. It was transferred to Jensen's egg medium after being received in our laboratory. We have no data on its pathogenicity in guinea pigs.

3. Human A 27 (Phipps).[3] This strain was isolated at the Phipps Institute from a patient in 1938; and after a preliminary cultivation period on 3 percent glycerol agar slants it was maintained regularly on Dorset's medium before being received by us, after which it was transferred to Jensen's egg medium. In our laboratory 0.5 mg. injected intraperitoneally produced generalized and usually fatal tuberculosis in guinea pigs in 40 to 60 days.

4. Bovine Ravenel (smooth) (Phipps).[3] In our laboratory when this strain was injected intravenously into rabbits in doses of 0.015

[2] Received through the courtesy of Dr. Leroy U. Gardner, Saranac Laboratory for the Study of Tuberculosis.

[3] Obtained through the courtesy of Dr. Florence B. Seibert of the Henry Phipps Institute.

mg., extensive tuberculosis was produced, terminating in death in 30 to 50 days. This highly virulent strain was maintained on modified Lowenstein's bone marrow infusion medium until received in our laboratories, at which time it was transferred to Jensen's egg medium.

For comparison, heat-killed bacilli, normal saline solution, and a saline solution of tuberculin were also placed on the surface of the chorio-allantoic membrane. The heat-killed bacilli used in this work were obtained by autoclaving H 37 cultures of the Saranac strain, which had been grown on Jensen's egg medium. The tuberculin used in these experiments was a sample of the highly purified protein (PPD) for which we are indebted to Dr. Seibert. This was dissolved in normal saline to make a 1-percent solution and used in amounts of 1.0 and 2.0 mg. Experiments with normal saline solution were used as controls.

Suspensions of bacilli of known concentrations were obtained by weighing the bacilli aseptically in sterile watch glasses and diluting this known quantity with the desired volume of sterile normal salt solution. A finely dispersed suspension of bacilli was obtained by rotating the suspension for half an hour in sterile pyrex flasks with agate balls in a White bacteria grinder.

Sterile 1 cc. tuberculin syringes were used to measure out a given volume to each egg, 0.2 cc. being commonly used.

After several futile attempts to use young embryos, eggs of 9 days' incubation were selected as the most suitable for inoculation, since the survival rate was much better when the older embryos were used. The eggs were carefully washed with alcohol and placed in an egg support (fig. 1), especially designed so that the egg could be held rigidly on its side and turned on a revolving turntable when the shell was cut.

The technique employed was essentially as described by Goodpasture and Anderson (*1*). The upper side of the egg was washed with 95 percent alcohol with a sterile swab and painted on the upper side with melted paraffin. Small strips of "parafilm" about 7 mm. wide were then folded to make a square about 15 mm. on a side. Several thicknesses of this ribbon formed a ridge to support the cover slip. This area was again painted with hot sterile paraffin and a square opening about 13 mm. on a side was cut with a rotating carborundum disk. The shell was then carefully lifted off and the shell membranes removed with forceps without tearing the fetal membranes. The suspension of tubercle bacilli was then implanted on the surface of the membrane and a sterile cover glass sealed over the top with sterile paraffin.

Daily observations were made on the condition of the embryo and the membranes. After 6 or 7 days the cover glass was removed and several cc. of neutral 3 percent formaldehyde were added to all

surviving embryos. This method of fixing and hardening the membrane *in situ* prevented shrinkage. After 15 minutes Zenker-formol solution was added and the tissue fixed for 5 minutes. The exposed membranes were then cut away with small curved scissors and the tissue left in Zenker's solution overnight. The membranes were then washed, dehydrated initially in 50 percent alcohol, passed through Lugol's solution, decolorized, further dehydrated, cleared in xylol, embedded in "histowax A," sectioned and routinely stained by the Ziehl-Neelson and methylene blue method and duplicates with hematoxylin and eosin.

In the more recent preparations "cellosolve" was substituted for the more concentrated alcohol in the dehydration process. This gave better results, prevented hardening, and reduced the time required by the older methods of dehydration with a graded series of alcohols.

MORPHOLOGICAL STRUCTURE OF THE CHORIO-ALLANTOIC MEMBRANE AND SOME CHANGES NOTED

The chorio-allantoic membrane of 9 days' incubation period covers the embryo and extends approximately three-quarters of the way around the yolk mass as far as the albumen. The membrane consists of an outermost epithelial layer derived from the ectodermal layer of the chorion. This layer lies in close contact with the shell membrane and consists of two layers of cells except where it is penetrated by the capillaries. Here it is a single cell layer thick so that the leucocytes of the circulating blood readily come in contact with the cell membranes on the surface.

Lying directly beneath the outer epithelial layer is the mesodermal layer composed largely of connective tissue through which the blood vessels extend. The tissue of this layer is composed of a loose network of mesoblastic cells, polygonal and spindle-shaped, embedded in a homogeneous clear ground substance. The proliferation and differentiation of cells of this layer give rise to the tubercle.

The under surface of the mesodermal tissue is lined with a layer of interlocking epithelial cells derived from the entoderm. These are arranged in a flat pavement of cells which forms the innermost layer of the chorio-allantoic membrane. The morphological difference between this layer of flattened single cells and the thicker cell layer of the outer surface facilitates the orientation of the membrane in sections. Thus far we have no experimental data to indicate that this inner epithelial layer is affected by implantation of bacilli on the outer surface or by the development of tubercles in the mesodermal layer.

The evidence from our experiments has indicated that proliferation of the cells of the chorio-allantoic membrane can be produced experimentally by both mechanical as well as chemical injury. The removal of the shell membrane alone tended to stimulate the proliferation of the surface cells. Frequently, when the shell membrane was removed the capillaries lying near the surface were injured, resulting in small hemorrhagic areas. Beneath these areas of cellular exudate the epithelial cells proliferated, but these thickenings caused by mechanical injury appeared different from the more extensive cellular proliferation caused by chemical injury.

In experiments in which normal saline was placed on the chorio-allantoic membrane, the membrane showed no marked change other than a minor thickening such as was produced by slight mechanical injury.

Chemical injury from tuberculin and the implantation of live or dead tubercle bacilli on the chorio-allantoic membrane produced proliferation of the cells of the outer ectodermal epithelial layer, or in the cells of the mesodermal layer or both. It should be especially emphasized that embryos from eggs of hens of the same breed may differ widely in their response to a given amount of any particular strain of bacilli. Also, there were no specific morphological changes in the membranes which could be associated with any one strain to the exclusion of the others.

Proliferation of the ectodermal epithelium sometimes resulted in a form of hyperplastic nodular thickening protruding from the surface of the membrane as indicated in some of the experiments with live bacilli of the Ravenel strain. The proliferating cells of the outer epithelial layer commonly, however, produced only a general thickening along the surface, becoming squamafied and gradually sloughing off. Invaginations of the epithelium also occurred at times and epithelial "pearls" in some preparations appeared to have become detached from the outer epithelial layer and imbedded in the mesodermal layer.

Proliferation of the mesoblastic cells deep in the membrane had no direct association with the areas of surface proliferation since multiplication of the mesoblastic cells occurred beneath normal as well as injured ectoderm. Cellular proliferation and differentiation in the mesodermal tissue gave rise to foci of dense clusters of monocytes. This was accompanied by increased infiltration of polymorphonuclear leucocytes. Eosinophils were common among these cells. With the evolution of the tubercle the monocytes increased in number and large phagocytes with engulfed bacilli often made their appearance.

A. H 37 (Saranac). The first strain of bacilli implanted on the chorio-allantoic membrane was the avirulent H 37 strain obtained from the Saranac Laboratories. Of 58 embryos so treated 29 survived and of these only 4 showed gross tubercles, while 17 showed slight thickenings and opacities. Of the 29 surviving embryos, 14 received 0.25 mg. of tubercle bacilli; the rest received 1 mg. The former were opened on the sixth day and the latter on the tenth day after inoculation.

Microscopic examination of sections of the membranes of the surviving embryos showed 4 with tubercles and 25 with mesoblastic proliferation of varying degrees of intensity. The cellular aggregates of these proliferating areas were composed of cells resembling fibroblasts and monocytes (fig. 2). Basophilic polymorphonuclear cells were recognizable and eosinophils were present throughout the membrane. Proliferation of the surface epithelium (fig. 3) was present in sections of 26 membranes, with tubercle bacilli on the surface or within the epithelial cells.

B. H 37 (Phipps). In one experiment, of 40 embryos implanted with 1 mg. of bacilli of this strain, only 12 survived 10 days, but of these, 3 had large tubercles 1 to 5 mm. in diameter (fig. 5). Microscopic examination of the membranes showed that 8 out of the 12 had tubercles in various stages of development (fig. 4). All membranes showed epithelial proliferation of the outer layer with numerous bacilli within the cells. Extensive mesoblastic proliferation was present in some preparations with greater numbers of eosinophils and epithelioid aggregates as compared with the membranes implanted with bacilli from the preceding Saranac strain. Sections of 10 membranes showed clumps of bacilli within the cells deeply imbedded in the mesodermal tissue. Comparison of the incidence of tubercle formation and cell proliferation produced by this strain and the H 37 (Saranac) strain suggests that the former has at present a higher virulence.

C. A 27 (Phipps). Of 32 embryos which received 1 mg. each of bacilli of this strain, only 8 survived 6 days, but all of these had extensive tubercle formation. All membranes presented numerous tubercles ranging in size from 1 to 4 mm. in diameter (fig. 6). In every membrane microscopic examination showed these areas to be typical discrete and conglomerate tubercles (fig. 7). The epithelial proliferation was extensive, with numerous clumps of bacilli actively growing in the cells. Cell aggregates in the mesoderm were numerous and these also showed actively growing bacilli. Except in one instance, the tubercles showed typical caseation necrosis.

D. Ravenel, bovine "smooth." In two experiments with this strain the membranes of 38 embryos were implanted with 0.25, 0.5, and 1.0 mg. of bacilli per egg. Of these 11 were alive when opened. Three receiving 0.25 mg. and 6 receiving 0.5 mg. were opened 6 days after inoculation, and 2 which received 1 mg. were opened 4 days after inoculation.

Five of the 11 showed tubercles both grossly and microscopically. Two others showed visible thickenings of the membrane but these were not sufficiently advanced to be classified as tubercles. Thickening of the outer epithelial cell layer was present in all membranes and all except one showed tubercle bacilli. Proliferation in the epithelial outer cell layer often resulted in nodules protruding above the surface of the membrane (fig. 8). Mesodermal proliferation was present in all except one and in three this was extensive. Aggregates of epithelioid cells were present in all except one, and in six membranes acid-fast bacilli were found deeply imbedded in the cells of the mesoblastic layer. Caseation necrosis was not observed.

HEAT-KILLED TUBERCLE BACILLI

Of the two experiments comprising 61 eggs implanted with 1 mg. of heat-killed bacilli of the H 37 strain, 16 survived. These were opened between the sixth and ninth day after implantation. Neither gross nor microscopic tubercles were present. Five showed slight gross thickenings of the membrane, while 13 showed some cellular proliferation in the mesoderm, and epithelial thickenings with acid-fast organisms on the surface only (fig. 9). Eosinophils were present especially in areas of mesodermal proliferation. Epithelioid aggregates were present in only four instances. These also showed a few migratory clasmatocytes which appeared to have engulfed dead tubercle bacilli from the surface of the membrane.

TUBERCULIN

In order to determine whether the cellular reactions of the membrane to heat-killed bacilli were due to chemical effects or to the mechanical stimulus of clumps of dead bacilli on the surface, a series of membranes was inoculated with 2.0 mg. of tuberculin in normal salt solution. Of the 12 surviving embryos which were opened on the eighth day after inoculation none showed tubercles, but 9 showed thickening of the membrane especially near the larger blood vessels. Microscopically 11 showed distinct proliferation of the outer epithelial layer, moderate mesoblastic proliferation and marked increase in the eosinophils. Necrosis was present in the proliferated epithelial layer and a few aggregates of epithelioid cells were present in the mesodermal

tissue. The proliferation of both the outer epithelial layer as well as the mesodermal tissue, while similar in character, was slightly more extensive when the tissue was treated with tuberculin (fig. 10) than when planted with heat-killed tubercle bacilli.

DISCUSSION

In table 1 are summarized the data derived from gross and microscopic examination of sections of the chorio-allantoic membrane of the chick embryo implanted with several strains of living tubercle bacilli. In membranes implanted with H 37 (Saranac) or the Ravenel bovine "smooth" only one or two large tubercles were found. In the membranes implanted with the H 37 Phipps strain discrete large tubercles and six or seven minute tubercles were usually present (fig. 5). With the more virulent A 27 human strain the membranes were studded with numerous tubercles (fig. 6). The incidence of tubercle formation on the membranes differed greatly with the strains. In the Saranac H 37 strain only 13 percent of the membranes showed tubercles, in the Phipps H 37, 75 percent, and in the more virulent A 27, 100 percent.

Microscopic examination of the membranes gives supporting evidence of the greater virulence of strains A 27 and Phipps H 37 than the Saranac H 37. The 45-percent incidence of tubercle development

EXPLANATION OF PLATES

FIGURE 1.—Mounting block for holding instruments and egg during operation. A. Screw for clamping revolving table in position. B. Nut which raises or lowers arms of egg clamp C. C. Rubber-tipped clamp for holding egg rigidly in position. D. Support for holding sterile curved coverslip forceps. E. Holders for sterile dental reamers used for lifting exposed shell membrane. F. Holders for small toothed forceps used for removing shell and shell membrane. G. Clamp for holding drill. H. Groove holding pyrex sterile glass cover which is placed over exposed embryo while filling syringe for implantation.

FIGURE 2.—Section of membrane 6 days after implantation with live tubercle bacilli of the H 37 Saranac strain, showing clusters of monocysts (M) deep in the mesodermal layer. Encircled areas show clumps of tubercle bacilli within the cells. Stain: Ziehl-Neelson and methylene blue. (× 235)

FIGURE 3.—Section of membrane 6 days after implantation with live tubercle bacilli of the H 37 Saranac strain, showing localized proliferation of only the outer epithelial layer of the chorio-allantoic membrane. Stain: Ziehl-Neelson and methylene blue. (× 87)

FIGURE 4.—Section through membrane 10 days after implantation with bacilli of H 37 (Phipps) strain, showing tubercle with caseation necrosis (A), numerous small tubercles just beginning (B), and extensive focal proliferation of epithelium of outer layer (C). Stain: Hematoxylin and eosin. (× 25)

FIGURE 5.—Gross appearance of same membrane as shown in sectioned, stained preparation (fig. 4). Tissue fixed 10 days after implantation with live tubercle bacilli of a culture of H 37 (Phipps). Numerous small nodules mark tubercles in various stages of development. (× 2).

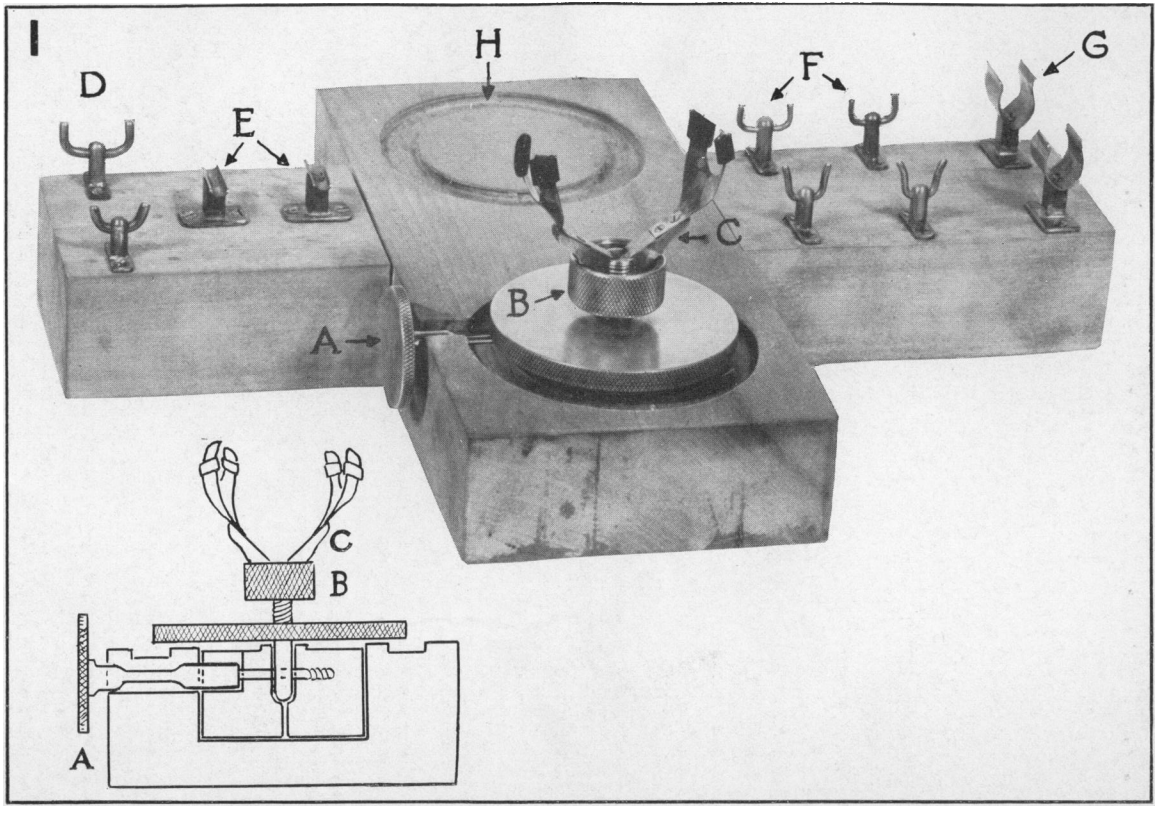
FIGURE 6.—Membrane 6 days after implantation with live tubercle bacilli of the more virulent A 27 strain, showing extensive miliary and conglomerate tubercles. (× 2½).

FIGURE 7.—Section of membrane 6 days after implantation with bacilli of the A 27 strain, showing discrete and conglomerate tubercles, many with caseation necrosis. Stain: Hematoxylin and eosin. (× 85).

FIGURE 8.—Section of membrane 6 days after implantation of bacilli of the bovine Ravenel "smooth" strain showing nodular outgrowth of epithelium and extensive tubercle formation in the mesoderm. Stain: Hematoxylin and eosin. (× 105).

FIGURE 9.—Section of membrane 7 days after implantation of heat-killed bacilli on the membrane, showing extensive mesodermal proliferation and edematous swelling. Stain: Hematoxylin and eosin. (× 96).

FIGURE 10.—Section of membrane 8 days after deposition of 0.2 cc. of 1 percent tuberculin solution on surface of outer layer, showing proliferation and necrosis of outer epithelial layer and extensive mesodermal proliferation. Stain: Hematoxylin and eosin. (× 96).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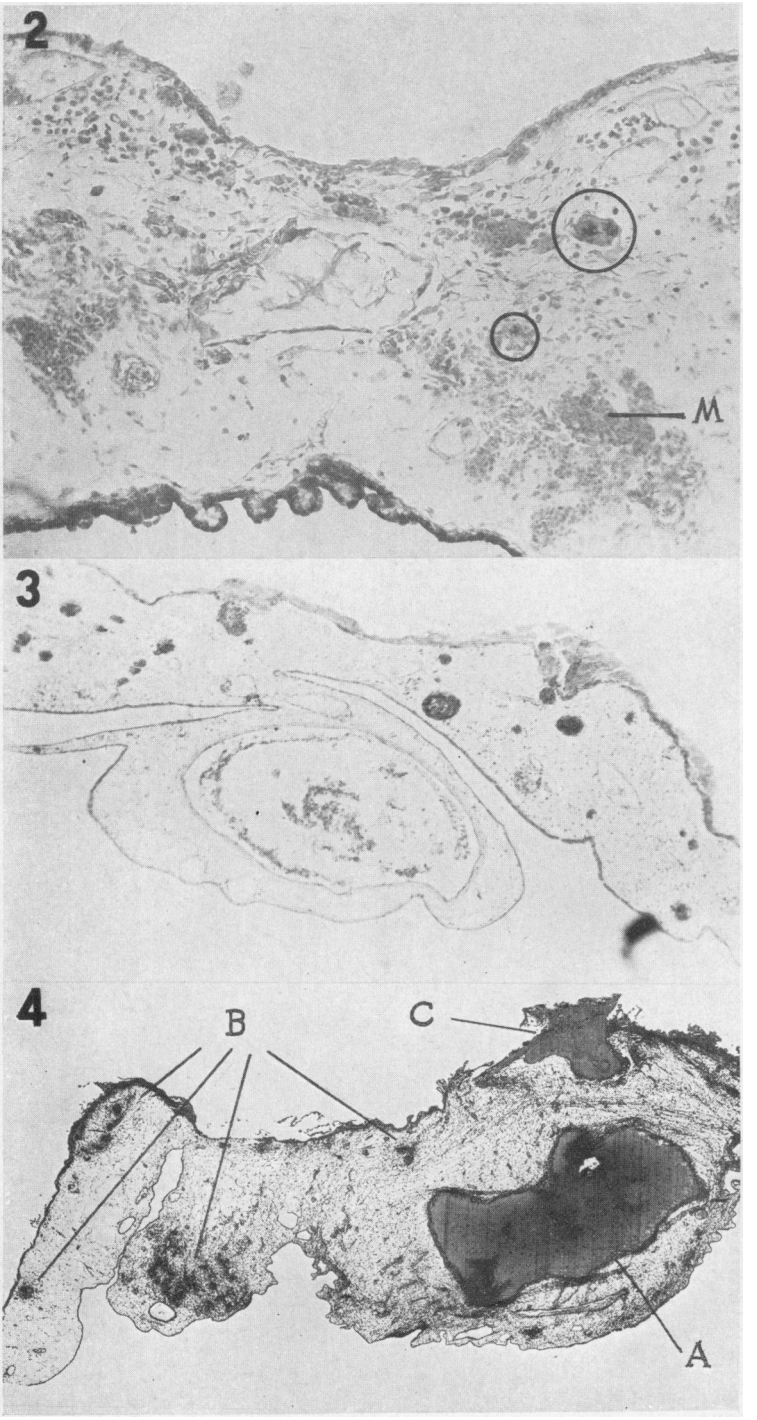
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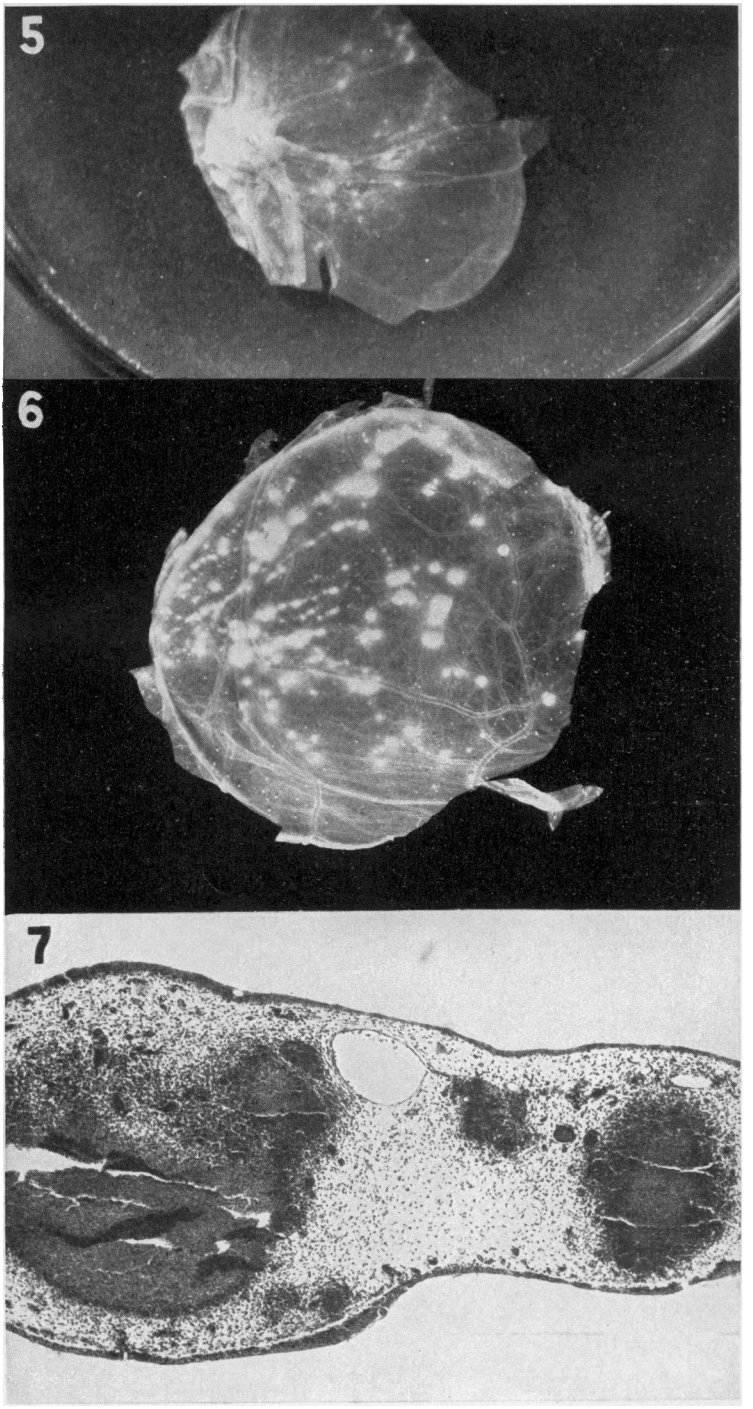
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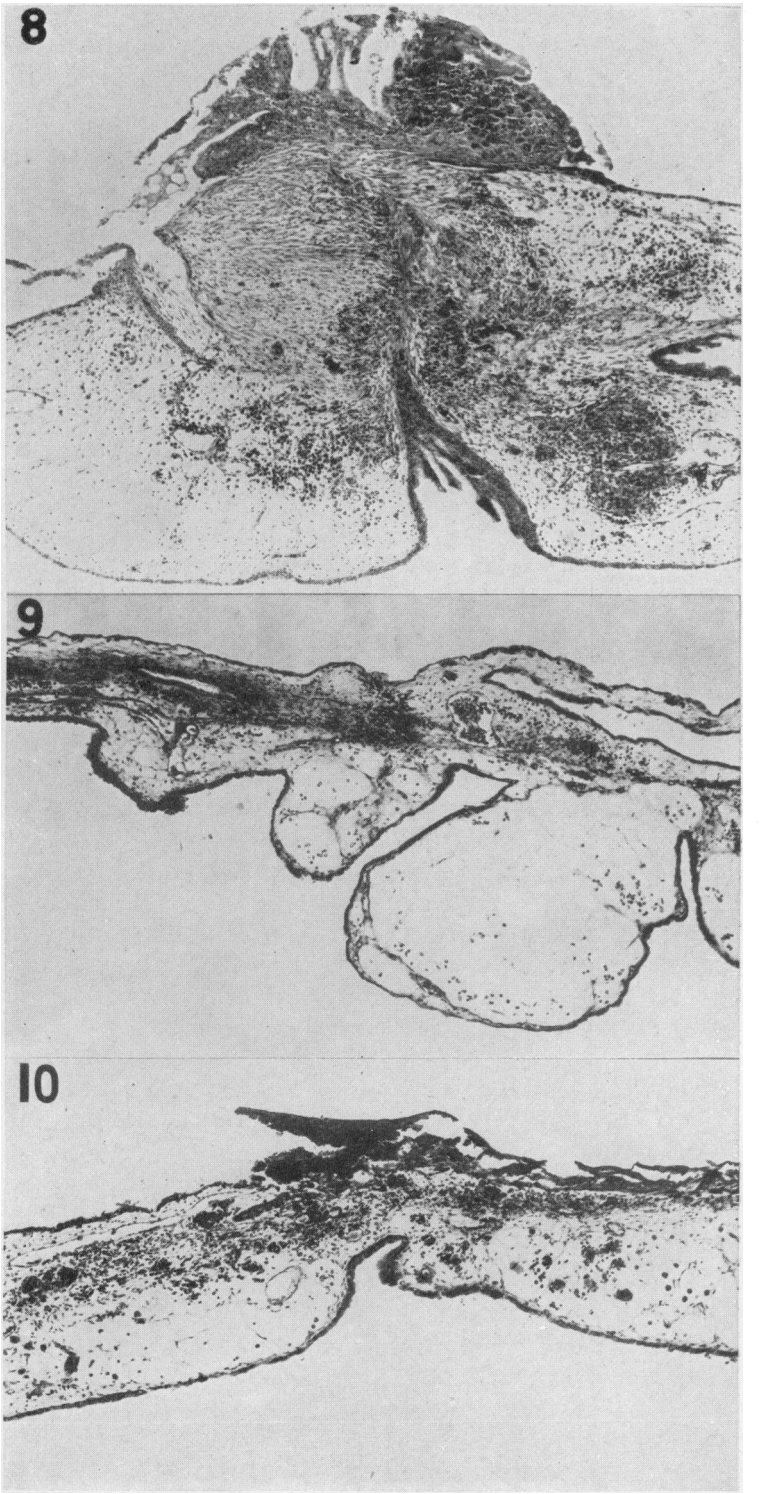
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TABLE 1.—*Effects of implantation of tubercle bacilli of different strains on the chorio-allantois*

Strain	Experiment No.	Dose in mg.	Days of experiment	Number of survivals	Membranes with tubercles: Gross	Membranes with tubercles: Microscopic	Membranes with tubercles: Percent incidence	Number of membranes with extent of proliferation: Small visible opacities or thickenings: 0	+	++	+++	Microscopic proliferation of—: Epithelium: 0	+	++	+++	Mesoderm: 0	+	++	+++
H 37 (Saranac) Human	1	0.25	6	14	4	4	13	1	13				9	2	3		9	2	3
	2	1.00	10	15	0	0		11	4			3	11	2		3	11		
H 37 (Phipps) Human	2	1.00	10	12	2	9	75	1	5	6		1	10	1			4	6	2
A 27 (Phipps) Human	4	1.00	6	8	8	8	100				8		1	3	4				8
Ravenel bovine (S)		.25	6	3	1	1	45	1	2				3			1	1	1	
	5	.50	6	6	2	2		3	3				4	2			5		
		1.00	4	2	2	2									2				3
Heat-killed H 37 (Saranac)	6	1.00	6–9	16	0	0	0	11	5			3	10	3		3	12	1	
Tuberculin	7	2.00	8	12	0	0	0	3	3	6		1	6	4	1		7	4	1

0=No proliferation.
+=Slight.
++=Moderate.
+++=Extensive.

with the Ravenel strain is lower than might be expected from its high degree of pathogenicity in rabbits. It is possible that the low concentration of the suspension of bacilli used in most of those experiments might account for the low incidence of tubercle formation. It is also possible, however, that the relatively high pathogenicity of the bovine strain when injected intravenously in rabbits as compared with the human strains injected intraperitoneally or subcutaneously in guinea pigs is not a true indication of inherent virulence. Differences in the pathogenicity of different strains of tubercle bacilli might be indicated more accurately by their effects on such a structurally simple test object as the chorio-allantoic membrane.

The use of the membrane of the chick as a host for cultivating the tubercle bacillus has the added advantage of yielding tubercles within 4 to 6 days after implantation. This affords a means for checking the virulence of a strain in a few days as compared with the prolonged periods usually required for guinea pig tests. This technique, moreover, appears to afford a rapid test for the determination of changes in virulence of a given strain of bacilli that might result from variations in culture media or other causes.

Table 1 also includes experimental data with membranes implanted with heat-killed bacilli and tuberculin. The gross and microscopic examination of sections of the membrane clearly shows that no typical tubercles were formed under the influence of dead bacilli or of the purified protein derivative of the bacilli.

The foregoing results suggest that it should be possible with this technique to determine the ability of a drug to attenuate the virulence of a given strain of tubercle bacilli, as well as to ascertain its tuberculocidal action. Such a test should be of greater value than one determining the inhibiting action of a drug on the growth of the micro-organism *in vitro*. The tests commonly employed to determine the tuberculostatic action of drugs, besides being time consuming, do not take into account the biochemical reactions between the invading micro-organism and host, nor do they give any indication as to the influence of the drug on the pathogenicity of the micro-organism, two factors of greatest importance in chemotherapy.

The technique described herein is being applied in a systematic study of the effects of various chemotherapeutic agents on the tubercle bacillus with a view to correlating chemical structure and tuberculocidal action.

SUMMARY

1. The growth of three human strains and one bovine strain of tubercle bacilli on the chorio-allantoic membrane of the chick embryo has been studied, and the cytological effects thereof described.

2. The incidence of membranes with tubercles and the extent of tubercle development on the membranes following implantation of tubercle bacilli of strains of different degrees of virulence indicate that the method may be employed in evaluating their pathogenicity.

3. No tubercles were produced on the chorio-allantoic membrane by inoculations either with tuberculin or heat-killed tubercle bacilli.

4. It is suggested that the method of implantation on the chorio-allantoic membrane is applicable to the determination, within the short space of 6 days, of the tuberculocidal action of a drug or of its ability to attenuate the virulence of a given strain of tubercle bacilli. Further work along these lines is in progress.

REFERENCES

(1) Goodpasture, E. W., and Anderson, K.: The problem of infection as presented by bacterial invasion of the chorio-allantoic membrane of chick embryos. Am. J. Path., 13: 149 (1937).

(2) Costil, L., and Bloch, F.: Réactions de la membrane chorio-allantoïde de l'embryon de poulet aux bacilles tuberculeux humains et aviaires. Compt. rend. Soc. de Biol., 128: 40 (1938).

MEASLES

The periodicity with which measles occurs in epidemic form is a well-known characteristic of the disease. Greater regularity is shown for cities, where the cycle is about 2 years, and for States than for the country as a whole, for which the total incidence is influenced

by the concurrence or nonconcurrence of various local cycles. Since 1920, periodically high incidence of measles has occurred in the United States as a whole at intervals of 2 or 3 years. On the basis of reported cases, the highest incidence rate since 1920, namely, 772 cases per 100,000 population, was recorded in 1923. This rate, however, was based on reports from only 31 States (population 87,604,000). It is possible that, had the data included all States, the case rate would have been lower. The next highest incidence was recorded in 1934 and 1938, namely, 632 cases per 100,000 population for each of those years. In the epidemics of 1923 and 1934, the unusually high incidence was carried over into the following years. One year of low incidence, the lowest recorded for the United States as a whole, followed 1924, while 2 years of low incidence followed 1935.

The reporting of measles has probably improved in recent years as only 72 cases were reported for each death registered in 1923, whereas since 1935 more than 200 cases have been reported for each death. Other factors in the control and treatment of measles have also no doubt contributed to a lower case fatality.

To date (first 24 weeks), 772,231 cases of measles have been reported in the United States during the current year as compared with 718,564 cases for the corresponding period in 1938, the most recent prior epidemic year, when 822,811 cases were reported for the entire year.

The same geographic areas which recorded the highest case rates in 1938 have also recorded the highest rates to date in 1941, namely, the East North Central, the Middle Atlantic, and the South Atlantic, with the Mountain and East South Central States next in order in each of those years. The lowest rates were shown for the West South Central, New England, and Pacific areas in 1938 and for the same areas and the West North Central States so far in 1941. In both of the interepidemic years of 1939 and 1940 the highest case rates were recorded for the New England, Mountain, and Pacific States. The highest case fatality rates are shown for the nonepidemic years.

Although the mortality from measles has fluctuated widely from year to year, it has declined rapidly during the present century, especially since 1920. In 1900 the crude death rate for measles in the death registration area of the United States was 12.5 per 100,000 population. The average rates for the expanding registration area by 10-year periods have been as follows: 1900–1910, 10.6 per 100,000; 1911–1920, 9.1; 1920–1930, 5.3; 1931–1939, 2.3. The highest annual death rate for measles in the expanding death registration area during this period was 14.3 in 1917 and the lowest 0.9 in 1939. The rate for 1939 represents a reduction of 93 percent from the rate for 1900. The death rate for measles in a group of large cities in the United States was approximately 24 per 100,000 population in 1885 and 36 in 1887.

In 1939 there were only 1,174 deaths from measles in the United States, in which year 403,037 cases were reported to the United States Public Health Service by the State health officers. A total of 291,162 cases was reported in 1940, which may indicate a still lower death rate for the disease in that year than in 1939. The high current incidence of the disease probably portends a corresponding rise in measles mortality for 1941.

Mortality from measles has been greatly reduced in spite of the lack of a general specific prophylaxis, such as has been made available for diphtheria, typhoid fever, and other diseases. The explanation must therefore be found in other measures. Among these are no doubt better methods of control, such as prevention of exposure of babies under 3 or 4 years of age, more nearly adequate medical attention, the use of convalescent serum and other means to ameliorate the disease, better nursing care, and the isolation of very young children to protect them against a secondary infection.

While the use of measles convalescent serum has not yet been widely adopted as a prophylactic measure, except in certain large cities, it has apparently been proved to be a valuable agent in modifying the course of the disease and has probably saved many lives. Experience during the present epidemic in New York City, where convalescent serum has been made available to all physicians, has clearly demonstrated its usefulness.[1] Of approximately 8,000 children who receive protective doses of the serum, 60 to 80 percent (complete figures not yet available) did not develop measles, and from 20 to 40 percent developed only a mild, modified attack. Only about seven-tenths of 1 percent developed the unmodified disease. It is estimated that approximately 85 percent of them would have developed an unmodified attack, with the possibility of serious complications, if they had not received injections of serum, as all of the children who were given the serum had been in contact with a case of measles.

The average dose was 5 to 10 cc., injected intramuscularly. Because of the risk from measles in children up to the age of 3, it was recommended that the attempt be made completely to prevent the disease in this age group by using 5 cc. dosage for infants up to 1 year of age and 10 cc. for children aged 2 and 3 years, not later than the seventh day after exposure. For children over 3 years of age, 5 to 10 cc. up to 6 or 7 days after the first exposure was the modifying dose.

During the present outbreak, 50 liters of convalescent serum were processed and distributed by the laboratory affiliated with the New York City Department of Health. This was obtained from 100 liters of whole blood taken from 750 convalescent donors, who are paid $5.00 per bleeding. The serum is available at all times upon the request of a physician.

[1] Quarterly Bulletin, City of New York Department of Health, May 1941, pp. 35-38.

COURT DECISION ON PUBLIC HEALTH

Enforcement of milk ordinance not enjoined.—(California District Court of Appeal, First District; *Natural Milk Producers Ass'n of California et al.* v. *City and County of San Francisco et al.*, 112 P.2d 930; decided May 1, 1941.) In a suit in which the plaintiffs were not successful in having enjoined the enforcement of certain provisions of a milk ordinance of the city and county of San Francisco, some of the matters considered by the court were as stated below.

One provision of the ordinance was that (*a*) certified milk, (*b*) guaranteed pasteurized milk, (*c*) grade A pasteurized milk, and (*d*) grade B pasteurized milk, and no other milk should be sold for human consumption. The plaintiffs claimed that the prohibition of the sale of nonpasteurized guaranteed raw milk and grade A milk was void because in conflict with a general statute, the agricultural code. But the court said that it did not find a single provision of the general statutes which stated in effect that guaranteed milk, grade A milk, and grade B milk need not be pasteurized before being sold in San Francisco.

Regarding a contention that the ordinance granted special privileges and immunities to certain vendors which were denied to others, the court said that, as there was nothing in the ordinance that would have prevented any one of the plaintiffs from applying for a permit to sell any one of the grades of milk mentioned, it was patent that they could not assert that any special privilege had been granted to others which had been denied to them.

Another claim of the plaintiffs was that the ordinance contained invalid provisions delegating legislative powers. The provision regarding certified milk stated that such milk was market milk which conformed to the "rules, regulations, methods and standards for the production and distribution of certified milk adopted by the American Association of Medical Milk Commissions" and had to bear the certification of the milk commission of the San Francisco County Medical Society. It was argued that under this provision the American Association of Medical Milk Commissions was delegated the power to set the qualifications of certified milk. The court, however, found no merit in this contention. It said that, assuming that the association may from time to time change its rules and regulations and that certified milk would be greatly depressed in quality, the plaintiffs were not purchasers and could not complain. Also it was stated that the argument that the association may so amend its rules and regulations as to impose additional burdens on vendors of certified milk led nowhere. Finally the court said that, solely for the purposes of the instant decision, it would assume that the insertion of the words "rules, regulations," rendered said section invalid, but then went on

to say that those words could be stricken out without in any manner affecting the rest of the ordinance.

Another contention of the plaintiffs dealt with the fact that the ordinance did not require certified milk, which was raw milk, to be pasteurized but did require all other grades of raw milk to be pasteurized. They asserted that the ordinance created two classes between which there was no "natural, constitutional, or intrinsic distinction." But the court said: "The record contains nothing which would warrant this court in holding that, as defined in said ordinance, certified milk is not as wholesome or more wholesome than any of the other grades of milk after they have been pasteurized. That being so no reason appears why certified milk should be pasteurized, no objection appears why the other grades of milk specified in the ordinance should not be pasteurized, and a valid distinction exists between certified milk (not pasteurized) and other grades required to be pasteurized."

Finally the court rejected the theory of the plaintiffs that the ordinance was unreasonable and, therefore, void. The trial court had found that allegation not true and the appellate court would not disturb its findings.

DEATHS DURING WEEK ENDED JUNE 7, 1941

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

	Week ended June 7, 1941	Corresponding week, 1940
Data from 88 large cities of the United States:		
Total deaths	8,044	8,579
Average for 3 prior years	8,013	
Total deaths, first 23 weeks of year	206,756	208,252
Deaths per 1,000 population, first 23 weeks of year, annual rate	12.6	12.6
Deaths under 1 year of age	479	525
Average for 3 prior years	498	
Deaths under 1 year of age, first 23 weeks of year	12,091	11,695
Data from industrial insurance companies:		
Policies in force	64,469,440	65,353,394
Number of death claims	11,772	12,771
Death claims per 1,000 policies in force, annual rate	9.5	10.2
Death claims per 1,000 policies, first 23 weeks of year, annual rate	10.2	10.4

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

REPORTS FROM STATES FOR WEEK ENDED JUNE 14, 1941

Summary

As compared with the preceding week, a decrease was reported for the current week in the incidence of each of the 9 communicable diseases included in the following table with the single exception of typhoid fever. While the number of reported cases of typhoid fever increased from 128 to 161, the current figure is below that for the corresponding week of each of the 5 preceding years except 1940. The current incidence of each of these 9 diseases, with the exception of influenza, measles, and whooping cough, is below the 5-year (1936–40) median expectancy.

The number of reported cases of measles decreased from 28,588 for the preceding week to 21,420. The incidence declined in all geographic areas except the New England States. A total of 772,231 cases has been reported to date this year (first 24 weeks), as compared with 718,564 for the corresponding period in 1938.

The number of cases of poliomyelitis declined from 32 for the preceding week to 26, of which 6 cases were reported in California, 3 cases each in Pennsylvania, Illinois, and Florida, 2 cases each in New York, Michigan, and Mississippi. No cases were reported in the New England, West North Central, and Mountain States.

A total of 23 cases of Rocky Mountain spotted fever was reported—5 in the eastern States, 3 in Iowa, and the remainder in the Mountain States. Of 50 cases of endemic typhus fever, 22 cases were reported in Texas and 17 in Georgia.

The death rate for the current week for 88 major cities in the United States was 10.9 per 1,000 population, as compared with 11.2 for the preceding week and with a 3-year (1938–40) average of 10.8. The cumulative rate to date this year is 12.5 as compared with 12.6 for the corresponding period of 1940. (All rates are on an annual basis.)

Telegraphic morbidity reports from State health officers for the week ended June 14, 1941, and comparison with corresponding week of 1940 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none were reported, cases may have occurred

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended—		Median 1936–40	Week ended—		Median 1936–40	Week ended—		Median 1936–40	Week ended—		Median 1936–40
	June 14, 1941	June 15, 1940		June 14, 1941	June 15, 1940		June 14, 1941	June 15, 1940		June 14, 1941	June 15, 1940	
NEW ENG.												
Maine	0	1	1	4	2	-------	155	305	81	0	0	0
New Hampshire	0	0	0	-------	-------	-------	20	6	33	0	0	0
Vermont	1	0	0	-------	-------	-------	74	8	47	0	0	0
Massachusetts	3	4	2	-------	-------	-------	1,038	1,455	1,015	5	0	1
Rhode Island	1	0	0	-------	-------	-------	1	201	26	0	0	1
Connecticut	0	1	1	1	1	-------	631	31	72	0	1	1
MID. ATL.												
New York	13	16	16	[1] 2	[1] 1	[1] 3	2,205	994	1,511	4	4	4
New Jersey [2]	6	1	10	4	3	4	1,343	1,267	547	0	0	1
Pennsylvania	11	15	15	-------	-------	-------	3,477	496	875	3	3	7
E. NO. CEN.												
Ohio	3	9	11	3	12	12	1,371	53	725	3	1	1
Indiana	13	4	4	8	5	3	328	16	16	0	2	1
Illinois	11	19	26	5	5	10	761	223	223	2	2	2
Michigan [2]	3	2	5	2	1	1	1,242	793	301	1	0	1
Wisconsin	1	1	1	27	15	11	1,690	1,111	457	0	0	1
W. NO. CEN.												
Minnesota	3	1	1	2	2	2	17	86	138	0	0	0
Iowa [2]	2	5	2	3	-------	-------	257	87	87	0	0	1
Missouri	2	2	5	1	1	2	324	21	21	0	0	0
North Dakota	0	3	1	-------	-------	-------	21	3	3	0	0	0
South Dakota	0	0	0	-------	1	-------	2	2	2	0	0	0
Nebraska	1	0	1	-------	-------	-------	20	7	19	0	0	0
Kansas	5	1	3	4	1	1	203	242	59	0	1	0
SO. ATL.												
Delaware [2]	1	0	0	-------	-------	-------	29	3	5	0	0	0
Maryland [2 3]	3	0	2	3	-------	1	473	9	120	2	0	0
Dist. of Col.	2	0	3	-------	-------	-------	184	6	93	0	0	3
Virginia	6	5	7	85	34	-------	798	156	181	1	0	1
West Virginia [3]	8	2	3	4	7	9	393	10	75	1	0	1
North Carolina	3	6	7	-------	-------	-------	852	112	196	0	0	3
South Carolina	12	3	3	105	95	56	514	16	30	0	0	2
Georgia [4]	4	1	2	4	9	-------	207	43	43	0	1	0
Florida [4]	1	2	6	11	-------	-------	84	16	16	1	0	0
E. SO. CEN.												
Kentucky	3	2	4	1	2	5	420	95	65	1	1	1
Tennessee [4]	0	2	4	24	21	18	242	85	85	0	0	3
Alabama [4]	8	1	3	14	10	8	149	31	31	1	1	1
Mississippi [3]	3	0	3	-------	-------	-------	-------	-------	-------	1	0	0
W. SO. CEN.												
Arkansas	6	3	3	4	28	10	125	28	28	0	0	1
Louisiana	0	0	10	4	9	10	18	1	10	2	1	3
Oklahoma	3	5	2	15	13	17	116	22	48	0	1	1
Texas [4]	4	14	26	245	100	100	516	669	239	0	2	1
MOUNTAIN												
Montana [2]	2	2	0	-------	-------	-------	26	50	50	0	0	0
Idaho	0	0	0	-------	-------	-------	4	31	22	0	0	0
Wyoming [2]	3	1	0	1	-------	-------	8	34	8	0	0	0
Colorado [2]	8	10	6	21	-------	-------	162	26	47	0	0	0
New Mexico	3	0	2	-------	-------	1	79	67	56	0	0	0
Arizona	1	2	2	52	50	20	96	71	16	0	1	0
Utah [3]	3	0	0	14	-------	-------	23	222	92	0	0	0
Nevada [3]	0	-------	-------	1	-------	-------	101	-------	-------	0	-------	-------
PACIFIC												
Washington	2	2	2	-------	-------	-------	14	187	187	0	0	0
Oregon	0	5	1	3	5	7	52	111	56	0	0	0
California	11	20	25	126	23	110	555	260	1,017	3	3	3
Total	179	173	289	803	456	540	21,420	9,768	9,239	31	25	59
24 weeks	6,214	7,427	10,995	593,070	165,861	148,631	772,231	193,411	238,920	1,124	934	1,813

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended June 14, 1941, and comparison with corresponding week of 1940 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended—		Median 1936–40	Week ended—		Median 1936–40	Week ended—		Median 1936–40	Week ended—		Median 1936–40
	June 14, 1941	June 15, 1940		June 14, 1941	June 15, 1940		June 14, 1941	June 15, 1940		June 14, 1941	June 15, 1940	
NEW ENG.												
Maine	0	0	0	4	0	6	0	0	0	1	1	1
New Hampshire	0	0	0	3	1	3	0	0	0	0	0	0
Vermont	0	1	0	3	1	5	0	0	0	0	0	0
Massachusetts	0	0	1	157	95	137	0	0	0	1	1	1
Rhode Island	0	0	0	6	4	11	0	0	0	0	1	1
Connecticut	0	0	0	45	48	62	0	0	0	0	1	1
MID. ATL.												
New York	2	1	2	348	389	407	0	0	0	15	7	9
New Jersey [2]	1	1	1	139	147	101	0	0	0	6	2	2
Pennsylvania	3	1	1	186	195	204	0	0	0	16	9	12
E. NO. CEN.												
Ohio	0	0	0	170	142	155	2	0	2	7	4	8
Indiana	0	1	0	43	37	51	0	10	9	4	3	3
Illinois	3	1	1	154	444	319	2	14	13	5	3	6
Michigan [3]	2	0	0	191	211	257	1	0	1	2	1	4
Wisconsin	0	0	0	82	79	90	1	14	5	0	0	1
W. NO. CEN.												
Minnesota	0	0	0	48	44	44	1	0	3	3	0	0
Iowa [2]	0	0	0	26	28	49	10	10	19	0	1	3
Missouri	0	0	1	40	46	46	1	2	10	2	12	7
North Dakota	0	0	0	3	2	10	0	18	9	0	0	0
South Dakota	0	1	0	3	3	8	3	1	7	0	1	0
Nebraska	0	0	0	14	2	6	0	1	1	2	0	0
Kansas	0	2	0	14	21	30	0	1	7	1	3	2
SO. ATL.												
Delaware [2]	0	0	0	10	2	3	0	0	0	0	0	0
Maryland [2 3]	0	0	0	32	20	20	0	0	0	5	2	3
Dist. of Col.	0	0	0	5	12	7	0	0	0	0	1	0
Virginia	0	0	0	9	25	18	0	0	0	3	3	13
West Virginia [2]	0	0	0	18	23	22	0	1	0	2	3	4
North Carolina	1	0	2	9	11	18	0	0	0	7	0	4
South Carolina	1	0	0	2	0	0	0	1	0	6	1	8
Georgia [4]	0	0	0	9	6	6	0	0	0	5	13	18
Florida [4]	3	1	1	1	2	5	0	0	0	8	4	4
E. SO. CEN.												
Kentucky	0	1	0	34	21	17	0	0	0	5	2	9
Tennessee [4]	1	1	1	29	26	15	1	0	0	1	2	12
Alabama [4]	0	1	1	10	6	5	0	1	0	0	3	5
Mississippi [3]	2	0	0	0	4	5	0	0	0	5	2	3
W. SO. CEN.												
Arkansas	0	0	0	2	4	4	0	0	0	5	7	7
Louisiana	1	0	1	5	10	8	0	0	0	16	11	11
Oklahoma	0	1	1	9	16	13	2	0	1	1	10	11
Texas [4]	0	0	2	21	18	28	0	2	5	11	18	18
MOUNTAIN												
Montana [2]	0	0	0	9	5	8	0	0	0	0	0	1
Idaho	0	0	0	5	2	5	0	0	0	0	2	2
Wyoming [2]	0	0	0	1	5	5	0	0	2	0	0	0
Colorado [2]	0	0	0	22	13	20	0	1	1	2	1	1
New Mexico	0	0	0	3	5	15	0	0	0	3	4	4
Arizona	0	0	0	3	3	3	0	0	0	2	0	1
Utah [2]	0	0	0	3	5	12	0	0	0	0	1	0
Nevada [2]	0	-----	-----	0	-----	-----	0	-----	-----	0	-----	-----
PACIFIC												
Washington	0	17	0	20	31	25	1	0	2	1	3	3
Oregon	0	0	0	9	6	16	0	1	5	3	1	1
California	6	11	6	84	105	138	0	0	14	5	10	10
Total	26	42	42	2,043	2,325	2,698	25	78	196	161	154	282
24 weeks	569	646	575	83,604	109,589	126,575	1,065	1,685	7,078	2,101	2,242	3,069

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended June 14, 1941, and comparison with corresponding week of 1940—Continued

Division and State	Whooping cough	
	Week ended—	
	June 14, 1941	June 15, 1940
NEW ENG.		
Maine	20	18
New Hampshire	11	2
Vermont	10	15
Massachusetts	267	156
Rhode Island	33	10
Connecticut	81	44
MID. ATL.		
New York	293	259
New Jersey [2]	110	88
Pennsylvania	294	257
E. NO. CEN.		
Ohio	305	300
Indiana	34	27
Illinois	82	96
Michigan [2]	240	237
Wisconsin	144	100
W. NO. CEN.		
Minnesota	94	21
Iowa [2]	33	23
Missouri	10	55
North Dakota	17	15
South Dakota	3	0
Nebraska	10	8
Kansas	142	43
SO. ATL.		
Delaware [2]	1	7
Maryland [2 3]	76	152
Dist. of Col	16	5
Virginia	67	56
West Virginia [2]	58	31
SO. ATL.—continued		
North Carolina	251	122
South Carolina	131	17
Georgia [4]	18	54
Florida [4]	32	5
E. SO. CEN.		
Kentucky	33	107
Tennessee [4]	86	59
Alabama [4]	51	19
Mississippi [2]		
W. SO. CEN.		
Arkansas	33	17
Louisiana	3	76
Oklahoma	25	27
Texas [4]	294	261
MOUNTAIN		
Montana [2]	13	0
Idaho	21	11
Wyoming [2]	13	3
Colorado [2]	173	5
New Mexico	13	45
Arizona	52	48
Utah [2]	97	179
Nevada [2]	0	
PACIFIC		
Washington	127	56
Oregon	17	35
California	735	471
Total	4,669	3,642
24 weeks	110,979	76,890

[1] New York City only.

[2] Rocky Mountain spotted fever, week ended June 14, 1941, 23 cases, as follows: New Jersey, 1; Iowa, 3; Delaware, 1; Maryland, 3; Montana, 5; Wyoming, 6; Colorado, 3; Nevada, 1.

[3] Period ended earlier than Saturday.

[4] Typhus fever, week ended June 14, 1941, 50 cases, as follows: Georgia, 17; Florida, 5; Tennessee, 2; Alabama, 4; Texas, 22.

PLAGUE INFECTION IN CALIFORNIA, IDAHO, AND OREGON

Under dates of June 3 and 5, 1941, N. E. Wayson, Medical Officer in Charge, Plague Suppressive Measures, San Francisco, Calif., reported plague infection proved as follows:

IN FLEAS FROM RATS IN SAN FRANCISCO, CALIF.

A pool of 31 fleas collected from 2 rats (*Rattus norvegicus*) caught on March 21, 1941, in the vicinity of the 1200 block of Folsom Street, San Francisco, Calif., produced plague in guinea pigs inoculated May 8, 1941.

The report of the Director of Public Health of San Francisco calls attention to the unusually long period during which the plague organism remained viable in these fleas under laboratory conditions—from March 21 to May 8.

IN FLEAS FROM GROUND SQUIRRELS IN KERN COUNTY, CALIF.

In a pool of 204 fleas from 17 ground squirrels, *C. beecheyi*, submitted to the laboratory on May 26 from the California Institute for Women, 6 miles west of Tehachapi, Kern County, Calif., and in another pool of 106 fleas from 17 ground squirrels, *C. beecheyi*, submitted to the laboratory on May 23 from a ranch 1 mile south of the California Institute for Women.

IN FLEAS FROM GROUND SQUIRRELS IN ADA COUNTY, IDAHO

In a pool of 105 fleas from 44 ground squirrels, *C. mollis* (sp.), shot on May 21 and 23, 2 miles north and 3 miles east of the junction of State Highways Nos. 16 and 44, and in another pool of 20 fleas from 12 ground squirrels of the same species shot on May 22 on the edge of the desert west of Boise Air Base, both in Ada County, Idaho.

IN FLEAS FROM MARMOT IN MALHEUR COUNTY, OREG.

In a pool of 27 fleas from 1 marmot, *Marmota flaviventris avara*, shot May 16, 12 miles southwest of Jordan Valley, Malheur County, Oreg.

WEEKLY REPORTS FROM CITIES

City reports for week ended May 31, 1941

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

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Data for 90 cities:											
5-year average	111	49	24	4,228	408	1,507	15	372	28	1,197	------
Current week [1]	48	38	17	6,705	284	1,015	1	335	18	1,297	------
Maine:											
Portland	0	------	0	6	3	0	0	1	0	11	22
New Hampshire:											
Concord	0	------	0	1	0	0	0	0	0	0	6
Manchester	0	------	0	0	0	3	0	1	0	0	22
Nashua	0	------	0	0	0	0	0	0	0	3	3
Vermont:											
Barre	0	------	0	0	0	0	0	0	0	0	3
Burlington	0	------	0	2	0	0	0	0	0	0	10
Rutland	0	------	0	0	1	0	0	0	0	0	6
Massachusetts:											
Boston	2	------	0	196	9	64	0	5	0	62	203
Fall River	0	------	0	3	2	4	0	0	0	9	40
Springfield	0	------	0	54	1	11	0	0	1	6	36
Worcester	0	------	0	12	3	2	0	1	0	6	43
Rhode Island:											
Pawtucket	0	------	0	2	0	3	0	0	0	2	14
Providence	0	------	0	0	1	1	0	0	0	18	45
Connecticut:											
Bridgeport	0	------	0	25	1	1	0	0	0	2	23
Hartford	0	------	0	6	1	5	0	0	0	6	32
New Haven	0	------	0	5	1	6	0	1	0	1	35
New York:											
Buffalo	0	------	0	68	5	25	0	5	0	16	112
New York	9	1	3	949	66	204	0	73	1	66	1,339
Rochester	1	------	0	237	2	1	0	0	2	33	56
Syracuse	0	------	0	1	3	2	0	0	0	26	37
New Jersey:											
Camden	1	1	1	5	3	2	0	0	0	10	24
Newark	0	------	0	90	3	32	0	5	0	21	94
Trenton	0	------	0	50	0	15	0	3	0	0	31
Pennsylvania:											
Philadelphia	1	1	0	226	10	117	0	21	2	76	416
Pittsburgh	1	1	0	1,026	8	15	0	5	1	38	156
Reading	1	------	0	63	0	7	0	0	0	4	19
Scranton	0	------	------	27	------	0	0	------	0	0	------
Ohio:											
Cincinnati	4	------	0	47	2	10	0	4	0	7	110
Cleveland	0	3	0	42	7	46	0	9	0	74	195
Columbus	0	------	0	46	0	8	0	0	0	4	67
Toledo	0	------	0	437	2	2	0	5	1	14	64
Indiana:											
Anderson	0	------	0	13	2	0	0	0	0	0	10
Fort Wayne	0	------	0	5	1	0	0	0	0	4	18
Indianapolis	2	------	1	457	11	14	0	9	0	16	114
Muncie	0	------	0	39	2	5	0	0	0	2	20
South Bend	0	------	0	31	0	1	0	0	0	3	22
Terre Haute	------	------	1	------	3	------	------	1	------	------	28
Illinois:											
Alton	0	------	0	4	0	0	0	0	1	0	9
Chicago	15	1	1	201	23	109	0	37	0	35	693
Elgin	0	------	0	3	0	0	0	1	0	0	10
Moline	0	------	0	19	0	0	0	0	0	0	8
Springfield	0	------	0	39	2	4	0	0	0	0	21
Michigan:											
Detroit	0	------	0	415	15	100	0	10	0	93	260
Flint	0	------	0	21	4	6	0	0	0	7	25
Grand Rapids	0	------	0	121	0	7	0	1	0	6	23
Wisconsin:											
Kenosha	0	------	0	44	0	2	0	0	0	0	4
Madison	0	------	0	37	0	3	0	0	0	0	16
Milwaukee	0	------	0	507	1	21	0	1	0	47	84
Racine	0	------	0	30	0	0	0	0	0	6	7
Superior	0	------	0	3	0	0	0	0	0	10	8

[1] Figures for Tampa and morbidity figures for Terre Haute estimated; reports not received.

City reports for week ended May 31, 1941—Continued

State and city	Diphtheria cases	Influenza cases	Influenza deaths	Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
Minnesota:											
Duluth	0	------	0	0	2	0	0	0	0	8	19
Minneapolis	0	------	0	10	0	19	0	1	0	30	87
St. Paul	0	------	0	1	1	5	0	3	0	14	55
Iowa:											
Cedar Rapids	0	------	--------	3	-------	0	0	-------	0	0	--------
Des Moines	0	------	--------	7	-------	1	0	-------	0	0	35
Sioux City	0	------	--------	12	-------	1	0	-------	0	9	--------
Waterloo	0	------	--------	21	-------	0	0	-------	0	10	--------
Missouri:											
Kansas City	0	------	0	89	4	4	1	3	0	10	81
St. Joseph	0	------	0	6	4	0	0	0	0	0	22
St. Louis	0	------	0	225	5	32	0	8	1	22	198
North Dakota:											
Fargo	0	------	0	1	1	0	0	0	0	1	12
Grand Forks	0	------	--------	0	-------	0	0	-------	0	0	--------
Minot	0	------	--------	13	-------	0	0	-------	0	0	9
South Dakota:											
Aberdeen	0	------	--------	0	-------	0	0	-------	0	0	--------
Sioux Falls	0	------	--------	0	-------	3	0	-------	0	0	7
Nebraska:											
Omaha	0	------	0	10	3	6	0	3	0	4	39
Kansas:											
Lawrence	0	1	0	2	0	0	0	0	0	0	3
Topeka	2	------	0	31	3	0	0	0	0	25	22
Wichita	0	2	0	3	1	2	0	1	0	2	30
Delaware:											
Wilmington	0	------	0	4	0	6	0	0	0	0	25
Maryland:											
Baltimore	0	3	3	250	14	32	0	15	0	77	243
Cumberland	0	------	0	1	2	1	0	0	0	2	17
Frederick	0	------	0	0	0	0	0	0	0	0	2
Dist. of Col.											
Washington	1	------	0	204	10	11	0	12	0	10	165
Virginia:											
Lynchburg	0	------	0	33	0	0	0	0	0	7	9
Norfolk	0	1	0	34	3	1	0	3	0	1	27
Richmond	0	------	0	58	0	2	0	1	0	0	38
Roanoke	0	------	0	5	1	0	0	0	0	0	18
West Virginia:											
Charleston	1	------	0	0	2	2	0	0	0	0	14
Huntington	0	------	--------	12	-------	0	0	-------	0	0	--------
Wheeling	0	------	0	90	0	3	0	1	0	4	14
North Carolina:											
Gastonia	0	------	--------	11	-------	0	0	-------	0	3	--------
Raleigh	0	------	0	23	0	1	0	0	0	23	7
Wilmington	0	------	0	22	0	0	0	0	0	5	5
Winston-Salem	0	------	0	14	2	1	0	2	0	5	22
South Carolina:											
Charleston	0	3	0	0	2	0	0	1	0	0	17
Florence	0	3	0	1	0	0	0	0	0	5	3
Greenville	0	------	0	1	5	0	0	1	0	3	29
Georgia:											
Atlanta	0	3	0	28	1	0	0	6	0	0	87
Brunswick	0	------	0	0	0	0	0	0	0	4	2
Savannah	0	------	0	6	0	2	0	0	0	1	32
Florida:											
Miami	0	1	0	10	1	0	0	0	0	10	29
St. Petersburg	0	------	0	9	1	0	0	0	0	1	8
Tampa	------	------	------	------	------	------	------	------	------	------	------
Kentucky:											
Ashland	0	------	0	0	1	0	0	0	0	2	5
Covington	0	------	0	1	1	0	0	0	0	0	12
Lexington	0	------	0	0	1	1	0	3	0	1	12
Louisville	0	------	0	484	4	28	0	3	2	16	63
Tennessee:											
Knoxville	0	------	0	26	0	2	0	3	0	0	29
Memphis	0	------	1	102	0	1	0	10	0	22	78
Nashville	0	------	0	28	3	6	0	1	0	12	44
Alabama:											
Birmingham	0	------	1	63	5	5	0	3	2	2	85
Mobile	0	------	1	0	1	0	0	1	0	0	24
Montgomery	1	------	--------	10	-------	0	0	-------	0	0	--------
Arkansas:											
Fort Smith	0	------	--------	5	-------	0	0	-------	0	0	--------
Little Rock	0	------	0	3	3	0	0	4	0	1	40

City reports for week ended May 31, 1941—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Louisiana:											
New Orleans	0	1	1	3	5	0	0	10	2	0	131
Shreveport	0	------	0	0	0	0	0	2	0	0	35
Oklahoma:											
Oklahoma City	0	1	0	14	3	5	0	0	0	0	38
Tulsa	0	------	0	27	0	1	0	1	0	0	25
Texas:											
Dallas	0	------	0	18	1	2	0	2	0	2	70
Fort Worth	0	------	1	12	0	0	0	0	0	6	37
Galveston	0	------	0	0	2	0	0	1	0	0	10
Houston	0	------	0	2	2	0	0	8	2	1	72
San Antonio	1	3	0	1	1	1	0	8	0	0	63
Montana:											
Billings	0	------	0	1	0	1	0	0	0	0	10
Great Falls	0	------	0	0	0	0	0	0	0	0	9
Helena	0	------	0	2	0	0	0	0	0	0	5
Missoula	0	------	0	0	0	0	0	0	0	0	1
Idaho:											
Boise	0	------	0	0	2	0	0	1	0	0	6
Colorado:											
Colorado Springs	0	------	0	4	0	5	0	1	0	5	7
Denver	3	7	2	273	0	2	0	4	1	119	90
Pueblo	0	------	0	7	0	1	0	0	0	8	7
New Mexico:											
Albuquerque	0	------	0	9	0	0	0	3	0	0	14
Arizona:											
Phoenix	0	23	--------	2	-------	1	0	-------	0	2	--------
Utah:											
Salt Lake City	0	------	0	2	0	1	0	1	0	16	21
Washington:											
Seattle	0	------	1	0	2	0	0	5	0	27	97
Spokane	0	------	0	3	2	1	0	0	1	3	30
Tacoma	0	------	0	2	0	0	0	0	0	8	24
Oregon:											
Portland	0	2	0	5	2	1	0	0	0	2	49
Salem	0	------	--------	3	-------	0	0	-------	0	0	--------
California:											
Los Angeles	0	7	0	35	2	18	0	17	0	34	295
Sacramento	3	------	0	5	1	2	0	2	1	30	31
San Francisco	0	1	0	5	2	3	0	6	0	34	159

State and city	Meningitis, meningococcus		Poliomyelitis cases	State and city	Meningitis, meningococcus		Poliomyelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				Michigan:			
Fall River	0	1	0	Detroit	1	0	0
Rhode Island:				Minnesota:			
Providence	1	0	0	Minneapolis	0	0	1
New York:				District of Columbia:			
Buffalo	4	0	0	Washington	1	1	0
New York	2	1	0	Florida:			
Pennsylvania:				Miami	0	0	3
Pittsburgh	1	0	0	California:			
Ohio:				Los Angeles	0	0	2
Toledo	1	0	0				

Encephalitis, epidemic or lethargic.—Cases: Cumberland, 1.
Pellagra.—Cases: Chicago, 1; Charleston, S. C., 2; Atlanta, 1; Savannah, 3; Miami, 1; Houston, 2.
Typhus fever.—Cases: Miami, 1; St. Petersburg, 1; Los Angeles, 1.

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended May 17, 1941.—During the week ended May 17, 1941, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis	2	2		6	12	3	1	1	1	28
Chickenpox		23		113	207	51	25	19	52	490
Diphtheria		23	3	26	9		1		1	63
Dysentery				8						8
Influenza		22			3	1			14	40
Measles		68	10	525	1,537	60	88	77	178	2,543
Mumps				326	174	28	17	5	15	565
Pneumonia	3	16			16	3			10	48
Scarlet fever		42	6	80	179	7	9	14	20	357
Trachoma									5	5
Tuberculosis	4	13	19	78	65	3	10			192
Typhoid and paratyphoid fever			1	16				1	3	21
Whooping cough		5		103	170	3	5	4	25	315

FINLAND

Communicable diseases—March 1941.—During the month of March 1941, cases of certain communicable diseases were reported in Finland as follows:

Disease	Cases	Disease	Cases
Diphtheria	221	Poliomyelitis	11
Dysentery	2	Scarlet fever	343
Influenza	3,398	Typhoid fever	54
Paratyphoid fever	150	Undulant fever	1

SWEDEN

Notifiable diseases—March 1941.—During the month of March 1941, cases of certain notifiable diseases were reported in Sweden as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	8	Poliomyelitis	1
Diphtheria	8	Scarlet fever	1,006
Dysentery	41	Syphilis	19
Epidemic encephalitis	2	Typhoid fever	11
Gonorrhea	659	Undulant fever	11
Paratyphoid fever	8		

SWITZERLAND

Communicable diseases—February 1941.—During the month of February 1941, cases of certain communicable diseases were reported in Switzerland as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	26	Paratyphoid fever	4
Chickenpox	222	Poliomyelitis	10
Diphtheria	166	Scarlet fever	201
German measles	118	Tuberculosis	253
Influenza	130	Typhoid fever	3
Measles	386	Undulant fever	5
Mumps	107	Whooping cough	136

UNION OF SOUTH AFRICA

Notifiable diseases—Years ended June 30, 1940, and June 30, 1939.—During the years ended June 30, 1940, and June 30, 1939, cases of certain notifiable diseases were reported by medical practitioners in the Union of South Africa as follows:

Disease	1940	1939	Disease	1940	1939
Anthrax	65	71	Puerperal fever	600	564
Cerebrospinal meningitis	808	702	Rabies	2	2
Diphtheria	3,050	3,480	Scarlet fever	2,040	1,945
Encephalitis, infectious	30	21	Smallpox	681	408
Erysipelas	404	428	Trachoma	136	85
Lead poisoning	2	6	Tuberculosis	15,162	13,171
Leprosy	776	657	Typhoid fever	2,835	3,558
Ophthalmia neonatorum	578	640	Typhus fever	841	1,273
Plague	47	77	Undulant fever	14	9
Poliomyelitis	62	37			

Vital statistics—Year 1939.—Following are vital statistics of the European population of the Union of South Africa for the calendar year 1939:

Population	2,116,500	Deaths per 100,000 population from:	
Births per 1,000 population	25.29	Cancer	104.75
Deaths per 1,000 population	9.40	Bronchitis and pneumonia	90.05
Deaths of infants under 1 year per 1,000 live births	49.48	Diseases of the heart and circulatory system	170.42
		Tuberculosis (all forms)	36.19

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

NOTE.—A cumulative table giving current information regarding the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS of May 30, 1941, pages 1187–1189. A similar table will appear in future issues of the PUBLIC HEALTH REPORTS for the last Friday of each month.

Plague

Brazil.—Plague has been reported in Brazil as follows: For the month of November 1940, Alagoas State, 4 cases, 1 death; Bahia State, 1 case, 1 death; Pernambuco State, 23 cases, 4 deaths. For the month of December 1940, Alagoas State, 2 cases; Bahia State, 3 cases, 3 deaths; Pernambuco State, 6 cases, 1 death.

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