Transactions of a special conference of state and territorial health officers with the United States Public Health Service, for the consideration of the prevention of the spread of poliomyelitis : Held at Washington, D.C., August 17 and 18, 1916.

Contributors

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TREASURY DEPARTMENT
UNITED STATES PUBLIC HEALTH SERVICE

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PUBLIC HEALTH BULLETIN No. 83
DECEMBER, 1916

TRANSACTIONS OF A SPECIAL CONFERENCE OF STATE AND TERRITORIAL HEALTH OFFICERS WITH THE UNITED STATES PUBLIC HEALTH SERVICE, FOR THE CONSIDERATION OF THE PREVENTION OF THE SPREAD OF POLIOMYELITIS

HELD AT WASHINGTON, D. C.
AUGUST 17 AND 18, 1916

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WASHINGTON
GOVERNMENT PRINTING OFFICE
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TELEGRAM CALLING THE CONFERENCE.

The following telegram was addressed to the health authorities of the States, Territories, and the District of Columbia:

TREASURY DEPARTMENT,
BUREAU OF THE PUBLIC HEALTH SERVICE,
Washington, August 9, 1916.

Under authority public-health law 1902 conference of State and Territorial health authorities with Public Health Service is called to meet this office 10 a. m. Thursday, August 17, to consider poliomyelitis situation and bring about greater uniformity in methods of control. Representation of your State urgently requested. Wire name of delegate.

A. H. GLENNAN,
Acting Surgeon General.

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TRANSACTIONS

OF A

SPECIAL CONFERENCE OF STATE AND TERRITORIAL HEALTH AUTHORITIES WITH THE UNITED STATES PUBLIC HEALTH SERVICE

FOR THE CONSIDERATION OF THE

PREVENTION OF THE SPREAD OF POLIOMYELITIS.

MORNING SESSION, AUGUST 17, 1916.

The conference was called to order at 10.15 o'clock a. m. by the chairman, Acting Surg. Gen. A. H. Glennan, the following being present:

REPRESENTATIVES OF THE PUBLIC HEALTH SERVICE.

Asst. Surg. Gen. W. G. Stimpson.
Asst. Surg. Gen. J. W. Kerr.
Asst. Surg. Gen. W. C. Rucker, secretary.
Asst. Surg. Gen. R. H. Creel.
Asst. Surg. Gen. J. W. Trask.
Senior Surg. C. E. Banks.
Surg. Hugh Cumming.
Surg. L. E. Cofer.
Surg. C. H. Lavinder.
Surg. G. W. McCoy.
Surg. B. S. Warren.
Surg. A. M. Stimson.
Passed Asst. Surg. W. H. Frost.
Passed Asst. Surg. J. P. Leake.
Passed Asst. Surg. W. F. Draper.
Prof. C. W. Stiles.

STATE DELEGATES.

Alabama, Dr. Glenn Andrews.
Arizona, Dr. E. P. Palmer.
Arkansas, Dr. C. W. Garrison.
California, Dr. Guy E. Manning.
Colorado, Dr. S. R. McKelvey.
Connecticut, Dr. John T. Black.
Delaware, Dr. W. P. Orr.
District of Columbia, Dr. W. C. Woodward.
Florida, Dr. J. Y. Porter.
Illinois, Dr. C. St. Clair Drake.
Indiana, Dr. W. F. King.
Iowa, Dr. Henry Albert.
Kentucky, Dr. J. N. McCormack.
Louisiana, Dr. Oscar Dowling.
Maine, Dr. A. G. Young.
Maryland, Dr. John S. Fulton.
Massachusetts, Dr. A. J. McLaughlin.
Michigan, Dr. John L. Burkart.
Minnesota, Dr. H. M. Bracken.
Missouri, Dr. J. A. B. Adcock.
Montana, Dr. F. A. Cooney.
Nebraska, Dr. E. A. Carr.
New Hampshire, Dr. I. A. Watson.
New Jersey, Dr. R. D. Fitz-Randolph.
New York, Dr. George Draper.
North Carolina, Dr. W. S. Rankin.
Ohio, Dr. F. G. Boudreau.
Oregon, Dr. D. N. Roberg.
Pennsylvania, Dr. S. G. Dixon.
Rhode Island, Dr. G. T. Swarts.
South Carolina, Dr. J. A. Hayne.
South Dakota, Dr. E. B. Jenkins.
Tennessee, Dr. H. H. Shoulders.
Texas, Dr. W. B. Collins.
Vermont, Dr. H. A. Ladd.
Virginia, Dr. E. G. Williams.
Washington, Dr. T. D. Tuttle.
West Virginia, Dr. C. R. Weirich.
Wisconsin, Dr. C. A. Harper.

GUESTS.

Dr. Haven Emerson, commissioner of health, New York City.
Dr. W. W. Ford, associate professor of hygiene, Johns Hopkins University.
Dr. John D. Blake, health commissioner of Baltimore.
Dr. J. D. Hagard, South Boston, Va.
Dr. Ernest C. Levy, chief health officer, Richmond, Va.
Dr. Arch Cheatham, Durham, N. C.
Dr. J. Mitchell Reese, Phillipsburg, N. J.
Dr. T. F. Abercrombie, Brunswick, Ga.
Dr. Thomas Reid Crowder, superintendent of sanitation, Pullman Car Co., Chicago, Ill.
Dr. Arthur T. Wolff, Connecticut State board of health, Hartford, Conn.
Dr. William Egleston, South Carolina board of health.
Dr. A. J. Wheeler, representing Office of Indian Affairs, Washington, D. C.
Dr. James D. Love, Jacksonville, Fla.
Dr. B. M. Little, Clarksville, Tenn.
Mr. Tolley A. Biays, Maryland.
Mr. Mosby G. Perrow, Lynchburg, Va.
Dr. Arthur M. Wright, Erie Railroad, New York City.
Mr. W. C. Hope, general passenger agent Central Railroad of New Jersey, New York City.
Mr. E. R. Scoville, Baltimore & Ohio Railroad Co.
Dr. D. Z. Dunott, Western Maryland Railroad Co.
Dr. E. M. Parlett, Baltimore & Ohio Railroad Co.
Mr. N. S. Burns, Pittsburgh, Pa.
Dr. G. N. Thomas, representing El Paso County and El Paso city, Tex.
Mr. E. B. Hunt, superintendent relief department, Pennsylvania Railroad.
Dr. W. A. Applegate, chief surgeon Southern Railway, Washington, D. C.
Dr. J. M. Wainwright, chief surgeon Delaware, Lackawanna & Western Railroad.
Mr. S. B. Hege, district passenger agent Baltimore & Ohio Railroad, Washington, D. C.
Dr. A. G. Oppenheimer, Chesapeake & Ohio and Richmond, Fredericksburg & Potomac Railroads, Richmond, Va.
Mr. C. F. Smith, general superintendent passenger transportation New York Central, New York City.
Mr. Charles C. Pauling, solicitor New York Central Railroad, New York City.
Dr. Frederick L. Hoffman, Prudential Insurance Co., Newark, N. J.

The CHAIRMAN. This conference is called in accordance with the act of Congress of July 1, 1902, to consider the prevalence at the present time of poliomyelitis and to discuss with you, as representatives of the health organizations of the various States, ways and means of preventing its spread. In opening the conference I wish to state that Surg. Gen. Blue is incapacitated by an attack of sciatica, and will therefore be unable to be present. He wishes me to express to the conference his sincere regret at his enforced absence and to assure the delegates of his deep interest in the subject under consideration.

We have the honor of having with us this morning the Hon. William G. McAdoo, Secretary of the Treasury, to whom I might apply in addition the title of Secretary of Public Health. [Applause.] Since the beginning of the present outbreak of poliomyelitis he has taken deep interest in the situation. I take great pleasure in presenting to you Secretary McAdoo. [Applause.]

ADDRESS OF SECRETARY M'ADOO.

Secretary McAdoo. Dr. Glennan and gentlemen, I welcome you heartily to Washington. I wish that the occasion of your visit were something less serious than the subject that calls you here. We are facing another epidemic of infantile paralysis—that baffling and mysterious disease which has brought so much woe to New York City and has thus far proven itself beyond the control of science. We have had as a natural consequence of a mysterious and deadly epidemic of this sort a great deal of alarm and a great deal of hysteria in some places. This has resulted in all kinds of regulations by State and local authorities, resulting in a great variety and form of effort to prevent the spread of the disease. The purpose of these regulatory measures is in the highest degree commendable, but without some sort of a uniform direction—cool-headed direction—our efforts will be less effective than they ought to be, and unnecessary inconvenience will inevitably be placed upon the public. Now, the Public Health Service, which has a very definite function under the national authority, is trying to exercise its powers in cooperation with the powers exercised by the health authorities of the different States in order that a more coordinated and effective effort may be made to fight the mysterious enemy. We have asked you to come here for the purpose of exchanging views, and after a calm and well-considered discussion, of determining what is the most intelligent and useful thing to do in the circumstances.

My experience with panics—we have had to approach very near to some of them since I have been in the Treasury Department, panics not occasioned by the presence of physical disease, but mental disease of a financial sort—has led me to realize the importance of cooperative effort, of intelligent discussion of problems with a view to ascertaining what the real problems are, and then, like commonsense and courageous people, taking them up and trying to find a solution for them.

I have great confidence in this conference. I am so naturally a believer in the efficacy of human effort that I never look at things as impossible. I am unwilling to admit that anything is impossible that is within the range of human effort, and I have great hopes therefore that you are going to be able, as a result of these delibera-

tions, to concert immediate measures for better and more effective cooperation between the different communities of the United States, develop a better understanding of the difficult problem before us, and devise measures that will confer a minimum of inconvenience and a maximum of benefit upon the public. That is what we are striving to do, so far as the regulatory features are concerned, and I recommend to you gentlemen a thorough consideration of these phases of the problem.

Now, the other side of the problem is scientific. With regard to that I have no suggestions to offer, because you men of science know better how to deal with it than I do. But I am exceedingly hopeful that as a result of the exchange of ideas here you may get additional light upon this subject, and that you may at least be able to concert new measures and investigations that will give promise of the discovery soon of a remedy for this deadly disease, so that it may be removed as a menace to the human race.

I have great respect for the noble profession you gentlemen represent, and I wish to say to you that among the many activities of the Treasury Department no one of them appeals to me more strongly than the Public Health Service. It has potentialities of the utmost importance to the American people. I believe that, great as the service it has already performed, it can be made an even more effective instrument in the service of the people of this country than it has already been. In saying that I do not mean that an enlargement of its powers is going to bring it into conflict with the proper powers of the States, but, on the contrary, we can make the national instrument a far more effective agency of cooperation with the State health authorities than it is at the present time. I believe I may claim, without exaggeration, that under Surg. Gen. Blue's administration—and I hope that I have been able to further it to some extent myself—the Public Health Service is to-day performing a larger and more useful service to the American people than it ever has done before.

So I welcome you, gentlemen; I welcome you most heartily to this city, and I assure you that the services of the Treasury Department are placed unreservedly at your disposal, and that you can depend upon the unlimited cooperation of this department in the noble work you have undertaken.

Gentlemen, I am sorry I can not stay with you. I do not know anything that would please me more than to take part in your deliberations, but unfortunately I am under very great pressure, and I have so many other things to do that I must leave you now and look after other matters. [Applause.]

The CHAIRMAN. The secretary of the conference will now call the roll of States.

(The secretary here called the roll of States.[1])

The SECRETARY. Those who are guests of the conference will please write their names and addresses and deliver them to the secretary, writing at the top of the paper the word "guest."

The CHAIRMAN. I wish to announce that the official delegates only have the right to vote. Later we will be glad to extend the privileges of the floor to our guests. We have quite a number of them.

This is a tentative program and is subject to change at any time so that we may get along with the business in hand. The first subject is "The poliomyelitis situation in the various States." It seems to me it would be well to have the secretary call the roll, and as each representative's name is called, let him make a short statement of the poliomyelitis situation in his State. Remarks on this head are limited to 5 minutes. The secretary will call the roll.

The SECRETARY. Dr. Glenn Andrews, of Alabama.

Dr. ANDREWS. You want the condition just as it is now, Mr. Chairman?

The CHAIRMAN. Just give us an idea of the conditions in your State—the present conditions.

Dr. ANDREWS. We did not have poliomyelitis reported upon, except along with other diseases, until after this outbreak in New York. Since then we have had special reports. On July 13 the State board of health sent out a notice to the county health officers requiring that infantile paralysis be reported instantly in every case by telegraph. We require all contagious diseases to be reported by mail. Poliomyelitis was ordered to be reported by telegraph. From July 13 to 24, inclusive, 77 cases were reported from 17 counties. From August 1 to August 14 there have been reported 17 cases in five additional counties, making 94 cases reported in 22 counties. One county, Jefferson, has reported a total of 24 cases. The number of cases from other counties has varied from 1 to 3.

Before this year we have had cases of infantile paralysis reported with other diseases. Last year there were reported 24 deaths for the entire year, which at the rate of 1 death to 10 cases would be about 240 cases in the State. The cases this summer thus far have been widely scattered. I have brought with me a map outlining the location of the disease, and with the exception of one county, Jefferson, there has been no appreciably large number of cases. That county, which is the largest in the State, shows 24 cases, and you will see how widely scattered the disease has been. [I will leave that map with you.]

The SECRETARY. Dr. C. W. Garrison, of Arkansas.

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[1] The list of those present is given on page 9.

Dr. GARRISON. Mr. Chairman, I have been out of the State for three weeks, but up to the time I left there we had had three cases, one in the southwest section of the State and two in the northeast.

About four years ago Arkansas had an epidemic of poliomyelitis in the southwestern part of the State, with 150 to 200 cases, and the Public Health Service made an investigation. The board has been watching the reports, but the three cases only having been notified, no special action has been taken.

The SECRETARY. California; Dr. Guy E. Manning.

Dr. MANNING. California has to report two cases. We have had endemic cases in the State in previous years, but under supervision of the city and State authorities the spread of the disease has been prevented. This year we have had, since the epidemic was reported in the East, four cases, one in San Francisco, which was not diagnosed on the train, but which was afterwards found to have come from New York, reaching California in about six days after it had left there, coming direct. This case proved to be a true case of poliomyelitis. It was taken in hand by the health authorities and quarantined, and from that case there has been no spread.

A few miles from there by rail there has been another case reported. That also came from outside of the State. In the southern part of the State there have been two cases. So I think four cases will cover all that we have to-day. These cases have all, of course, come from other States, so that while we do not fear the spread of poliomyelitis, we are watching conditions very closely. California is entered by four lines of railroad, and all of these connect with almost all eastern points. Inspection has been established at the boundary lines of the State, all children being inspected before they are allowed to enter.

The SECRETARY. Colorado; Dr. S. R. McKelvey.

Dr. MCKELVEY. Mr. Chairman, Colorado requires the immediate reporting of all communicable diseases, which, of course, includes poliomyelitis. During the present year there have been only four cases reported, and we have been unable to trace the origin of any of these cases to the East. They are probably sporadic cases, without any actual indication as to just where they may have had their origin. One of these cases was in a western county in the State, near the Utah line, one of them was in Boulder County, 12 or 15 miles out of Denver. The remaining two cases were in the city of Denver. One of these is now convalescent and will soon be out of quarantine, and the other has been out of quarantine for some little time. The two cases occurred within about one month of each other. That is all that I am able to report as to the disease in my State. We are watching things very closely and are trying to keep track of all people, especially those having children with them, coming from the East.

The SECRETARY. Connecticut; Dr. John T. Black.

Dr. BLACK. Connecticut had three cases in June, apparently sporadic; in July, 165; and in August, 155, making 320 since the 1st of July. Of the first 200 cases in Connecticut, 34 were nonresidents, having come recently from New York.

The present problem of the disease in Connecticut is peculiar, owing to our proximity to New York and the cheap transportation facilities which are offered to the poorer classes by the Sound lines, trolley and automobiles also affording close connection. The spread of the disease to the State has been by these different routes. We have established in Connecticut about 20,000 children from New York at the present time. They are divided into different classes, the largest class being the Jewish population. They come in on the farms, anywhere from 10 to 80 to a farm. It has been from these sources that we have been getting most of the direct and indirect exposures—I mean direct cases from New York and the New York exposures. In the tobacco district we are finding the infection among the Italians, owing to the influx of labor for the tobacco harvest; in the Italian districts of Connecticut, in Stamford, Bridgeport, and New Haven, they have used registration and observation, and local communities in some instances have adopted rigid quarantine measures against New York, which will no doubt come out later.

The SECRETARY. Delaware; Dr. W. P. Orr.

Dr. A. E. FRANTZ. Mr. Chairman, Dr. Orr has very kindly shifted the responsibility of responding for our very large State. We have had in Delaware but two cases of poliomyelitis. Our population is only 215,000. These two cases have been of children, one 3 years and the other 5 years of age. They have both been residents of Delaware. We, however, claim that they were both imported cases; that is, the disease was brought into the State by the children themselves. The first patient visited New York July 4, returning from there on July 5. On July 11 the child was taken with vomiting, fever, etc., the usual symptoms, with slight paralysis of the left leg following in a day or so. This was a mild case and it is recovering, there being no paralysis remaining.

The other case was that of a boy 5 years of age, who visited Philadelphia August 5, where he traveled on the trolley cars as far as Willow Grove, returning the next day. On the 12th he was taken with vomiting, headache, fever, and symptoms of poliomyelitis, although he had been complaining for a few days before. He had complete paralysis of the right limb. Partial paralysis of the muscles of deglutition and respiration developed, and at 4 o'clock on Wednesday morning—the 14th—the boy died. This was an imported case.

We have no other cases in Delaware at the present time. We feel that the quarantine regulations in Delaware are quite rigid. When cases are brought to our notice we establish an absolutely rigid quarantine, which extends for a period of 21 days after disinfection or recovery. That quarantine, so far as children are concerned, is carried for that period of time after disinfection. The older members of the family—that is, the workers—are allowed to go after disinfection is completed; and that disinfection, I would say, is as complete as we know how to make it—by scrubbing, cleaning, and formaldehyde fumigation.

As to the State quarantine against our neighbors, Delaware established a quarantine on August 9 against New York, New Jersey, and Pennsylvania. This quarantine is absolute with children under 16 years of age who do not present at our borders a proper health certificate from their place of origin. The cases that come into our State from infected districts or those who have been suffering from poliomyelitis will be placed under rigid and strict observation, so as to prevent, if possible, any foci of infection developing in Delaware. There are rules, regulations, and instructions to our health officers and the cards that we have issued up to the present time, and if we develop poliomyelitis we will have outgoing cards issued for those departing from infected districts; those we have not issued yet, but they will be secured.

The SECRETARY. The District of Columbia; Dr. W. C. Woodward.

Dr. WOODWARD. Mr. Chairman, we have had from the beginning of the current calendar year 16 cases, of which 14 have occurred since the 1st of July. Of the 14 cases occurring since the 1st of July, 2 have been imported, 1 from the State of New York, and 1 from the State of New Jersey. Of the total number of patients 2 have died. In the year 1914 we had 8 cases. At the present time we have established no quarantine against anyone.

The SECRETARY. Illinois; Dr. C. St. Clair Drake.

Dr. DRAKE. Since the 1st day of July we have reported to the New York State Board of Health 230 cases. Each one of these cases has been visited by the district health officer and by the epidemiologist. Twenty-four of the cases have proved not to be poliomyelitis, leaving, since the 1st of July, 206 cases of confirmed poliomyelitis. There have been 18 deaths up to date, a rate of about 9 per cent.

At the present time we have 142 active cases in 76 localities, 50 of which are in Chicago. Of the cases reported in the last few weeks outside of the city of Chicago, 40 per cent are in strictly rural districts; that is, on farms, and apparently with no connection whatever between them, so far as we can ascertain, and the centers of population. Seventy-one per cent of our cases are those of children

under 5 years of age. Out of the 76 communities affected only 11 have more than 1 case.

So far as quarantine is concerned, I may say that we have had very rigid requirements for the last two years governing the control of poliomyelitis. These were amended in July because of the outbreak in New York, and made more rigid. Our period of quarantine is five weeks. We have not quarantined against New York or any other infected area. We do, however, as a matter of protection to the State, inspect the passengers on all incoming trains from the East. The Chicago health department furnishes a number of health officers to inspect all trains coming into Chicago. We require that the railroads shall report to us by wire the presence of children under 16 years of age and their exact destination. We advise the health officers as to the destination of these children and keep them under observation for a period of 21 days—not confinement, but observation. We have had but one case in Illinois that could be traced to New York, and that child left New York about July 1 and came across country by automobile, and afterwards developed the disease in Illinois 21 days after leaving New York. So far as our other requirements and quarantine are concerned, I presume that will be taken up by others.

The SECRETARY. Indiana; Dr. W. F. King.

Dr. KING. Mr. Chairman, Indiana had more poliomyelitis in 1911 and 1912 than it has at the present time. In the year 1911 and 1912 we had a rather extensive epidemic that swept over the State from northwest to southeast, and at that time the State board of health made a statement of 684 cases occurring in the State. The 684 cases probably did not represent more than 60 per cent of the actual number.

Poliomyelitis has been a quarantinable and reportable disease since 1911. Our regulations have been changed in the present epidemic. All cases are reported to the local health officer and to the State board of health. Quarantine is required for 28 days from the beginning. Local regulations are under the administration of local health officers and are outside of the rules of the State board of health.

Indiana has quarantined against no section and has no quarantine regulations, except those governing the control or attempt to control infantile paralysis within the borders of the State. I think four cases have been reported in that way.

The SECRETARY. Iowa; Dr. Henry Albert.

Dr. ALBERT., Since July 1 there have been 25 cases of poliomyelitis in Iowa. These cases have been scattered over various parts of the State, the largest number, eight cases, occurring in one locality in the northern part of the State. This is a place where we had a serious

epidemic in 1910. There was an investigation at that time. I may say that no quarantine has been established against any State or any locality.

Individual cases are quarantined, and quarantine is maintained for three weeks from the beginning of the disease. I may say that we feel that the bulletin which has been issued by the State board of health, written by Dr. Sumner, the secretary, has done a great deal to allay fear as to the disease. At the beginning considerable alarm was felt in various localities, but since the issuance of the bulletin, which has been widely copied by the newspapers, fear has been largely allayed. I may say that I have here a copy of this bulletin, which I should like to leave with the secretary. We feel that it has done a great deal in not only allaying the fears of the people, but also in preventing the spread of the disease. We are in hopes that we will not have a recurrence of the epidemic of 1910.

The SECRETARY. Kentucky; Dr. J. N. McCormack.

Dr. MCCORMACK. Kentucky does not impose rigid quarantine against any State; has never done it, even with yellow fever. We require the reporting of cases coming from infected areas and the keeping of them under observation until the period of incubation has passed.

On July 1 the regulations in regard to certain diseases, and this disease in particular, was made the subject of a bulletin which was widely distributed, and through the newspapers placed in the hands of almost every family in the State. Since then we have required the railroads, as we have always done with regard to yellow fever and other diseases, to report children of nonimmune age to the State board of health, and required the local boards to keep them under observation until the period of incubation has passed.

Up to yesterday we have had 18 cases of poliomyelitis reported this year. None were of children from infected areas, and a majority were from the rural districts. Our rules require that the cases be kept in quarantine for five weeks and the most rigid precautions taken, so far as the management of the patients themselves is concerned.

Our publication, as Dr. Albert said in regard to their publication in Iowa—and that may be emphasized by other gentlemen—has done much to allay public fear and excitement, and we feel in the main that we are prepared to deal with an epidemic should it occur, so far as our present knowledge is concerned.

There is one point that is coming up in Kentucky and has been made the subject of keenest consideration, which I hope may receive some consideration from this conference. As with some other diseases, scarlet fever and infections of that class, we have for years had

and now entertain grave doubt as to the extent to which so-called "sweatshops" in the great centers of population are the means of dissemination over the country. As is known, in the crowded tenement quarters in some of the cities, where there is not rigid inspection, it has often been found that contagious diseases exist in the rooms where clothing is being manufactured, and our fear has been that where there is not rigid supervision this avenue furnishes the greatest means for a wide diffusion of disease. I know that in some of the cities this subject has received consideration, and probably to an extent by the Public Health Service, but we have had considerable fear not only from poliomyelitis but of similar communicable diseases from these sources of contagion. I ran over from Canada yesterday. I have been out of the State for a few weeks, but I am in touch with the board every day by wire, and I am here as a student to gather information, which we all need very much, particularly as to this disease. I hope that if this fear of ours is groundless of danger from infected clothing it may be removed by the consideration which this conference may give this subject.

The SECRETARY. Louisiana; Dr. Oscar Dowling.

The CHAIRMAN. A telegram from Dr. Dowling states that he is four hours late. He will come direct to the conference as soon as he arrives.

The SECRETARY. Maine; Dr. A. G. Young.

Dr. YOUNG. We ordinarily have in Maine a larger number of sporadic cases of this disease than we have had this year. For instance, last year there were 19 or possibly 20 cases. This year, up to the end of July, we had only 1 case. That developed early in the year. Our first case since the end of July occurred at one of the seaside summer resorts, where there were about 100 guests. A child in the family came from Montreal. Possibly the infection was brought from New York, as there were two guests there from New York City. The child died on the third day of illness. The next day we had a case at the terminus of the railroad which goes up through the center of the State to Moosehead Lake, at a place called Kineo. The patient was a young man 27 years of age who had come from New York City to visit his parents. He was taken sick on the second day after his arrival, and died on the third day of his illness. There was complete paralysis of the lower limbs and almost complete paralysis of both upper limbs; one was fully paralyzed and the other not quite fully, death resulting from paralysis of the respiratory tract.

We have had no extension of the cases in either of those places. The second case I speak of was plainly brought from New York. These deaths occurred, as I have stated, on August 4 and 5. In

Portland there has been just one case. That patient is now convalescing. Two rural communities, Canton and Atkinson, each had a single case. Neither had been away from the farm homes. There was no communication and apparently no chance of contact with any infected case. Those were sporadic cases.

In the city of Rockland there have been several questionable cases; but we take care of the questionable cases just as we would those in which positive diagnoses have been made. The first case was not reported; diagnosis was not made. It was probably a case of poliomyelitis. There have been other cases since. The local board of health is doing efficient work, and I am hoping that we will have no further trouble; but because of the fact that the first case was overlooked, and for quite a number of days possibly the disease was present, some of the other summer resorts and the surrounding towns are quite panicky. Altogether we have had 14 cases this year, 13 since the beginning of August. That, I believe, is all I have to report.

I would say that we have every year a very large number of New York people who visit our summer resorts along the coast and in the interior, and I am quite surprised that we have not had a larger number of cases than we have had.

The SECRETARY. You have had a total of 14 cases for the State, then?

Dr. YOUNG. Fourteen cases altogether.

The SECRETARY. Maryland; Dr. John S. Fulton.

Dr. FULTON. The State of Maryland reports up to night before last, the 15th, that all Maryland has had 34 cases of poliomyelitis. Maryland has one and a third millions of population. There is only one large city, Baltimore. After Baltimore there is no city as large as 30,000 population, so that I simply report under those two heads, Baltimore, and Maryland exclusive of Baltimore. Baltimore has had up to night before last 13 cases of poliomyelitis. In the corresponding period in 1915 Baltimore had 25 cases. That part of Maryland which lies outside of Baltimore had, up to night before last, 21 cases, and in the coresponding period of the previous year 31 cases. For all Maryland we had, in 1915, 66 cases, and we have at this time 34 cases.

Poliomyelitis has been a reportable disease in Maryland for several years, and has been regularly named on our notification cards. We consider our notification system an excellent one. Maryland at this time has made no quarantine regulations against any State, nor has there been any internal quarantine up to the present time.

The SECRETARY. Massachusetts; Dr. A. J. McLaughlin.

Dr. McLAUGHLIN. Mr. Chairman and gentlemen, we had in Massachusetts in July 105 cases. It is going to be worse before it is better, and we will probably have 300 or 400 cases in August.

We think that we could account for most of our cases if there had never been an epidemic in New York, but certainly some part of our problem comes from New York infection. The disease is reportable in Massachusetts. The physicians of Massachusetts are reporting the cases, and in fact have overreported to some extent. Every patient is examined by one of the district health officers of the State, and some of the cases are thrown out as not being poliomyelitis.

There have been no quarantine restrictions in the State. The city of Boston and the summer resorts on Cape Cod and the south shore have very close connections with New York, but there has been very little poliomyelitis in that section. The disease has been most prevalent among very poor people, in towns like New Bedford and North Adams. It is not entirely confined to these, however, as is shown by a case reported just before I left. A young man who had just returned from Plattsburg within two days after his return came down with the disease. He was a young man of wealthy parents. It seems to me that it is a most difficult disease to control by quarantine restrictions, and as a health officer I hesitate to put on the restrictions without having some idea of the results we will obtain. As you know, in Massachusetts the State has no power except in an advisory capacity and we have advised the prompt reporting and isolation of cases. As for people from outside of the State who have not developed the disease we have recommended observation for a period of three weeks, but not detention in quarantine of any kind. However, some local communities have exercised their prerogative and have taken more drastic action in a few instances. One town, Great Barrington, I believe, will not allow an automobile to enter with a child in it; and I was told that they would not even allow an automobile to pass through the town to a town more leniently inclined. The State, however, has not taken action imposing quarantine or advising quarantine upon travelers from New York or any other State.

The SECRETARY. Michigan; Dr. John L. Burkart.

Dr. BURKART. Mr. Chairman and gentlemen, we have had since the 1st of January, 1916, 97 cases of infantile paralysis reported to the State board of health. We had 21 cases, scattered over 17 counties, up to August 10; since then we have had 76 more cases.

As a matter of record we show that in 1910 we had 104 cases; in 1911, 68 cases; in 1912, 78 cases; in 1913, 56 cases and 29 deaths; in 1914, 49 cases and 28 deaths; and in 1915, 94 cases and 34 deaths.

Michigan conducts her public health affairs on the township system. The local board of health has an absolute right to institute any quarantine measures that they see fit to impose. The State board

of health recommends what the quarantine regulations shall be. We have no authority other than in an advisory capacity, except in cases of an epidemic. We have authority to quarantine against New York or any other State if, in our judgment, such a procedure is warranted. Consequently we are making our great efforts with the township, city, and village boards of health in order to make them protect themselves and make the system self-working. We have for some time declared infantile paralysis a dangerous communicable disease; in fact, nearly a year ago I was instrumental in endeavoring to get our board to make it reportable. Of course, it is compulsorily reportable. We quarantine and isolate all persons who have been in an infected household, making provision for releasing the adults under certain conditions. The minimum period is four weeks. I will leave this map with the conference as a matter of record.

The State has not taken any severe measures relative to quarantine against outside communities. We are located very fortunately in Michigan, in that we have but two big ports of entry, Port Huron and Detroit. A circular was sent to the health officers of each of those ports early in July asking that very strict supervision be exercised over persons coming from New York or any other infected area. Michigan is a great summer resort State. We have a considerable influx of people from the West and the South, but very few from New York. We started early to make an inspection of these summer resorts. Every health officer was called into council, and instructions were given particularly against allowing persons from New York State to come in unexamined. We have not found it necessary to quarantine, as I said, against New York State.

The SECRETARY. Minnesota; Dr. H. M. Bracken.

Dr. BRACKEN. Mr. Chairman and gentlemen, Minnesota to her knowledge has had infantile paralysis since 1908. In 1908 we had an estimated number of 150 cases, with 9 deaths; in 1909 we had 900 cases, with 234 deaths; in 1910 we had 631 cases, with 201 deaths; in 1911 we had 117 cases, with 59 deaths; in 1912 we had 43 cases; in 1913, 90 cases; in 1914, 32 cases; in 1915 we had 127 cases and 26 deaths.

This year, prior to July 19, we had 47 cases; 10 of these died. Up to August 15 there were 318 cases, with 29 deaths, 271 of these occurring after July 19.

These cases are from 104 sanitary districts, i. e., townships, villages, and cities. Of these 318 cases, 35 were in St. Paul, 72 in Minneapolis, and about 30 in Stearns County.

In Minnesota the disease has been reportable since 1909, I believe. Ordinarily it is reported by the physicians to the local health officers. This year we made a ruling that it should be reported immediately to the State board of health by telegraph or telephone, so that we

could get in touch with the cases more quickly. The cases are isolated; there is not a rigid quarantine. It is our intention to follow up each case reported, and some of the reported cases have been excluded. The physicians are very good, indeed, about reprting suspicious cases, even directly, so that I think we are getting a large percentage of them. The State made an extra allowance to the State board of health for help in this work, so that we have been able to employ whatever assistance was necessary, and the university is cooperating with the board, and has just now put a man in the field with us for two or three months.

Of imported cases, so far as I remember, we have had but two. One was from Montana and the other was from Saskatchewan; so that New York is not the only place from which cases have been derived. Our cases are scattered, and some are in remote districts, and it is very hard, indeed, to determine how they originate.

We have not quarantined against any other State or against any community. The board did not consider that necessary. We think that we are wide-awake, and are helping the local boards of health.

The SECRETARY. Missouri; Dr. J. A. B. Adcock.

Dr. ADCOCK. Mr. Chairman, we have in Missouri about 3,000,000 of people. We have had reported from June 1 to August 15, 11 cases of poliomyelitis and 4 deaths. We have had a few sporadic cases of poliomyelitis each year in Missouri since we began collecting such statistics, in 1910.

We in Missouri have not become alarmed yet, and the board of health has not instituted quarantine against any State. However, we have issued instructions to the local health officers throughout the State to isolate every case of poliomyelitis.

This disease with us moves in a mysterious way. We have had 5 cases in the city of St. Louis, with a population of 750,000 people, and 1 death; 6 cases have been reported from throughout the State, 4 of them on farms in the country and 2 in little towns or villages. No secondary cases have developed. It seems as if the disease drops down sporadically here and there and all around. We have ordered and have maintained strict isolation of the patients.

Really, I am here to learn something about the disease and means for its prevention, so that when our people get disturbed their fear may be allayed. I feel that we need not be alarmed in Missouri at the present stage of the disease, and in fact I believe we have had each year for the past four or five years nearly as many cases as we have had this year.

The SECRETARY. Montana; Dr. F. A. Cooney.

Dr. COONEY. Since the latter part of June we have had in Montana 15 cases reported; 9 of them are from one point and 4 from another,

and there is 1 each from two other sources, all tributary to the starting point.

The SECRETARY. How many cases altogether, Doctor?

Dr. COONEY. Fifteen.

The SECRETARY. How many deaths?

Dr. COONEY. No deaths.

The SECRETARY. Nebraska; Dr. E. A. Carr.

Dr. CARR. Mr. Chairman and gentlemen of the conference, Nebraska has had only 10 cases of poliomyelitis since the first of the present year, all sporadic, with 2 deaths. Poliomyelitis was declared a communicable disease in 1909, and from that time it has been quarantinable and reportable. Our quarantine on poliomyelitis is 30 days as a minimum. In 1910 the disease was epidemic.

Nebraska has a State orthopedic hospital, under the direction of Dr. John P. Lord, which is giving attention especially to these cases, thus benefitting the rich and the poor alike.

The SECRETARY. New Hampshire; Dr. I. A. Watson.

Dr. WATSON. Mr. Chairman, New Hampshire has a normal record, as far as this disease is concerned. There have been during the course of the year 7 cases reported and 2 deaths. They occurred in five different municipalities representing four counties. Not one of these cases was traceable to its origin, and there could have been no connection between them and the cases in New York and Brooklyn. They were evidently sporadic cases occurring among people who had not been in the city.

We have established no quarantine against any other State. In fact, we have left our doors wide open, and to-day in New Hampshire I am speaking within limits when I say there are thousands of people accompanied by children from New York, New Jersey, and Philadelphia. Their automobiles are to be seen in all of our boulevards. Aside from that, we have many summer camps established by parties from outside of the State, located on the borders of our lakes and in our mountain region, and still not a case of this disease has appeared among any of those children.

The State board of health of New Hampshire has absolute power to establish a quarantine; it has absolute power to approve, disapprove, or dismiss a local quarantine in case a local quarantine has been established against another State or municipality; but no case has arisen that has required any action on the part of the local authorities along those lines.

I may say that this disease has been reportable for several years in the State of New Hampshire, and in the present year we have a smaller number of cases than we have had on an average during the last seven or eight years. That is practically the condition that exists to-day in New Hampshire.

The SECRETARY. New Jersey; Dr. R. D. Fitz-Randolph.

Dr. FITZ-RANDOLPH. Since July 1, when the disease appeared in epidemic form, and up to yesterday afternoon, we have had 1,740 cases reported to the State department of health of New Jersey. Allowing for a day or two for reports to reach us, it is very probable that there are at the present time in the State about 2,000 cases in 175 out of the 496 districts. All the counties are represented except Cape May County in the extreme southern portion of the State. The disease has appeared in epidemic form in those sections adjacent to New York City and is spreading over the State at the present time. The State department of health requires that children under 16 years of age coming into the State must be provided with certificates from competent health authorities. This also applies to children traveling from one municipality to another. These regulations were made, first, for the purpose of apprising the local health officials when children came into municipalities; secondly, to discourage as far as possible the unnecessary traveling of children; and, thirdly, to attempt to bring into some sort of harmony regulations which were being made by local health authorities throughout the State. People in the northern part of the State adjacent to New York were considerably alarmed, and this resulted in the local authorities in some counties establishing quarantine regulations which brought about very great impediment to travel and considerable hardship. It was largely for the purpose of attempting to make uniform those regulations that the State department adopted the present system.

The SECRETARY. New York; Dr. George Draper.

Dr. DRAPER. Mr. Chairman, the commissioner of the State of New York sends his regrets to this meeting for his inability to attend. He only ordered me down here last night, so that he was unable to supply me with the figures for the State, but Dr. Emerson, of the board of health, furnished me with the figures for the New York City epidemic up to the first of this week, and they probably would dominate the total figures of the State, so that I should like to ask the chairman to call on Commissioner Emerson to give the figures for New York City. May I, however, ask one word? Are these figures that are being given now based purely on cases of paralysis or cases which have been diagnosed by other means but are not paralyzed?

The CHAIRMAN. Gentlemen, we have here by invitation Dr. Haven Emerson, of New York City, and I suppose you would be glad to hear from him, although he is not a State official. Dr. Haven Emerson, we will be glad to hear from you. [Applause.]

Dr. EMERSON. Mr. Chairman, I suppose I may be considered the chief conspirator in the epidemic. Up to yesterday morning there

have been 6,653 cases and 1,497 deaths in New York City. Since the beginning of the epidemic we have had a large number of cases reported which were found not to be poliomyelitis, the proportion being about 20 per cent of all reported cases. I mention this to indicate the degree to which the medical profession is reporting cases which are doubtful and which need confirmation. Every case which is reported as a true case is on the basis of the visit of a diagnostician, plus a laboratory report on the spinal fluid unless paralysis is present.

The epidemic began the 1st of June. In May there were reported to us 5 cases, which is much less than the usual monthly report for the last few years. In 1912 we had reports of about 40 cases a month throughout the year. On referring back to the month of May, those cases which have subsequently been found on a house-to-house survey and through reports of physicians and hospitals, we have learned that there were at least five times as many true cases in May as had been reported up to the 1st of July. By the 7th of June the division of epidemiology had notified me that there were a number of cases, closely confined to the South Brooklyn water front, limited to the children of Italians living in that vicinity. The upper chart on the wall here represents the onset in the city from that district as a whole, and the chart below represents the onset from the five boroughs, respectively. In the right-hand chart there is shown the weekly incidence of the disease in the various boroughs of the city as a whole.

On the 7th of June I had a report from the epidemiologist of the department that there was this grouping of the cases in certain parts of the city and among a certain race. On the 15th of June mothers began to bring in children to our baby stations—so-called milk stations—with the story that for several days the baby had not been able to lift an arm or a leg. It then developed for the first time that there were many unreported cases, even in places where we were hunting for them. On the 15th of June orders were issued that the disease be given special attention, and an increased force of diagnosticians and nurses was devoted to that particular field. On the 3d of July a special act of the board of estimate gave us authority to engage such labor and help as was necessary. From that time until well on in July the epidemic was pretty well confined to Brooklyn, although of the 15 cases just now discharged after eight weeks in quarantine 4 were from the Borough of Richmond, 4 from Manhattan, and 7 from Brooklyn, so that there was an increase in other boroughs almost immediately after this occurrence in Brooklyn. The race group represented by those cases was largely the Italian laboring class.

As to the disease in the State, I have no exact figures, but I feel quite confident that the cases are well over 1,000 and that the death

rate up to the present time has been about 9 or 10 per cent in the State, whereas in the city it is 22 and a fraction per cent.

If I am not taking too much time, I shall describe in detail the procedure now in force in the city and the instructions issued to the workers in the department [reading]:

I. GENERAL INFORMATION.

1. *Incubation period.*—The incubation period of the disease and the quarantine period of children under 16 years of age who have been, but no longer are, exposed to infection has been set at 14 days.

2. *Quarantine.*—In all families where a case of poliomyelitis has occurred all the children under 16 years (except those who have had the disease) are quarantined in the home until two weeks after the termination of the case by death, removal, or recovery. The patient, whether at home or in hospital, is quarantined for eight weeks from the date of onset of the disease. No case in hospital can return home until quarantine is ended.

We arbitrarily set the period of six to eight weeks at the beginning of the epidemic for the sake of bringing a certain amount of social pressure to bear upon people who would otherwise try to keep their cases at home. We tried to hospitalize the patients as much as possible, although we had no new evidence that the disease was infectious, and we are maintaining eight weeks as the quarantine period in order to persuade people to allow us to take their cases to the hospital, because the burden of expense would be so heavy if they kept them at home.

3. *Placards.*—All premises where a case of poliomyelitis occurs are placarded, except hotels and boarding houses, where patient is at once removed to hospital, room renovated, and no quarantined children remain on premises. In private houses one placard is placed on the street wall of the house and one on the door entering room the patient occupies. In apartment and tenement houses three placards are posted—one on the street wall, one on the wall of the entrance hall, and one on the door of the apartment. All placards are dated and initialed.

4. *Removal to hospital.*—No case is left at home unless the following conditions are complied with:

(*a*) There must be a physician in attendance daily and regularly.

That applies where other than medical practitioners report a case and state that they are in charge thereof. We do not consider that as sufficient protection to the community, and we require a physician in attendance.

(*b*) The patient must have a special attendant, who must obey quarantine regulations, and must not do any housework, marketing, or perform any household duties for other members of the family.

(*c*) The patient and the attendant must have a room or rooms separate from others in the family.

(*d*) All the windows of this room must be screened, and all flies in the room killed.

(*e*) The family must have a separate toilet for its exclusive use.

That was helpful in eliminating many cases from tenements which otherwise we would have been unable to remove. We did not wish the common toilet to be available, because of the recognized infectious character of the bowel discharges.

(*f*) Quarantine regulations must be strictly observed by the patient and the other children of the family, if any. When the disease occurs in the premises of families of food handlers, the employment of such person or persons at this occupation is forbidden, unless they occupy entirely separate apartments for a period of two weeks after the removal, recovery, or death of patient.

(*g*) *Disinfection and renovation.*—The personal and bed linen of the patient must be properly disinfected and, after removal, recovery, or death of the patient, complete renovation of the rooms occupied by the patient is required.

By "renovation" we mean scrubbing the woodwork, painting and papering, and calcimining where necessary; that is, the rooms are not to be occupied again until after the same precautions have been taken as in case of tuberculosis or other infectious disease.

II. DUTIES OF INSPECTORS.

Cases are reported by physicians, nurses, social workers, and other citizens, and all are visited at once by inspectors, even those reported by physicians with request that they be admitted to hospital. Attending physicians to department hospitals may admit cases direct.

The janitor or his representative must be seen in every instance and notified that he or she will be held personally responsible by the department for keeping quarantined children in the family premises and seeing that placards are not removed or defaced.

If the inspector makes or confirms the diagnosis of poliomyelitis the borough office of the department is notified, and by it the ambulance is summoned if removal is indicated. In every case the inspector leaves the hospital admission slip, properly and fully filled out.

All cases of questionable diagnosis are seen at once on consultation with the borough or chief diagnostician, and, whenever it is required, spinal puncture is made and laboratory report submitted by the staff of the research laboratory. Cases with positive laboratory findings are considered as poliomyelitis regardless of clinical signs. A full history is recorded on a special card (Form 316–V) for each assignment covered by inspectors.

III. DUTIES OF NURSES.

Nurses visit every case reported to instruct the family regarding quarantine, and every other family in the house.

(*a*) That there is a case of this disease in the house.

(*b*) That the other children of the family in which the disease has occurred will be quarantined, and that, should they fail to observe quarantine, that fact should be immediately reported to the department of health, when steps will be taken to enforce quarantine by a summons to court.

(*c*) Regarding home cleanliness, personal hygiene, the danger of infection by flies, and other general measures which should be taken to prevent infection.

(*d*) To report at once to the department any cases of suspicious illness of children or any cases of poliomyelitis, especially if there is no physician in attendance.

A current history (Form 304–V) is kept by the nurse for every case, giving dates of visits, action taken, and date and mode of termination.

Nurses must see the janitor or his representative on the first visit and repeat the instructions given by the inspector. Patients remaining at home and families with quarantined children are visited at least twice weekly by the nurse for the maintenance of quarantine, and oftener if necessary. After removal, recovery, or death of the patient, nurses issue renovation notices, following these up by visits until complied with.

IV. DUTIES OF SANITARY POLICE.

These officers visit frequently—daily if necessary—premises in which patients have been allowed to remain, to enforce quarantine and to affix or replace placards. They serve summonses when quarantine regulations are broken and appear in court.

V. AMBULANCE SURGEONS.

All cases ordered removed to hospital must be removed without question, with the following exceptions, in each of which the ambulance surgeon must obtain authorization to leave the case at home from the resident physician of his hospital by the nearest telephone:

(*a*) When removal would endanger life of child (bulbar symptoms).

Bulbar cases may be so aggravated by the least movement, such as that incident to the removal to the hospital, that it might be thought best not to remove the patient.

Mr. Chairman, we have refrained from removing cases that were in a serious condition physically, awaiting the outcome of bulbar symptoms. If physicians can show that the requirements will be complied with, they can have the patients stay at home pending 24 hours' observation.

(*b*) When family physician can show that requirements will be met.

(*c*) Doubtful and mixed infection cases must be removed by themselves in a separate ambulance.

In every case ambulance surgeon must leave a card with parents, giving name and address of hospital to which patient is taken. If inspector has not left admission slip, surgeon must make out same.

VI. VISITORS TO HOSPITALS.

Each case may be visited twice during its stay in the hospital by a parent or guardian. If child is critically ill, the guardian or parent will be notified and will be permitted to visit daily while child is dangerously ill.

Information relative to condition is given out at the information desk in each hospital or by telephone in response to telephone inquiry from the parent or guardian.

VII. HEALTH CERTIFICATES.

All field employees must have had and be familiar with the circular of information regarding health certificates.

VIII. ALLIED, SOCIAL, NURSING, AND LAY WORKERS.

Nurses supplied by the Charity Organization Society, the Association for Improving the Condition of the Poor, the United Hebrew Charities, Henry Street Settlement, and Brooklyn Bureau of Charities, and lay visitors from various social-service organizations under the direction of the department of health make an intensive house to house, family to family survey in infected districts to find unreported cases; to verbally instruct regarding the disease and its prevention by personal and domestic hygiene, and to report illness, especially of children, and insanitary conditions.

The Metropolitan, Prudential, and John Hancock insurance companies distribute literature by their visitors who also report illness and insanitary conditions.

IX. ROCKEFELLER FOUNDATION.

Physicians and nurses supplied by the Rockefeller Foundation, under the direction of the department of health, follow up the ramifications of all reported cases of poliomyelitis, and also do house-to-house inspection, and report suspected cases.

As regards the cases in the State, the records show that there were one or two foci of infection in the State outside of New York before the city epidemic began. The two general areas principally infected by people leaving the city are the Catskill region, which was very rapidly flooded by the Jewish people, who have made this their headquarters in summer for many years, and certain parts of Long Island adjacent to New York City.

Furthermore, the boroughs most recently affected have shown that the cases developed from the boroughs earlier infected. That is the case now in Queens and Bronx Boroughs, where many cases are directly traceable to the moving of families from the older settled parts of Brooklyn. These families are now living in the least congested boroughs, the Bronx and Queens. There have been no provisions excluding people from other cities and States, and we have received patients suffering with poliomyelitis from many adjacent States, with the consent of the local health officers because the facilities for treating persons with this disease were available in the city and were not available in other places.

The issuing of certificates was undertaken for the convenience of the local health officers outside of the great cities, and there have been up to date 86,000 of these certificates granted and 348 refused. The causes of refusal to issue certificates were that people had come from premises where infection existed at the time or where people were, frankly, suffering from poliomyelitis or other temporary illness which was sufficient cause to hold them under observation. Mothers came with their children in their arms suffering with the disease, so that the certificates may have saved some few people from leaving New York with the infection. It is obvious that certificates can

serve merely as a means of identification for the health officers elsewhere and in no sense as a complete means of protection against the disease, inasmuch as the symptoms in the incubation period are absolutely nil. Therefore within two weeks of the time when an apparently absolutely healthy person may have received a certificate the disease may develop, at which time that person may have gotten as far as San Francisco. The certificates were not issued except for the convenience of travelers and as a means of identifying the origin or place of departure of visitors destined to places outside of the presumably infected city.

The campaign of publicity undertaken by the city and supplemented throughout the State by the State department of health has had important results. Parents have been warned that during the epidemic they can not afford to allow any sickness to pass without the observation of a physician, and physicians have been advised of the early symptoms of the disease, so that they may be suspicious of cases which are similar to other mild attacks of disease. They were also informed that the presence of the disease should be verified by spinal puncture or other diagnostic procedure. These were the only resources we had, with the exception of isolation or quarantining of the cases. We have isolated in New York about 66 per cent of the true cases discovered. We have in the hospitals now 2,384 patients with this disease, and of those 2,300 are in the hospitals of the health department and 300 in other hospitals.

There are two or three striking facts that have developed. One is in answer to a question recently asked. There was a strike of the garment workers in New York, lasting three months, which extended over the entire period of this epidemic and up to a week ago, so that New York has been producing in the last summer less sweatshop material than at any other time, and the people have not been working in places of that character.

We have 30,000 children in charitable institutions in New York, supported partly at the expense of the city and partly at the expense of the charitable institution. All of them are under the control of the department of health so far as quarantine regulations are concerned. We maintain a two weeks' quarantine of all children committed to those institutions. There has not been a single case among those 30,000 children in the city of New York. They have had the same water and food supply, have been accessible to the same insects, and have been subject to the same temperature and the same conditions in general as other children, but they have not been in contact with infected children. Furthermore, from the beginning of the epidemic we forbade the visiting by parents at these institutions. These institutions have been isolated in the city with 30,000 children,

as susceptible to the disease as any others, and no cases have developed among them.

Take another instance. Barren Island is the place where all the city garbage is carried by scows, handled and treated, and all dead animals are conveyed. No case of poliomyelitis has occurred among the residents of Barren Island, remarkable as it may seem. I say that because it is a place where one might expect the maximum of fly-carriage infection and the maximum contact with serious garbage conditions. These people do not go off the island much, and nobody visits them unless they have to, so that the place has been isolated, so to speak.

The Borough of Richmond has had, up to the present time, a case incidence of 2.5 per thousand, and the Borough of Queens is already as high as that. The Borough of Brooklyn has about 1.5, I think. At least it is under 2. Yet Brooklyn has had, up to the present time, 3,800 cases and the Borough of Richmond 256 cases. The borough with the widest separation of its people and the smallest number of persons per acre shows the highest case incidence of the disease; and Queens, the next most open borough, gives the next highest case incidence. The most congested boroughs up to the present time show the smallest case incidence of the disease.

The age average is 1 per cent over 16, 15 per cent under 1, 85 per cent under 5, and 95 per cent under 10 years of age.

Our last previous serious epidemic was in 1906 and 1907, and a large majority of all the children affected at this time have been born since the previous epidemic.

I am sorry I can not be more specific about the State report. Dr. Williams, who is the deputy commissioner, is detained by another appointment in New York which could not be given up, and he has asked me to make a general statement for the State. The State has not quarantined as a State against other communities, but many communities in the State which have entire independence in establishing quarantine have adopted rigid quarantine, such as those described by Dr. Randolph in New Jersey. [Applause.]

The CHAIRMAN. I am sure the delegates have been very glad to hear from Dr. Emerson, and on behalf of the conference I wish to thank him for coming here and making this very interesting talk.

Dr. BRACKEN. Is there any relationship between the stables in Brooklyn and the occurrence of the disease? Have you made any examination as to that?

Dr. EMERSON. For two years the stables in New York have been the subject of consideration, and we have been making increasing efforts to control the collection and distribution of manure, and there is no difference, so far as we have been able to determine, between

the conditions in Brooklyn and those elsewhere. There are a good many stables among the poorer tenement sections in Brooklyn, but no more than are present in many other regions. The small vendors and Italian truck distributors, many of them, have their stables in their section. Mr. C. T. Brues assisted Dr. Rosenau in his study of the insects in Massachusetts in their recent epidemic, and his work may develop the possible insect carriers, with the entomologists who are working under the direction of the Public Health Service. No promising facts or even coincidences between insects and the development of the disease in the city have so far been discovered.

Dr. WOLFF. I would like to ask Dr. Emerson, and probably there are other gentlemen present who may have had experience with the disease from which they, too, may be able to answer, if they have investigated and determined positively concerning the relationship between poliomyelitis and the presence of domestic animals, cats, dogs, chickens, and the like? It seems to me that that is an extremely important question to clear up, as to what relationship might exist in the case of these animals.

Dr. EMERSON. For some years past, under the sanitary code of the city, the keeping of chickens or other animals on premises occupied by tenements has been forbidden. There are no chickens kept on the premises of these poor people, in no instance on the premises occupied by tenement houses.

As regards dead animals, there have been about eight times as many dead animals removed from Brooklyn in the last six weeks as in the corresponding six weeks of a year ago. That seems to indicate either a form of epidemic disease in animals, or a sudden change in the social habits of the people. An analysis was immediately applied to this question by the veterinarians of the department and officers acting under the Public Health Service, but up to the present time the death of these animals has not been found to be attributable in any way to disease of the central nervous system, or any increase of other disease. Many people have been killing their own cats or stray cats which they have previously harbored. In many cases, instead of throwing them in the garbage can, they have notified the police at once. The Society for the Prevention of Cruelty to Animals has cooperated, and numerous animals have been submitted to observation, but up to the present time no infection has been found among them, or any disease which is transmissible, I believe, from one animal to another. I can not speak with authority in this matter, but I believe that is the conclusion.

The SECRETARY. North Carolina; Dr. W. S. Rankin.

Dr. RANKIN. I have had reports of about 20 cases over a period of the last two months. There is nothing unusual in the character

of those cases, with one exception. In one county there are 6 cases, and in one town there are 5 cases, and the 5 patients came down within three weeks of each other. That is the only evidence of any common origin existing between cases that I have any record of. There was one case that developed in the extreme eastern section of the State at Southport, which the health officer reports to me as having come from New York five weeks previously. That is all the information I have, and that is in a telegram. There was a newspaper report yesterday of the death of a man at Greensboro who had recently been in New York.

Last year we had 17 deaths reported, which, with a fatality of 10 per cent, would give us about 170 cases. With the single exception of the one town mentioned there is no evidence in North Carolina of an unusual occurrence of the disease.

The SECRETARY. Ohio; Dr. F. G. Boudreau.

Dr. BOUDREAU. Anterior poliomyelitis was made reportable in 1910. Our reports were quite inadequate until recently, so that I will have to give you simply totals. In 1910 there were 74; in 1911, 142; in 1912, 159 cases. This year there were 166 cases from January to August 15; 9 was the largest number of cases in any county. The largest number of cases in any month was in July, when 93 were reported. So far there have been 34 cases reported in August up to August 15. About 115 cases are now quarantined in the cities; these cases have been reported from 53 widely scattered health districts.

Lucas County has the highest number of cases, 50, of which 47 are in Toledo. In the month of July 33 cases occurred in the city of Toledo. Of the 53 health officials, 43 report single cases only, so that only 10 health officials report more than one case.

We do not enforce a quarantine for acute poliomyelitis in Ohio, but we recommend that all health officers establish such quarantine. We discourage the congregating of children. We have no rules governing the entrance of children into our State, but some of our children who have left the State recently have been interrupted in their travels, although they did not go from infected districts.

We have had excellent cooperation from the Public Health Service and from the health commissioner of the city of New York. We have received a number of children from other districts, particularly from New York, and we have kept those children under observation.

The SECRETARY. Oregon; Dr. D. N. Roberg.

Dr. ROBERG. In Oregon the statistics show that in 1910 there were 143 cases, with 54 deaths; in 1911, 55 cases, with 16 deaths; in 1912, 5 cases; in 1913, 3 cases; in 1914, no cases.

In the last 13 months there have been 3 sporadic cases. In Oregon we have no tenements or slums, as in the larger cities, and the tendency is to believe that the sporadic cases do not become epidemic.

On July 15, when we learned that San Francisco had had an imported case, we immediately tried to put into effect an inspection of all trains and railway stations. The expense of this was considerable and we found we would have to form a cooperative plan with the neighboring coast States, so that on July 15 a conference was called, at which were represented California, Oregon, Nevada, Idaho, Washington, and in addition the district of British Columbia. Representatives of the various railroads and of the Public Health Service were also present. These five States and British Columbia adopted a uniform set of regulations, a copy of which I will leave with the secretary. This system is cooperative. It does not quarantine against any particular place, neither does it tie up railroad traffic. It is working splendidly in Washington and Oregon, to my knowledge. In California, which has been using the inspection system, according to a letter which I received on August 10, they have adopted this notification system, and will probably entirely dispense with the inspection system. The notification system consists of the passenger from an infected point traveling west, filling out a card giving the starting point of his journey, date of departure, and destination, naming the city and State. This card, showing the address of the passenger, is left with the ticket agent from whom the ticket is purchased, who immediately forwards it to the health officer at the place of destination, the passenger going immediately to his home where he can be kept under observation. In case of illness of a passenger the conductor is instructed to telegraph ahead, either to the passenger's destination or to the nearest point on his line where he knows there is a health officer.

We wish to thank the Public Health Service for cooperating with regard to one of our regulations which provides for a card being sent to us from the infected district. We use the cards from them to check up the cards from the conductors.

The SECRETARY. Pennsylvania; Dr. S. G. Dixon.

Dr. DIXON. Mr. Chairman and health officers of the United States, I have very little to say. To cover a multitude of details I will refer you to a report made by the Commonwealth of Pennsylvania on the epidemics of 1907 and 1910. In those years a most intensive study was made and an investigation of the houses and all conditions throughout the Commonwealth, as well as intensive laboratory studies. That intensive study was reported in full, and those reports, if you have not secured them already, are available and obtainable by you upon request. There has been very little additional informa-

tion discovered by our department in this epidemic beyond that found in 1910.

This present epidemic began about the 1st of July, and up to yesterday we had 336 cases and about 50 deaths. The death reports do not come in, however, as soon as the case reports, because case reports are wired to the State department. Every case in the State is checked off by a State officer, or in cities of the first and second class by the officers of those cities, and no case is reported unless paralysis has taken place. Other cases, however, are studied and kept under observation.

Pennsylvania was going on in the even tenor of its way in regard to the control of this disease, as it had in other years, until we found that it was gradually creeping up on us, and we discovered that children were coming over from New Jersey and New York from infected centers. Then, upon investigation, we found a number of children came over who were infected, apparently so because of the time in which they came down with the disease. We even discovered children coming over in the acute stages of the disease. On account of our ignorance in regard to the nature of the disease, its transmission, etc., we concluded that it was better to keep infected cases out of the State, or, in other words, merely to ask the other States to do what we were doing ourselves and to inform us of conditions.

In Pennsylvania quarantine is absolute. The room or rooms in which the children are kept have all insect life exterminated and are screened. They are visited by nurses every day, or, if not by a nurse, by a competent attendant. The wage earner, however, when the disease is first detected, can be disinfected and can leave his home and remain away until after the quarantine period. This is to save the great expense that would otherwise be placed upon the poor boards throughout the Commonwealth. We have instructed individuals and the various municipalities to clean up thoroughly and to try to exterminate insect life, even insects found on animals. That was referred to a while ago. Dogs and cats are supposed to be disinfected or done away with.

I want to say that there is one thing that seems to be most important upon which we are working. There is a feeling that fly-breeding places are infected more than where such breeding places are not found, so much so that we are paying a great deal of attention to exterminating flies. We speak of the thickly populated places, against more sparsely populated ones. Philadelphia has about two-thirds of the cases. Outside of Philadelphia there are six and a half millions of people, scattered over 45,000 square miles. We have cases developing in the most remote and mountainous districts, where we can only detect communication with the outside through the United States mail and the foodstuffs and clothing received.

There is absolutely no contact with other people from infected houses. Very markedly is the fact set out throughout the entire State that there are very few secondary cases in families having two or more children. That is a fact that stands out everywhere, not only here but in New York City as well, which certainly indicates that man has a great resistance to this infection, because there is hardly a county in Pennsylvania, and there are 67 counties in the State, without one or more cases of this disease. The poison must be very widespread, and yet there are few secondary cases. We had 398 patients who slept in the same beds and ate of the same foodstuffs, and lived in the same environment so far as we could determine, and yet we had only 23 secondary cases.

Dr. Emerson has said something which I think ought to have great weight with us all, and it is very comforting for me, because I have been responsible for the quarantine in Pennsylvania. He says what we have found to hold true in the Commonwealth of Pennsylvania, that in these great institutions where they have so many children, which have been practically quarantined, there has not a single case of this disease developed.

Gentlemen, I might go on and give you all the details of our instructions and so on, but they are all printed, and if anyone desires them a postal card to Harrisburg will bring them. It seems to me that the great object of this conference is to bring about uniformity in handling this disease.

The CHAIRMAN. I want to thank Dr. Dixon for his statement, and I am sure that the conference is very glad he has been able to come here at this time.

The SECRETARY. Rhode Island; Dr. G. T. Swarts.

Dr. SWARTS. Mr. Chairman and gentlemen, of course, Rhode Island being a small State, this conference would not expect to get very much from it, but we are intensely interested in this question. The disease, poliomyelitis, has been reportable by State legislation since 1911. In 1910, during the general outbreak throughout the country, we had 248 cases and 46 deaths, and last year we had only 27 cases; so that we have the disease with us at all times, more or less. We have had in the State, since the outbreak in the middle of June, 53 cases with 9 deaths.

Our system of quarantine of those from outside the State is perhaps different from some States, and yet it is like many others which have been reported here. Rhode Island professes to be a hospitable community. There was a reverend gentleman named Roger Williams, who was ostracized in Massachusetts and came down to Rhode Island with the intention of making his home there, who was met by the Indians with words signifying "What cheer." Our system of quarantine is to receive anybody who comes, if they are able to come.

If they have poliomyelitis, they are not able to come. We do not expect inspectors at the railroad trains to be able to discover poliomyelitis upon the station platform. If people come to our State with the disease, we do not send them back. We have a proper reception for them, whether they come with or without the disease, and we give them all the quarantine, observation, and attention that the health officers can supply. [Applause.]

By our system at the present time, by the order of the board of health—and it is at my desire personally—we have trained inspectors on all trains. This requires 10 inspectors, there being two or three lines of communication by rail and several lines of boats coming from the infected places in New York. We are taking not only the names of those who come from New York, but also of those from Massachusetts and New Jersey. Our system is to ask kindly, if children under 16 years of age are in the company, "Where did you come from? What is your name and address, and where are you going?" so that we can take care of you after you get there. The only restriction we place upon persons coming into the State is this, that after they reach their destination they keep their children separate from the Rhode Island children, so that they can not get measles from the Rhode Island children. [Laughter.] The thing has worked out very nicely, so that from the time when inspection was instituted, June 18, up to a few days ago there had been received 415 families, representing 680 children.

Immediately upon receiving reports from the inspectors we refer at once to the lists which New York City sends out from there, showing all the cases in the last 24 or 48 hours. Our clerks go through every one of those lists. In that way they determine whether persons have come from an infected house in those districts. In two cases we have found that persons came from houses of this character, but no cases of illness developed. We have had children who were taken sick within two or three days after arrival. We could not tell whether they were sick before they started, and there was no reason to consider that there was any negligence on the part of anyone along the line. When people come into the State and we are notified, the local health officer goes to the house where they locate and places a limited quarantine of two weeks. Our term of quarantine for actual cases is four weeks. We do not detain adults. We request the attending nurse or the mother of the patient to keep herself as clean as she can and not to go among other people. We have not restricted the attendance of children at playgrounds. We have thought that the restriction of children from the open air would be more deleterious than the chance of a case of poliomyelitis.

The SECRETARY. South Carolina: Dr. J. A. Hayne.

Dr. HAYNE. Mr. Chairman, as this disease is one that we do not thoroughly know the cause of, we determined that we would institute quarantine, it still being a reportable disease and regarded as contagious. It was placed upon the list in 1908 in South Carolina as one of the reportable and quarantinable diseases, a disease which would be put in what we would call modified quarantine; that is, we thought the patient and the attendant or nurse should be isolated, the parents and other members of the family being allowed to attend to their vocations, provided they did not see the patients or come in contact with them.

About the 3d of July we received a telegram from the Surgeon General of the Public Health Service asking if there were any cases of poliomyelitis in South Carolina. We reported that there had been none since the 1st of January. On the 3d of July we issued an order to the health officers and local boards of health to report all cases of infantile paralysis by telegraph. Of course the newspapers have published a great deal concerning the epidemic in New York, the public were frightened, and the doctors were compelled to make reports of the disease whether they wanted to or not. As a consequence we had 18 cases of poliomyelitis reported in July. These were investigated by competent authorities and verified, the diagnosis being made by the paralysis.

We did not feel at all alarmed in July, except that the cases toward the latter part of the month were a little more numerous than in the early part. In the first two weeks of the month we had 5 cases, and in the last two weeks we had 13. When I left home it was the 15th of August, and up to that time we had had 37 cases reported during the month, making a total of 55 for the State. These cases did not occur in the large cities. We have but one city of any size, Charleston, and we have had only 1 case there. Columbia has 1 case. Rockhill, which has about 8,000 or 10,000 people, has 6 cases. The only interesting feature that I see in the report is in regard to a place called Swansea, a borough that trains hardly blow at as they pass, where they have had 16 cases, 2 on the 1st of August. On going over there, I found that two children had come to the town from New York; and there being no local health authorities, I presume the notification card went astray. It never reached anybody in the locality, and no precautions were exercised. In Columbia the local health officer when he receives a card goes and spots the case and puts it under observation. In this instance in the locality mentioned containing these 4 small places there were 16 cases, and they are reporting many new cases a day, so that it is developing into epidemic form. We became a little frightened from that, and we put on this quarantine. We thought we were very negligent and lax in our State, but

after listening to the reports from other States we consider that we are very severe.

We require every ticket agent before selling a ticket to any child under 16 years old, whether from an infected district or not, to demand a health certificate, and that health certificate is pinned to the railroad ticket and taken up by the conductor and checked up by him. Once a week the health certificates are required to be sent in to the State health officer. Now, we have no quarantine against any State outside of South Carolina, but we have a very thorough intrastate quarantine; that is, it does not quarantine, but it certainly discourages travel. These children have to get these certificates before they can buy a ticket, and if they board a train with a certificate not pinned to their ticket they are put off at the next station. The consequence is that it is being made so warm for the health officer that he decided that he had better come to Washington. [Laughter.] The point is, Can we not have some uniform health certificate that will be good in one State as well as another? My friend Dr. Rankin does not require health certificates in his State, and people come from North Carolina to Columbia without them. They then attempt to buy a ticket in Columbia or other place, and they can not get it without a health certificate, so that they are unable to leave. They then get on the trail of the health officer and come down and besiege my office with a whole lot of crying children, and it is right annoying. [Laughter.]

The SECRETARY. South Dakota; Dr. E. B. Jenkins.

Dr. JENKINS. In 1913 South Dakota had 9 cases and 2 deaths; in 1914, 14 cases and 1 death; in 1915, 18 cases and 3 deaths; in 1916, 22 cases and 4 deaths. The cases this year are scattered over 10 counties. Seven of them are in Minnehaha County. Sioux Falls is the largest center of population of South Dakota, with about 22,000 inhabitants. All diseases are handled by the county health officers in South Dakota, and they are instructed to be extra cautious during this epidemic. The people are not alarmed over the prevalence of poliomyelitis, and there is not as much probably in South Dakota as there is in certain Eastern States.

The SECRETARY. Tennessee; Dr. H. H. Shoulders.

Dr. SHOULDERS. Tennessee up to June 30 had 27 cases. In July, up to the 22d, it had 9. There were no cases in the centers of population, all of the cases occurring in rural communities.

The SECRETARY. Texas; Dr. W. B. Collins.

Dr. COLLINS. Mr. Chairman and gentlemen, this disease has not been on the reportable list in Texas by law, but in the last year we have insisted on having it reported, and especially since the excitement began in New York. I find that we had reported in June 6 cases in 6 counties in Texas. In July we had 22 cases in 11 counties,

and up to the 11th of August, when I left home, we had 16 cases. These were all in sparsely-settled counties. None of the larger cities have been infected.

In 1910 and 1911 we had a considerable epidemic of this disease in Texas in some of the larger cities, although nothing like the epidemics reported here, but this year the cases have occurred in the outlying counties. We have a great many counties with small populations distributed over a large area. On this map you will observe that the area extends from the northern portion of the State, in the Panhandle section, as they call it, over 800 miles from one point to another. Not knowing any better way to deal with poliomyelitis than by quarantine, "modified quarantine," as one gentleman here has called it, as head of the State board of health I have isolated the patients, allowing them to be visited and cared for by one member of the family, the rest of the family being kept totally away and allowed to go practically anywhere they please. We have advised cleaning and general sanitary measures and personal hygiene, laying special stress upon mouth and nose hygiene. Not knowing how the disease is carried, by whom, or in what way, I thought to deal with it broadly along the lines indicated.

We have offered no quarantine whatever to the traveling public. The railroads have kindly assisted me in the matter, and on the 1st of June, when things began to get a little scary, organized a railway surgeon's staff, with the view of cooperating with the State of board of health in preventing communicable diseases. We were dealing with Mexico at the time, and also with travel from the East. Our railroad authorities will not sell a ticket now from any infected area in a foreign republic like Mexico or from a foreign State which is known to be infected with any communicable disease, unless the party has a health certificate. He must present a health certificate to the ticket agent. This is issued in duplicate. We issue that certificate in duplicate and the party carries one copy with him stamped by the ticket agent and the other is kept by the officer who gave it for a permanent record. That is done in dealing with the foreign Mexican population, and also in dealing with the traveling public. We merely intend to keep check on travelers and keep them located; at the same time we wish to discourage the coming of the foreign Mexican population, and we think we are doing it, with the help of the Public Health Service, the Army, the Rangers, and everybody on the border.

I do not know that I can say anything further about Texas. We have had poliomyelitis there for 30 years that we know of, with sporadic cases now and then, and we are not able to trace one case to another. It is one of the difficult problems we have to deal with. I myself have been seeing it for 30 years away out in country places

where people did not visit anybody or anybody visit them for months. Possibly it is the result of the season, but I do not know. Is it a seasonal disease, a hot-weather disease, or is it a fall or winter disease? I have not yet heard that discussed.

The CHAIRMAN. I think that will come in a little later on the program.

Dr. COLLINS. I beg your pardon; then, I will just leave that thought with you.

The SECRETARY. Vermont; Dr. H. A. Ladd.

Dr. LADD. Mr. Chairman and gentlemen, I am glad to report that Vermont has no recent cases of infantile paralysis. We find ourselves in the same condition that the epidemic sections will be in a year hence. We had our big epidemic in 1914, with approximately 300 cases in a population of 200,000 people. Only a little over one-half of our State was involved. We find cases cropping out all the time now that evidently had the disease in 1914, and we are discovering cases through atrophy and loss of function in persons who do not know when they had the attack.

In taking up our plans of active treatment in the last year and a half, starting in the first part of 1915, we secured the services of Dr. Robert W. Lovett, of Boston, the orthopedic surgeon, and his assistants, and they came to Vermont and held five clinics at different points in the State. The patients, through their family physicians, were urged to attend these clinics free of charge and have Dr. Lovett prescribe treatment or braces for them or to advise an operation if necessary. At these clinics we had patients who had been afflicted from 2 months to 70 years with all sorts of deformities, and the doctor prescribed for them at that time.

In the latter part of 1915 he came again to the same five cities and examined the patients to ascertain whether they had improved or otherwise, and just recently he has been with us for the third time. We find there is a remarkable improvement in all the cases that have followed his direction. We have two experts now traveling around the State in cars, helping the parents and nurses to care for these cases and follow up the treatment just described, and we are trying in every possible way to assist these cripples. I have in mind several patients who had been paralyzed 9 or 10 years who are now up on crutches, going to school and happy.

We have also established a research laboratory, which is under the direction of the Rockefeller Institute. Dr. Amoss is in charge and has an able assistant in Dr. Taylor. I think that is all I have to say.

Dr. MCDONALD. I should like to ask the gentleman from Vermont what the State is doing for the prevention of the interstate spread of the disease.

Dr. LADD. All children under 16 years of age coming to our State from New York are put under modified quarantine for two weeks, maintained under observation, and kept at their boarding places or homes. At the end of two weeks their noses and throats are irrigated and treated before the quarantine is raised.

The SECRETARY. Virginia; Dr. E. G. Williams.

Dr. WILLIAMS. Mr. Chairman and gentlemen, up to date the only recorded epidemic we have had of poliomyelitis was during the summer of 1908. In July of that year about 25 cases developed at and near Salem, with a population of 2,000 or 3,000. The weather was hot, and as soon as a cool spell started, the latter part of July, the cases ceased. In August another hot spell came on, and two cases were reported. There were no further cases reported. Since then we have had sporadic cases in the State, cases being reported every year and every month during that time. Last year there were more cases during the first six or seven months than in the corresponding months of this year. We have had fewer cases this year than last year.

One characteristic of these cases has been that they have been in isolated places, most of them being off the railroad. They are widely distributed over the State, some in the mountains and some in the tidewater counties. In June we had 10 cases reported from nine counties. Only one county had more than one case. During July there were 19 cases reported. In only two counties was there more than one case, each of these having two cases. We can not attribute any of these cases to importations, except one patient who came to Richmond from Philadelphia and in 36 hours developed the disease. Most of these cases seem to have developed in Virginia, and, as I say, in isolated places. In Lynchburg we have had only one case and in Richmond one; the other cases were in isolated sections.

Poliomyelitis is a reportable disease, and quarantine regulations are practically the same as for scarlet fever.

The SECRETARY. Washington; Dr. T. D. Tuttle.

Dr. TUTTLE. Mr. Chairman and gentlemen, the State of Washington had quite a severe epidemic of poliomyelitis in 1910 and 1911. A report was made on that epidemic. Since then we have had sporadic cases.

Washington this year had three cases, one of which developed in February in the family of a railroad conductor on the west side of the slope of the Cascade Mountains. In June or July another case on the east side of the Cascade Mountains developed. In addition we have had three other cases.

On the 12th of July Dr. McBride, the health officer of Seattle, was examining all passengers to determine their origin. He obtained the address of two children who arrived from Missoula, Mont., and

went out into the country about 5 miles from Seattle to visit their grandmother. On the 14th the children went berrying, a 4-year-old boy with his sister 6 years old, together with an 18-year-old boy. That night the 4-year-old boy was taken sick with stomach symptoms. We require that all these children report if they become ill in any way. The child was apparently well the next day, and the doctor said he could go out the following day. On the next day the doctor found the sister down with a typical attack of anterior poliomyelitis, and the younger child showing a slight attack. On the 19th the health officer found the 18-year-old boy who accompanied them with an attack of the disease.

No other persons have been affected, doubtless because the children were kept in absolute quarantine. I differ with some of those here to-day in regard to quarantine. I do not know how infantile paralysis spreads, and I want to quarantine just as tightly as I can, and I maintain quarantine for eight weeks. All people coming into our State are observed for 20 days after arrival. They are not quarantined. We simply take their addresses and keep them under close observation for 20 days.

The trouble with the card that is sent out from New York is that it is sent to the local health officer. In many cases there is no local health officer, and the postmaster gets it and simply chucks it in the wastebasket.

A large number of the people coming to Washington are in transit to places in California, so that we must not only watch people destined to our State but people traveling through it. Owing to our cooperation with other health authorities, we are able to do this and to notify adjacent places in California, Montana, or wherever the travelers may be going, if patients become ill.

The SECRETARY. West Virginia; Dr. C. R. Weirich.

Dr. WEIRICH. West Virginia has had 8 cases of poliomyelitis in July and August, the first case being in the city of Charleston. The cases have all been sporadic and not traceable to any outside source at all.

The SECRETARY. Wisconsin; Dr. C. A. Harper.

Dr. HARPER. Wisconsin up to the 1st of July of this year reported 17 cases. During the month of July there were 19 cases reported. During the first 15 days of August there were 34 cases reported. Of the 53 cases in July and August, there were 6 deaths.

We have 71 counties in Wisconsin. These cases are distributed among 21 counties. The rural districts show more cases than the urban. The city of Milwaukee, with nearly 400,000 population, has 1 case. Every case is investigated by a deputy State health officer, and only those patients showing paralysis are recorded as infantile

paralysis. Two cases showing paralysis after investigation were proved to be syphilitic and were eliminated.

Our quarantine is absolute for a period of three weeks. In one family there were six children and 3 cases, and in another family six children and 2 cases. In all other families, whether consisting of more than one child or not, there has been only 1 case. None of these, apparently, has been imported. Neither is there any connection, apparently, between the cases.

In 1909 we had nearly 600 cases in about one-fourth of the State; 350 of those cases were investigated, and of these 15.2 per cent were fatal. The area covered by the epidemic in 1909 is comparatively exempt up to date.

In 1913, in the most southwestern county of the State, we had 28 or 30 cases develop from a certain center, and the epidemic at first appeared as though it were going to be severe. It started in the latter part of August and continued into September, and then, with cool weather, it abated. We have been watching that county, and up to date this year no cases have developed.

We do not inspect outsiders who come into the State, but the matter has been under consideration. The United Charities of Chicago have been in the habit of sending large numbers of children into southern and middle Wisconsin for an outing. They asked permission to do so this year. We told them after considering the matter to go on and not to wait for further orders. We do not feel that the disease is always of the epidemic type. Of course with the epidemic we had in 1909 and with the threatened epidemic in 1913, the people are much alarmed. We were freer from the disease in the first six months of this year than we were during the corresponding six months of last year—that is, freer from sporadic cases—but both winter and summer we have had deaths.

The CHAIRMAN. This completes the list of the delegates who were present at the beginning of the calling of the list. I think several health officers have arrived since we began, and the secretary will again call the roll of States, so as to give those who were not here when their States were called opportunity to respond.

The SECRETARY. Florida; Dr. J. Y. Porter.

Dr. PORTER. Mr. Chairman and gentlemen of the conference, my experience with this disease has not been altogether different from that of the rest of delegates. Prior to the present year we had a few scattered cases in Florida each year, and aside from the epidemiological and etiological study and interest which they created, and the general sympathy which arose for parents whose children suffered from paralysis, there was nothing remarkable in the history of the disease, as far as the State board of health is aware. I have seen cases of the disease occurring in a family of six children and

only one child affected. I have seen a case arise in the city of Key West, almost the southernmost point in Florida, with not another case developing. That patient was not particularly isolated.

I have come up here to learn something concerning the disease and not to talk about something that I know nothing of, and I hope that I may get the information before I leave here.

When the disease assumed alarming proportions in the North I exercised supervisory control over the travel of children from the States of the North to Florida. About 85 per cent, I suppose, of all travel into Florida comes through Jacksonville, and the child travelers were inspected by members of my staff and by the trained nurses connected with the State board of health, the temperatures of all children being taken. It was recognized that all children have more or less elevation of temperature from travel fatigue, but where the temperature was over 100, if the destination was Jacksonville, the address was taken and the children kept under observation by competent visiting nurses for at least two weeks. That was for children under 16 years of age. Where they were destined to other towns in the State their addresses were taken and the health officer at the point of destination notified. In case there was no health officer the mayor of the town and municipal authorities were apprised of the fact that the children were coming, and they were kept under observation. So far we have had no cases reported which could in anywise be traced to importations. Of the six cases reported this year I think three can be eliminated as not being poliomyelitis, because they have been investigated, and another is exceedingly doubtful.

The other two cases are interesting from this fact, that they occurred 10 miles in the country at a little town called Perry. The family had not been away from their farm, and the first child, which was 16 months old, had not been in town since its birth. I was doubtful about the case, and sent one of my best men down to investigate. He had some trouble getting there, but he reported that the case could not be anything but poliomyelitis. Now, the interest comes from the fact that another child in the same family was also taken ill. Those are the only two cases of poliomyelitis that I know of positively in Florida in the present year. At the commencement of this excitement in New York and of hysteria in a good many other places, we requested the doctors all through the State to report promptly any cases of infantile paralysis occurring in their practice, and it is needless to say that we are going to have a great many that will turn out not to be poliomyelitis when they are thoroughly investigated. As my good old friend, Dr. Wall, of Tampa, used to say, when a disease is generally prevalent, the physicians seem to think that everything is of that particular order.

I think we are doing everything that is rational and reasonable in our State to prevent any importation, and I have no fear of the disease becoming epidemic if a case or two should be introduced.

The SECRETARY. Louisiana; Dr. Oscar Dowling.

Dr. DOWLING. Mr. Chairman and gentlemen, I have these statistics for Louisiana: In 1911 there were 16 cases in one parish—what I call a parish is what you call a county—in the northern part of the State. There were very few deaths. During that same year six cases occurred in one family. The home of the family adjoined the residence of a lady who was the wife of a banker, and this family packed their grips and started away on the first train. Less than 80 miles from home the oldest child was stricken. They went to a sanitarium, and after reaching the sanitarium the second child was taken. Those are the only instances we have had of more than two cases in the same family.

We have endeavored to keep all children quarantined, to intercept visitors, and to prevent members of the family leaving home, but we find that unless we place a guard at the premises the best of them will go and come in spite of instructions.

There were 26 cases without a single death last year. Fifty-one cases have occurred in Louisiana since the 1st day of January of this year. The large majority occurred within a few months. Of the 51 cases 4 deaths were reported. One was a traveling man from Georgia, 28 years of age. That case was diagnosed after leaving the hospital in New Orleans. When we sent a special representative to investigate it, he was somewhat doubtful about the diagnosis; but there was no question about it. We accepted in good faith the diagnosis of the attending physician.

Another girl, colored, 17 years of age, was diagnosed at the hospital as having infantile paralysis, but later several doctors wrote me and said that the girl had been injured by falling from a height of 14 feet and striking her head, and they were doubtful in their own minds whether the paralysis was due to some other cause than poliomyelitis. Eight of these cases occurred in the city of New Orleans, and I might say that they were imported, most of them, from all over the country. The other cases have occurred in the country. In one little town there were 6 cases following rapidly one after the other. Four cases were reported at one time and the other two in five days thereafter. In this same territory there were 20 cases of typhoid fever. We sent a physician in there and had the community cleaned up. What the effect of the cleaning up was we can not say, but there have been no additional cases of typhoid or infantile paralysis reported from that neighborhood. Two hundred and fifty people were immunized by the use of the typhoid vaccine.

We have had children from New York, and they are being watched closely in communities where we have a local health officer, and by

the State in communities where there is no health officer. Therefore I believe it would be well for the same parties to notify the State board of health, that it may have the local officer or somebody else interested watch such cases.

(The Secretary here completed the calling for the second time of those States for which no representative had responded.)

The SECRETARY. That completes the roll.

The CHAIRMAN. Gentlemen, I think we should assemble promptly at 2 o'clock in order that we may get through with our program.

(At 1.15 o'clock p. m. a recess was taken until 2 o'clock p. m.)

AFTERNOON SESSION, FIRST DAY.

(The conference was called to order after recess by Acting Surg. Gen. A. H. Glennan, chairman.)

The CHAIRMAN. In order to give Dr. Draper a chance to get away for New York we will hear from him on the symptomatology of poliomyelitis.

SYMPTOMATOLOGY OF POLIOMYELITIS.

Dr. DRAPER. Gentlemen of the conference, the commissioner of the State department of health of New York asked me if I would come down, owing to his inability to do so, and say a few words on the subject of the symptomatology of this disease. I imagine that the relationship between the discussion of the symptomatology and the purpose of this meeting is to make possible a better method of preventing the spread of the infection. In the first place, I think it is only fair to say that any quarantine measures which are based solely upon those cases of infantile paralysis which show paralysis are without value, because the cases of infantile paralysis which develop paralysis are much in the minority, and unless the disease is recognized in the nonparalyzed form no quarantine measures which apply only to the paralyzed individuals are adequate. Consequently it behooves all of us to observe with the greatest keenness the instances of sickness in children this summer. Now, in epidemic times we are all alive to the possibilities of sickness in children, and in the reverse of the methods of the law courts we should consider every sick child this summer guilty until proved innocent.

Now, how are we to recognize the nonparalyzed type? A few years ago it seemed an almost impossible thing to do, but as the result of the work done in various parts of the world and different sections of our country, one of the most important contributions being that from the workers in Vermont two years ago, we have gradually been learning to recognize this disease without regard to paralysis. Indeed, one of the men who was working with us down in the Long

Island foci said just before I left, "You know, I do not believe we need pay any attention to paralysis any more." That man is possibly a little extreme, but I firmly believe that before very long we shall be able to recognize this symptomatology and recognize that poliomyelitis is not essentially a paralytic disease. What are the features, then, which stamp it as a definite, clean-cut, clinical type of acute infectious disease? There are certain features of every disease which a skillful physician knows but does not quite know how he knows, and is quite unable to transmit the information to anyone else. You are all perfectly familiar with the picture of a typhoid patient. You can make a diagnosis from the foot of the bed; yet you could not describe exactly what it is you base your diagnosis on. This is true of a great variety of diseases. It is what Dr. Shattuck, of Boston, calls the "clinical hunch." It is a valuable thing, but it should not be final.

Poliomyelitis has a very definite clinical picture, but I can not transmit it to you as it presents itself. It is a definite thing, and if you see a large number of cases you will soon come to feel like the man I spoke of who, just before I left, told me that he does not think we need to look for paralysis. The cases appear as a clean-cut clinical picture of an infection that has an individuality about it. Now, what are the more definite things we can transmit from one to another in the way of recognition?

In the first place, the manner of onset. There are several very definite methods of onset. The first, and perhaps the most common, is when a child previously physically well suddenly complains of a headache, malaise, and has a temperature. Frequently just preceding the more definite symptoms of headache and pains in the bones, joints, and muscles, the child is noticed by the parent to be lying around, the usually active child being found sitting crouched up in a chair or on a sofa. He does not say anything about being sick, but there is an absence of the usual activity. The temperature is found, as a rule, at these observations to be 102° or 103°. Frequently the child is constipated and the mother gives it castor oil, and then the child vomits. There are numerous histories of castor oil followed by vomiting; and then the child seems better. There are many cases that never go any further than that. Cases with exactly the same onset picture, within 12 hours or 24 hours develop a paralysis, but a great many more with that particular onset never show further symptoms, and the thing is passed over casually as a summer upset.

Another form of onset which is fairly common is a long-drawn-out and straggling development. The child is sick and out of sorts, and with no appetite. He may have a little diarrhea, and there is usually

a history of some indiscretion in diet. It is amazing how constant the history of indiscretion of diet is, accompanying these cases. They go along five or six days with irregular temperature of 99½° or 100°, not looking like anything in particular, and then all of a sudden paralysis ensues or the cases clear up.

Then, there is another group which is becoming more and more definite as we learn more of it. Apparently it is getting to be a very frequent one, and we have dubbed it, just among the group of workers down on Long Island, "the dromedary type," because it has two humps. The case starts in much like the first group I have described, with a rise of temperature, gastrointestinal disturbance which runs 24 or 36 hours, and then the entire picture clears up. After a day of two of illness the child is up and running around, apparently as well as ever. Then after two or three days, and we have seen it as long as three days, suddenly there is headache, pain in the neck, and a beautiful picture of meningismus, with a temperature of 103° or 104°. That is a very definite group which is increasing in number as we study the disease.

Finally, there is the fulminating meningeal type, that at first sight resembles cerebrospinal meningitis so closely as to be indistinguishable. They have all of the signs of a very acute meningismus and frequently unconsciousness, delirium, and convulsions.

There are several very valuable aids to the diagnosis determined by physical examination, and among the first of these is the sign which we found quite constantly, pain on anterior flexion of the spine. The textbooks have spoken about the stiff neck and Kernig's sign in poliomyelitis, but examination will convince you, I am sure, that both of these depend apparently on the unwillingness of the patient to permit the spine to be flexed anteriorly because it is painful. When you go to bend the spine you will see the child watching the hand as you put it under the head, and he will stiffen the head and prepare to resist; in the same way if you are going to do a Kernig manipulation you will see the child get ready to resist. Some children, if you lift the shoulders or thighs, immediately stiffen back to prevent it. In other words, there is an instant and constant effort to prevent the bending of the spine. That is an amazingly constant sign in all types of the disease.

Further physical signs which are helpful are the variations in the reflexes. The knee jerks may be absent; they may be much exaggerated; they may be unequal, one knee jerk being very active and another one being absent or diminished. The cutaneous reflexes are practically always undisturbed. Occasionally one finds them somewhat disturbed, either diminished or exaggerated.

So much, then, for the physical signs. Perhaps under this heading might also be grouped the marked tenderness of muscles which also

frequently occurs, and probably, in connection with the anterior flexion pain is the cause of the child's objection to being lifted, even by its mother.

Then there is another very striking characteristic which might be grouped as in the psychic realm, perhaps—the disturbance of temperament. A usually calm, phlegmatic child becomes highly irritable, objecting to everything, a peculiar, whining, resentful irritability manifesting itself. The antithesis of this, a drowsiness or a rapid change from irritability to drowsiness, may also be present, or the child, if disturbed in sleep, suddenly whips around with a snarl and a jerk of the shoulder. All of these things are difficult to describe in words, but they form a very definite clinical picture which belongs to this malady.

Now, the other group of aids in diagnosis are the clinical laboratory procedures. Examination of the blood is of some value in connection with other symptoms, but not alone. In a large number of observations it was found that leucocytosis was the rule. In previous epidemics a leucopenia had been described, but the best evidence up to date apparently shows that leucocytosis is the rule and that the polymorphonuclears are increased at the expense of the lymphocytes. This belongs to infectious diseases in general and does not help to a differential diagnosis from spinal meningitis. Of great assistance in diagnosis, however, is an examination of the spinal fluid, and here we have a real and conclusive help in the vast majority of cases; but we are finding that it must be used with certain definite regard to the stage of the disease. In the fulminating type the fluid appears as slightly hazy, and may or may not be under pressure, containing as high as 2,000 or 3,000 cells per cubic millimeter, down to as low as 10 or 15. These cells in the very earliest stage—and by that I mean within four or five hours from the onset of symptoms—are of the large endothelioid multilobed type, with a smaller number of lymphocytes. As the disease progresses, the appearance of the cells changes and the larger cells give place to the small lymphocyte type, so that we have almost 100 per cent small lymphocytes. The globulin is usually low or negative, but within the first day or two the globulin content increases rapidly, and then within 24 hours you have a fairly heavy or very heavy globulin reaction.

In our recent work we have found several interesting things in regard to the spinal fluid. The first of these is just merely a corroboration of the work done by Dr. Fraser in the Vermont epidemic. The spinal fluid in many cases at the very outset of the disease—that is, within a few hours of the first symptoms—gives no indication at all of the character of the infection. Certainly, if you make your lumbar puncture within four or five hours, the spinal fluid is likely to show nothing at all, but if you repeat the lumbar puncture within

16 or 24 hours the cell count may be very large. We have had several very extraordinary instances of the value of following the disease by repeated punctures. For instance, a case comes down in a family where there is another patient. I am describing now an instance that occurred last week. One child was down with the disease and another boy became ill. A puncture was made within two or three hours of the onset, which indicated no change in the spinal fluid. Then after 12 hours another puncture was made, and there was a marked increase of cells. In this instance there was a question whether we should use the serum of a recovered case. The cell increase was not above 100, so that it was decided to wait and puncture again. At the end of a second 12 hours another puncture was done. and the fluid was found to have returned to normal. The following day the temperature was normal and the child was up and about as usual. If those punctures had not been done the case would not have been called positive and that boy would have gone about spreading the disease. Since this instance developed we have had another case in which multiple puncture has demonstrated its value. It seems to me that State health officers can perform no more worthy function than to urge the profession at large to use lumbar puncture, particularly as it is a perfectly harmless procedure and very easily carried out. This will mean the recognition of many cases at a time when they are most dangerous to the community.

Now, I have not said anything about the paralysis, and I do not propose to do so, because I do not want to leave, any more than is avoidable, the impression in the minds of this gathering that the paralysis is important, except to the individual. As I understand it, this is a meeting to discuss means to protect the community at large, and the way to protect the community at large is to recognize the cases which are a menace. The paralyzed case automatically ceases to be a menace with the onset of paralysis. The early recognition of cases is possible, and essential; the quarantine of paralyzed cases alone is inadequate. [Applause.]

Dr. FRANTZ. May I ask the doctor how long the tenderness of the spine lasts?

Dr. DRAPER. The tenderness of the spine may last a long time. It varies greatly in different individuals. I have seen it last as long as a month; but the tenderness of the extremities is more apt to outlast the tenderness of the spine.

Dr. FRANTZ. What proportion of these cases have paralysis?

Dr. DRAPER. We are very much impressed with the large number of cases that do not have paralysis. We have surprisingly few.

Dr. EMERSON. They are uncommon.

Dr. DRAPER. In the rural districts paralysis has been surprisingly uncommon. The only case I have seen is one, I think, of syphilitic infection.

Dr. WOLFF. I should like to ask the doctor if he has made any investigation as to the change in the reaction of the spinal fluid in the progress of the disease; that is, whether the normal outline of the spinal fluid on puncture is changed during the progress of the infection.

Dr. DRAPER. We have not made any observations of that nature.

Dr: WOLFF. I have found that extremely characteristic in spinal meningitis in a large number of cases; that is, in the course of the disease the outline of the reaction of the fluid becomes more and more acid as the disease progressed toward a fatal termination, and I think it is a very important thing to-day to determine.

Dr. OPPENHEIMER. There have been a number of operations in Brooklyn and New York. What has been the position of the operated cases in connection with new cases? Has any notice been taken of that?

Dr. DRAPER. Do you mean in regard to their infectivity?

Dr. OPPENHEIMER. Yes.

Dr. DRAPER. I have no statistics on that. To answer your question directly, the virus retains its infectivity.

Dr. OPPENHEIMER. It retains its infectivity?

Dr. DRAPER. Yes. There have been cases in which the virus was active five months after the disease; and in one other case, which is not quite clear because of the fact that the individual may have had two attacks, at a period of two years following the first attack it was active.

Dr. SWARTS. Did I understand the doctor to say that the virus was noninfective after the case was cured?

Dr. OPPENHEIMER. No, sir; by no means.

Dr. DRAPER. There is only one instance which I have reported, and in that case it was not certain that the first attack had been of the same disease.

Dr. FULTON. What per cent of your cases, or those in New York, have occurred in the colored race?

Dr. DRAPER. I will have to refer that to Commissioner Emerson.

Dr. EMERSON. Up to the last three weeks there were so small a number of cases among colored people that we suspected that there was a racial insusceptibility to the disease. Since then they have been coming in so rapidly that it is apparent there is no difference in New York between the colored people and other groups.

Dr. YOUNG. I should like to ask Dr. Draper if he will tell us whether the early changes in the eye reaction are of any help in the diagnosis.

Dr. DRAPER. Do you mean the pupillary?

Dr. YOUNG. Yes; the pupillary.

Dr. DRAPER. The pupillary changes we have seen have been only in connection with other changes, and I have never observed any changes in the more usual types of disease.

Dr. COLLINS. Are you sure about the immunity offered by an attack against subsequent attacks?

Dr. DRAPER. All the evidence so far seems to point to that fact, and also the fact of the high neutralizing power of the blood serum of people who have the disease upon the virus. This has been demonstrated in a certain number of people who have had the disease, and it has also been demonstrated in a number of individuals who have not had the disease. Now, whether that neutralizing power depends upon a previous attack which has not been recognized has not been determined, there being no way of deciding, but the fact that there have been reported only two possible cases of a second attack is rather significant.

Dr. PARLETT. Has any investigation been made involving the milk supply of infected families? The reason I ask is because in isolated cases there is apparently no means of tracing their origin, and I thought perhaps an infected udder or something of the sort might be responsible.

Dr. DRAPER. There is no evidence that cattle are subject to the disease. The rôle of milk is apparently associated with the milk handlers, if milk has anything to do with it.

The CHAIRMAN. I will ask Dr. Frost to speak to us on this subject.

Dr. FROST. Dr. Draper, it seems to me, has succeeded admirably in the difficult task of giving a clear clinical picture of the disease. I think he has succeeded better in presenting a picture of nonparalytic poliomyelitis than anyone I have before heard attempt it. Wickman, in Sweden, first distinctly called attention to the concurrent occurrence of nonparalyzed with paralyzed cases, showing all grades, from slight, transient paresis down to the cases Dr. Draper has described. Physicians generally have been very reluctant to admit their existence. They are quite reluctant to admit the possibility of a diagnosis on what appears to them such slight evidence. I think there is a growing tendency to get away from that skepticism and to agree heartily with the diagnosis which was proved, even prior to the proof now furnished by lumbar puncture, which thoroughly establishes the lesion.

As to just the part that these cases play in an epidemic, and as to their proportion to the paralytic cases, I think that is very much a matter of conjecture. Speaking from such experience as I have had personally, my first impression is that the proportion of nonparalyzed cases seen in any community is dependent upon the thorough-

ness with which one studies the community. In a community where you become acquainted with all the physicians and see all the cases, making practically a house-to-house inspection, you find a relatively large proportion, often more than double the paralyzed cases. I am inclined to believe, however—and I think it will eventually be proven—that, even aside from the thoroughness of the study, there is in different epidemics a difference in the proportion of nonparalyzed cases which come up over the border line of clinical recognition. Where you have a large number of cases affecting a large proportion of the population with severe symptoms you have a relatively large proportion of light infections clinically recognizable. On the other hand, where you have a thin, scattering epidemic, as, for instance, in Cincinnati, where there were but 100 cases among 400,000 people, light infections fail of discovery.

Just one word as to what effect this should have on our consideration of the prevalence of the disease. Take the case of other people being in the same family with paralyzed cases. I have some figures from an epidemic in Iowa. If we count only the clearly paralyzed cases, 5½ per cent of children under 15 associated directly with paralyzed cases subsequently developed frank paralytic disease. If we count in the clinically recognizable nonparalyzed cases the percentage was almost doubled. If we count in also the cases regarded as suspicious but which could not be examined at the time, this would again have the effect of doubling the 11 per cent to 22 per cent, giving an apparent contagiousness on that basis approximating that of scarlet fever or diphtheria. In other words, by including all cases we have quadrupled the number infected and have brought poliomyelitis up to the appearance of a contagious rather than a rarely contagious disease.

As to the possibility of recognizing these cases by general practitioners, I think a great deal more is being done now than a few years ago, and I believe such cases will be more generally recognized in another few years. It would seem at present, viewed from a public-health standpoint, that we should not wait for final diagnosis at all, but that we should isolate all cases of illness in children simply on suspicion. If we wait for a definite diagnosis, we may have to wait several days. Lumbar puncture is not going to be practiced generally in rural communities, and the doctors must isolate on suspicion. [Applause.]

The CHAIRMAN. If there is no more discussion, we want to proceed to the subject of the prevention of the interstate spread of poliomyelitis, and I will ask Senior Surg. Charles E. Banks to address us on that aspect of the problem.

PREVENTION OF THE INTERSTATE SPREAD OF POLIOMYELITIS.

Dr. BANKS. The work which the officers of the service are doing is performed by a system of notification and inspection of the children departing from New York City. This is being accomplished by the aid of the health commissioner of New York City, who has established a system of district health offices where residents desiring to leave New York City apply for certification as to whether their premises are free from poliomyelitis. The traveler then comes to the depot or ferry, the children being then certified as apparently well. A duplicate of the card issued to the traveler is mailed immediately to the health officer of the town to which he is destined. That gives the health officer an opportunity of locating these people on their arrival and taking whatever measures he deems necessary for their isolation. We have now 36 officers stationed at the various depots and ferries in New York City, on what I might call the "two-platoon" system, working 13 hours a day. We also take care of such automobile travel as we can reach, and we can reach everything except travel going north into northern New York or into eastern Connecticut. Wherever they cross by ferry we are able to inspect them, the same as we do travelers by train or by boat.

We are also covering every boat exit from New York. While I am aware that there are many avenues of escape from Greater New York, yet I think we get a very large proportion of travelers through the aid of the railroads, which have issued definite instructions under the existing quarantine regulations to allow no one to board a train or a boat without our certificate. That our system is sufficiently close we have ample evidence, because of the complaints of travelers who are unable to get through without our certificate—passengers who come very late at night or early in the morning. In fact, one of the great values of our work is through the cooperation of the railroads, and I wish to express my appreciation of their conformity to the requirements. I do not know that there is anything further that I can say, but I shall be very glad to answer any questions as to our methods. I see you have said here all travelers under 16. We have certified so far about 30,000 children and about 17,000 adults. In explaining this fact, I would say that these adults request this certificate from us for the purpose of enabling them to travel. We do not require it, but many adults insist on taking it, so that they will not be held up at towns or cities where a very close quarantine is established.

This plan has been in operation since July 18, and we are certifying about 1,500 children a day. They are examined by our officers, and quite a number of cases have been turned back on account of

apparent illness. A health officer getting a notification from us can be assured that the premises occupied by the traveler are free from poliomyelitis, and that in entraining or embarking on a boat the child is apparently well. Beyond that we can not go, because undoubtedly many cases will get by us in the incubative stage, and the best we have been able to do is to give the health officer an opportunity to locate the travelers from New York City.

Dr. FRANTZ. I understand you are from New York?

Dr. BANKS. Yes.

Dr. FRANTZ. You send the notice to the health officer of the district to which the party is going?

Dr. BANKS. Yes.

Dr. FRANTZ. I would like to increase your labor 50 or 100 per cent by having you send your notices to the State boards of health of the respective States, unless they go to cities which are large cities, over 10,000 or 20,000 population. There are many small districts where there are no health officers and no local boards of health, and persons who go there escape entirely the observation of any State health official.

Dr. BRACKEN. I would like to reduce the work of your board about 90 per cent by asking you to make all of your reports to the State health officials and not to the local health officials. We know our local health officials, and we know whether they are efficient or not, and if all those reports came to us it would be for us to see that they should go to the different points in the State. I know that notifications have come into my State, but I have no information concerning them. Now, I am the man who ought to know. I ought to be in position to give the information to other sections of the State, and I make the request that all of these notifications go to the State health officer, and that he be left to distribute them to the local health officers.

Dr. TUTTLE. I would like to duplicate the request of Dr. Bracken. I would say that I do not know that a card has come into the State of Washington, yet we collect 25 to 35 passengers there every day, children and adults combined. We require a report on all. Yet I have never heard of a card coming. If they were sent to me I could have my officer do as I tell him, as we have telegraph and telephone facilities in Washington.

Dr. BURKART. I want to indorse what Dr. Bracken says. Officially we are not cognizant of any person in Michigan who came from New York. By accident, yesterday I saw one of your cards. It came to the health officer of the city of Lansing. It was the first intimation I had that you were adopting that method.

Dr. DRAKE. Mr. Chairman, I wish also to indorse what Dr. Bracken and the other gentlemen have said. We are advised occa-

sionally of persons coming into Illinois from New York. We have no official notification of it, however, and only recently I took occasion to issue an additional order that all persons arriving in the State of Illinois with children under 16 years of age shall make their presence known to the local health officer within six hours after arrival, the local health officer being obliged to notify the State board of health. I think that we could get down to this a great deal better and a great deal more efficiently if the notification were sent not only to the local health officer, but if a carbon copy of it could be sent to the State board of health. If a carbon copy is sent to the State board of health we will have it as a record. There will be some saving of time if it also goes to the local health officer, of course. In many of our communities in Illinois we have not an efficient health organization. We have the butcher, the baker, and the candlestick maker constituting a board of health. They know nothing about the handling of these cases, really, after they do get a notification, and I believe that the service can be made very much more efficient if we can get a notification to the State health officer as well.

Dr. CARR. Mr. Chairman, it seems unanimous, and Nebraska wants to second the motion of Dr. Bracken that this be done hereafter.

SEVERAL MEMBERS. Second the motion.

Dr. BRACKEN. Mr. Chairman, I do not want to concede the amendment suggested by Dr. Drake, that a carbon copy should be sent to the State board of health. I want the original sent there.

Dr. DRAKE. If the carbon copy goes to the local health officer, you will get the original. Either way.

Dr. ROBERG. We have, with British Columbia, thrashed this whole thing out. We agreed on the regulation, and we put the proposition up to the railroad people, and they willingly indorsed it and put it through. If I am not out of order, I would move to refer this question to a committee, so that this whole matter may be thrashed out and presented in good form.

The CHAIRMAN. The Chair thinks that is a good suggestion. I will ask Dr. John S. Fulton, of Maryland, to discuss this matter.

Dr. FULTON. Mr. Chairman, I did not rise for the purpose of opening the discussion at all, but I am exceedingly interested in it, because it strikes me we have gotten very close to the kernel of our difficulties. I wish to call your attention to the state of confusion in which we all are at this time. We are all setting afloat throughout the United States, more or less, in the hands of passengers on railroad trains, a number of certificates of all kinds, and permits are being issued with apparently no official designation. Such, indeed, is the case of a very large proportion of them. I understand that those

issued by the Public Health Service have official designation in the State to which the traffic is going, but in general they are a very small part of the certificates and permits afloat, which are sometimes of questionable authority and often of no authority whatever. There is a situation of the greatest confusion.

We have discussed this matter in Maryland very carefully and with some solicitude, since Maryland, Delaware, and West Virginia are now in a sense the barrier States, and the question has been put up to us, What shall we do? In Maryland, I think we are very clearly of the opinion that the prevention of the interstate spread of the disease is the function of the Federal Government, and that we ought all to be relieved of State duty in the matter of interstate communication. That is our opinion in Maryland. At all events, it is a situation out of which order must be evolved.

If I have your permission I should like to make a motion that a committee on the prevention of the interstate spread of poliomyelitis be formed by this conference at as early an hour as is practicable.

Dr. COLLINS. I second the motion.

The CHAIRMAN. Is that acceptable to you, Dr. Bracken?

Dr. BRACKEN. That does not apply to my motion.

Dr. FULTON. I did not understand that there was a prior motion. I did not understand that Dr. Bracken made a motion.

The SECRETARY. The motion of Dr. Fulton is that a committee be appointed on the prevention of the interstate spread of poliomyelitis.

Dr. FULTON. Of five or three, I should say.

The CHAIRMAN. Is there a second to that motion?

SEVERAL MEMBERS. Second the motion.

Dr. DRAKE. Before you put that motion let me ask this question. Does this apply only to health certificates originating from travelers from New York?

The CHAIRMAN. It applies to every State.

The SECRETARY. As I understand the motion made by Dr. Fulton, he wishes a committee appointed to which shall be referred all matters relative to the prevention of the interstate spread of poliomyelitis, either from New York or from any other place in the country.

Dr. FULTON. Yes; that is right.

Dr. EMERSON. I submit we shall be leading ourselves into a sanitary inconsistency if we discuss this from the point of view of children under 16. Although Dr. Draper did not refer to it, and it has not been spoken of yet particularly here, it is quite obvious that there are adult carriers. It is perfectly certain that there are people who have been in constant personal contact with active cases of the disease who are due for an undetermined period to carry and spread the infection. There have been a sufficient number of cases within the

city of New York to make it quite apparent that the only obvious means of communication of infection to new foci has been through adults who have come from immediate, persistent personal contact with cases of the disease.

That is the condition we have found within the city; and yet I quite agree with Dr. Banks when he said he felt that their activity should be limited, at least in the beginning of this system, to certification of children under 16. If you do not limit yourself to that, you will find yourself facing the immobilization of your adult population. There are 500,000 people in New York City who travel from New York to other States once every 24 hours. The suburban traffic of New York would then be subject to the limitation of certificates every time such persons went from the Borough of Manhattan to their homes in Connecticut or in New Jersey. I do not want to predict or foreshadow the conclusions of the interstate committee, which will doubtless be conservative and consistent, but it is obvious that we are going to leave many holes in our armor of protection if we do not include adult carriers. Whether or not those adult carriers have suffered from the disease themselves, it is perfectly apparent that adults who have been in contact with cases may spread and have spread the disease during the present epidemic. We have not felt, however, that we had any right to put our finger on a healthy adult, and say, "You must be limited in your movements." Until we have tested their capacity for carrying the disease I do not believe we shall be able to establish consistent sanitary regulations.

Dr. COLLINS. I should like to suggest, in order to avoid all error, that Dr. Emerson be made a member of that committee.

The CHAIRMAN. Dr. Emerson is not an official member of this conference.

Dr. COLLINS. Let us make him so, ex officio.

Dr. EMERSON. Other members of that committee have all the information that I have, and it would be most improper, it seems to me, for a city official to be put in that position. They have all the information in their hands, and I should beg to be excused from that; not that I am not willing to work, but I do not think that this is either necessary or proper.

Dr. BRACKEN. Just a moment, on the motion. I want to favor this motion of Dr. Fulton's, and probably my remarks are not necessary here; but it is possible that in putting this motion it will not be necessary for me to put another, so I will let the thing go as a motion now and then make my motion later if I want to.

The CHAIRMAN. The motion is that a committee be appointed on means to be taken to prevent the interstate spread of poliomyelitis. That is your motion, I believe?

Dr. FULTON. Yes.

(The question was taken, and the motion was unanimously agreed to.)

Dr. BRACKEN. Now, Mr. Chairman, I want to call the attention of this conference to the fact that about 1910, I think, there was an arrangement by which reports were to be made from State to State of cases. Those reports have been made by some States, and have always been forwarded to the State health officials. Therefore I move you, as bearing on this one point, that from this time on all reports bearing on this subject be forwarded directly to the executive officer of the State board of health. This has nothing to do with the situation on the Pacific coast, but it has simply to do with those reports which are coming in to the States—that they should in every instance go to the State health officer.

(The motion was seconded.)

Dr. BANKS. I think there will be no question about this. We can as easily mail these notices to the State officers as to the local health officers. We have been mailing them to the local destinations of the travelers, and we can as easily arrange to send them to the State health officers, so that it is not an addition to my work but a lessening of it.

Dr. TUTTLE. Would it add materially to your work if you turned those notices over to the telegraph company and asked them to wire them at our expense?

Dr. BANKS. Where are you located?

Dr. TUTTLE. In Washington. We are willing to pay for the telegraphing.

Dr. BANKS. I presume the telegraph office would take those dispatches.

Dr. TUTTLE. I have a frank from the telegraph company authorizing me to send any telegram direct to my office.

Dr. WOODWARD. I move that the question on the motion in reference to prevention of interstate communication be referred to the committee on interstate measures. We have a long and busy program, and that is a matter that must be considered at length.

The CHAIRMAN. Without objection, it will be referred to the committee on interstate measures. Next on the program is "The research problems in poliomyelitis." I should like to call on Dr. Lavinder to speak on that subject. Before Dr. Lavinder begins I should like to say that there are a number of railroad men here who would like to consult with the members of the committee on interstate features when they are ready to talk with them. I suppose that committee will be appointed a little later.

RESEARCH PROBLEMS IN POLIOMYELITIS.

Dr. LAVINDER. Gentlemen, I have very little to say. Such work as we have done is by no means in such condition that we are ready to present results. I think it should be made clear to this meeting, however, the exact position the Public Health Service is occupying in this epidemic in New York City, since I do not think it is generally understood. There are two groups of officers of the Public Health Service at work in New York City. One small group, of whom I happen to be the senior, is associated with me, and is entirely engaged in scientific work. The other group, under Dr. Banks, is entirely engaged in interstate notification measures.

The group of officers with which I have been associated have changed their plans somewhat—they have been forced to—several times. There are, of course, two sides to any scientific investigation. One is the laboratory side and the other is the epidemiologic side. Originally, I do not think we all realized what an immense epidemic of poliomyelitis we had to contend with, and we had planned to do certain laboratory work in New York; but when we realized what we were dealing with this laboratory work was very largely shifted to the Hygienic Laboratory here in Washington, under Dr. McCoy, and since that time we have done very little laboratory work other than to cooperate with Dr. McCoy in securing certain material for his use.

We have also taken some interest in two other matters through the cooperation of Dr. Emerson and his department and working with him. We have been doing a small amount of entomological investigation. Dr. Emerson has one or two entomologists in his department and we have one, and these gentlemen have recently begun some surveys, practically nothing more.

In addition to that we have also taken into consideration sick and paralyzed domestic animals, and have made investigations into that subject, and with Dr. McCoy will continue them.

The biggest part of our work has been epidemiologic in character, and through the kindness of the commissioner, Dr. Emerson, whom I wish to thank, for he has been most courteous, we have been able to go into the city department of health's office and obtain all of their data. At present we have men in Dr. Emerson's office who are collecting the data he secures, and we are trying to tabulate and make use of that data in a study of the New York City situation. In addition we have taken the whole of Staten Island, and are engaged in an intensive epidemiologic study in that section. We selected that borough because it presented many features of interest and was favorable from an administrative standpoint, it being manifestly impossible for us to do this work in such congested districts as parts of Brooklyn and Manhattan.

Then, finally, we have broadened our work, and through cooperation with certain State health officers surrounding New York City, in Connecticut, Rhode Island, and Massachusetts, we are getting reports of all their cases, and have detailed officers in two or three of these States to make intensive studies of certain selected cases or selected sites. When we get all of this data together and correlated, as it can be, with other observations as to poliomyelitis in the United States, we will have an immense amount of material, and we believe such observations may show something well worth while.

In connection with our outside studies I think it is a matter of some importance that I should say to the State health officers that in doing their work I think some effort ought to be made toward uniformity of statistics collected. If some arrangement of that kind could be made it would be of great advantage. For example, when you are collecting statistics with regard to age incidence, if every State could agree to certain years, instead of one State taking the years from 3 to 5 and another from 1 to 5, the statistics would be of far more value. Statistics when gathered in that way are not comparable.

In the States in which we are working we are trying to get such data compiled so that we may have figures which can be compared. I have with me three or four blank forms which will show you just what we are using, both in our case cards and the epidemiologic studies. This blue card is the one used by Dr. Emerson in his department, and this white card is the one on which we are obtaining our data from his cards; in addition we have two case cards for much more extensive work, one of which was adopted by a conference of this kind in 1911, and the other has been modified somewhat and is more extensive in certain particulars. This one is being used in the work in New York now.

The CHAIRMAN. I will ask Dr. G. W. McCoy, of the Public Health Service, to open the discussion. Dr. McCoy is director of the Hygienic Laboratory of the Public Health Service.

Dr. MCCOY. Our laboratory work is being carried on in a general way in accordance with a plan outlined at a conference which was held in New York, at Dr. Emerson's invitation, on August 3 and 4.

It was agreed that the important things to do were to determine the relation of paralytic diseases of animals to poliomyelitis, to determine the susceptibility of laboratory animals and domestic animals, to endeavor to cultivate the organism, and, if possible, to devise some better method for detecting the presence of virus than the one we have now, namely, the inoculation of monkeys. Insect transmission experiments are also contemplated.

Our own work is just starting, and there is nothing to say about it at present.

The SECRETARY. Mr. Chairman, it seems to me that the conference should take advantage of the suggestion that was made by Dr. Lavinder—that is, in regard to a uniform method of collecting statistics concerning poliomyelitis—and I will therefore move that the Chair appoint a committee of five to make a report to the conference on uniform methods of collecting statistics regarding poliomyelitis.

Dr. RANKIN. Mr. Chairman, I will ask Dr. Rucker if he could not enlarge his motion to include the submission by the committee of standard epidemiological forms for obtaining these facts?

The CHAIRMAN. That is what I understood the motion to be.

The SECRETARY. Yes.

Dr. CARR. I second the motion of Dr. Rucker.

Dr. WOLFF. Why not let this apply to all these matters?

The SECRETARY. I am afraid that would be too broad.

The CHAIRMAN. It has been moved and seconded that a committee of five be appointed on uniform methods of collecting statistics regarding poliomyelitis.

(The motion was seconded, and there were cries of "Question." The question was thereupon taken, and the motion was agreed to.)

Dr. BRACKEN. Mr. Chairman, I make the following motion: Moved, that a committee of three be appointed on measures to be taken to prevent the spread of poliomyelitis in the respective States. That would be intrastate. It may be the same committee; it is immaterial to me. These committees ought to be appointed right away, and ought to have some sort of report for us very soon.

The CHAIRMAN. It is moved and seconded that a committee be appointed on measures to prevent the intrastate spread of poliomyelitis.

Dr. BRACKEN. That this be referred to a committee to take up both interstate and intrastate matters:

The CHAIRMAN. If there is no objection, that will be done.

Dr. DRAKE. If it is not amiss at this time, I should like to offer a suggestion that Dr. Rucker be a member of the committee on interstate forms. I offer that suggestion because I know that Dr. Rucker will be of great help and value to that committee.

The CHAIRMAN. I think Dr. Emerson would like to say something about this.

Dr. EMERSON. I must apologize for getting on my feet again, but there are certain research studies under way which I think you might be interested in, because others might succeed where we have failed.

Because of the discussion in regard to milk, and owing to the fact that the New York City milk supply is entirely pasteurized, it seemed to us worth while to take one borough and study every case in that borough as if it were a case of typhoid fever, to determine if there is any conceivable and detectable connection between persons on the milk farms up State from which the supply is obtained

and the presence of cases of the disease in the city. That study is being made in the Borough of The Bronx, and will supplement the studies of the Public Health Service officers in the same borough. We can ascertain from our records the source of the milk for the past month and we can locate the milk that was delivered to any particular case. This is an attempt to put an end to all doubt as to the possibility of this source of infection.

Then, through the Rockefeller Foundation fund, a study has been made as to the effect of secondary contact in the epidemiology of the disease. Dr. Doty, with the assistance of 25 or 30 nurses, five doctors, and the necessary office force of clerks, has been following the cases as they are reported each day, and up to the present time they have brought in a tentative report showing that in 30 per cent of the cases they find an obvious previous contact with an active case. Whether or not this figure will be maintained, we are not sure. These investigators go to the house and ascertain all of the people the patient has been in contact with for some days previous, and just where the child has been; in this way they also dig up a few previously undetected cases.

Then there are clinical studies conducted in the hospitals to see if we can get any light at all upon the type of children who are susceptible to this disease. As you have heard, the incidence of secondary cases is about the same as the incidence in scarlet fever. We have worked that out ourselves. For the first 2,000 cases in Brooklyn the incidence of secondary cases in the main is almost identical with the incidence in scarlet fever in the same borough among the same type of people. So that we must consider how far we may possibly detect clinically the susceptible types of children. Anybody who goes through a hospital such as Willard Parker Hospital, with 900 children, will get an impression that these children are different physically from other children. That study is being made for the purpose of helping the clinical work.

There is only one other study that is going on, and that is an investigation of the results of different therapeutic procedures. Publicity has aided us in getting a very large amount of blood from recovered cases, both those recently recovered and those where the recovery dates back 30 or 40 years, and the serum from such cases is being used in the spinal canal, after withdrawing the spinal fluid. The results will take months to work out. Let me warn you that there are no reliable conclusions at the present time. We have many patients apparently severely ill who clear up almost miraculously by being allowed to stay in bed 24 hours. On the other hand, cases of bulbar involvement have recovered after the use of the immune serum, whereas we expect to see those go on to complete respiratory

paralysis. We are doing our best to use the clinical material as it comes in for controlled clinical observations of these cases.

I can not sit down, Mr. Chairman, without expressing my thanks personally for the very great courtesy and discretion shown by Public Health Service officers. If any health officer wonders whether he is going to be accused of crying for help if he calls upon the Public Health Service, my experience is that if there is one thing that will add to the confidence of the community in the work being done it is the character of work and the character of personal relations of the Public Health Service officers. What the Public Health Service has done in its work for us has been splendid. [Applause.]

The CHAIRMAN. Thank you, Dr. Emerson; to have been of service is most gratifying.

COMMITTEE APPOINTMENTS.

The committee on uniform methods of collecting statistics regarding the spread of poliomyelitis will consist of Dr. Lavinder, Dr. Woodward, Dr. Drake, Dr. Young, and Dr. Frost.

The committee on measures to be taken to prevent the interstate spread of poliomyelitis will consist of Dr. Fulton, Dr. Tuttle, Dr. Williams, Dr. Bracken, and Dr. Banks.

Gentlemen, the next subject will be the epidemiology of poliomyelitis, and I will ask Dr. Frost to let us hear from him.

EPIDEMIOLOGY OF POLIOMYELITIS.

Dr. FROST. Mr. Chairman and gentlemen, I hardly know how to start a discussion of such a broad subject as the epidemiology of a disease so peculiar and complicated as poliomyelitis. Any broad statement must be subject to exceptions, and in any event we arrive at broad generalizations through the summation of our individual experiences. I am afraid that this broad generalization will not give us the picture one gets from the consideration of isolated facts and proved instances, but I will try to run over as rapidly as I can what seem to be the general, outstanding facts in the epidemiology of this puzzling disease. While it is not part of the epidemiology, I do not think we can sensibly discuss the epidemiologic data without at least taking cognizance of what we know experimentally. I shall not go into that in detail, but would like to summarize what we have learned from experiment.

Beginning in 1909 we found that poliomyelitis is transmissible to various kinds of monkeys, and occasionally to rabbits. So far it has not been shown that other animals are susceptible. The only way we have of demonstrating the virus of poliomyelitis is by inoculating monkeys and producing the characteristic effects. Without

going into details the following facts are outstanding. The virus has already been demonstrated as present in the nasal and intestinal secretions of people with poliomyelitis, and in comparatively few examinations of recovered cases some weeks or some months after the disappearance of acute symptoms, we have still found the virus present. Those cases are not numerous, and it leads us to the question of automatic carriers. It has been demonstrated that in some instances the virus is present in the nasal discharges, and with somewhat less certainty, in the intestinal secretions, of persons entirely well, who have been in contact with acute cases. Most of the carriers we have experimentally shown have not been children, but adults.

The other experimental fact of the greatest importance is probably the avenue through which we can infect animals. We can infect monkeys by injecting a portion of the spinal cord into almost any part of the body; most promptly by injecting it into the brain or into a nerve sheath, and not infrequently by introducing it directly into the nasal mucous membrane. Taking the experimental data alone, the introduction through a mucous membrane gives us a definite picture of a contagious disease.

A few instances have been reported of experimental infection of monkeys apparently caused by biting insects, but they have not been thoroughly confirmed. To consider what we actually see in the occurrence of the disease might lead us very readily to a different conclusion as to its contagiousness. We have had several eras, we might say, in our experience with poliomyelitis.

Recognized since about 1840, the disease had occurred since then up to the middle eighties only sporadically, with occasionally some 8 or 10 cases in a small village. Then in the middle eighties, principally in Sweden, we began to notice larger groups of cases, and then we got the clinical picture we now have and a conception of the more severe constitutional symptoms. From that time on to 1905 we had increasingly larger epidemics. The year 1905 marked a new era in the epidemiology of the disease. We then had an epidemic spreading over Sweden, with a total of about a thousand cases. From that time to the present marks another era of practically pandemic prevalence. In 1907 we had an epidemic in New York City, not reported because the disease was not at that time reportable. Following that we had epidemics in 1908 in Massachusetts, in 1909 in Nebraska, and, I believe, in Minnesota and Massachusetts, and in 1910 a widespread prevalence of the infection. Since then we have had numerous cases every year.

Our statistics of the endemic prevalence date back to 1910, but since then we can say that the disease has occurred in every State of the United States, and in every month of the year. This year, I believe, is going to mark another era, because we are now having an epidemic

which, in comparison to what we have previously had, bears about the same relation as the epidemic of 1907 or 1910 to former epidemics.

To repeat briefly what seem to be the salient features: We have the picture of widespread infection, widely scattered, occurring now and then in epidemics of small size, which characteristically are scattered and irregular. For instance, in 1907 there was an epidemic in New York and we did not have an epidemic in Philadelphia. We have at various times had epidemics in New York and Philadelphia, and we have had them in New York and Washington and not in other cities. Characteristically then we have an irregular spread. I think the same thing is shown this year in the reports we have received from various States. We have a characteristic seasonal prevalence, usually in the spring and running into the late summer and fall, about the season when infantile diarrheas are prevalent, and not in the season of ordinary respiratory diseases. I must say, however, that the disease must be largely independent of climatic and seasonal differences. We have records of epidemics beginning in the spring and stopping in the fall and of others beginning late in the summer and running into the winter. We have no such relation with the seasons as we have in yellow fever, which always stops when it becomes too cold for mosquitoes.

Another fact which seems to be uniform is that we have our greatest incidence in proportion to the population in small villages and rural communities. That, I believe, is a universally accepted fact. Take 100,000 people in rural districts or a few small villages, and they are likely to have more intense epidemics than an equal number of people collected together in a large city. Still more striking perhaps is that the total incidence of cases is always exceedingly small in any large group of population compared to the epidemics of our more common infectious diseases. An incidence of 1 case in 1,000 of population or 1 in 2,000 gives us an epidemic of poliomyelitis. This would be only a small endemic incidence for any other disease. In New York we are now getting a much higher incidence, which is a new experience; but even there we are getting only 1 in 750, while in Richmond, which has 100,000 people, we are getting 1 in 450. Now, characteristically, after reaching that small incidence the epidemic has passed out of that area. Already we are noticing that in the groups of 100,000 the epidemic has reached its highest point and is declining. We can not account for that on the ground of any climatic change, because in adjacent territory it is still on the increase, under the same general meteorological conditions. We can hardly account for it on the ground of the removal of the sources of infection, because we have in the territory a large number of cases that must be infectious. It is very difficult to explain it except on the ground of the thinning out of the susceptible population. The con-

clusion is that the disease goes through a population and passes on after having reached only a small incidence.

The next most striking fact is its limitation of age. I think this is of the utmost importance. Characteristically, we have vastly more cases in children than adults. That does not strike us as remarkable at first, but on further thought it is very remarkable. Here we have a disease which spreads all through a city like New York, or even a smaller city, and just picks out the children under 5 or 10—90 per cent of all cases will be in those age groups—and which skips all the intervening older people. With regard to the age distribution it is, I believe, a significant observation that in our large cities generally epidemics have been confined more exclusively to certain age groups than has been the case in rural epidemics. For example, we have had quite a large proportion of adults attacked in epidemics in Minnesota. In all our epidemics in large cities the disease has been confined much more sharply to the age group under 5. In many cities the entire population above 24 years of age, over 50 per cent, remains entirely immune and is not touched by any visible sign of infection, although necessarily they are intimately associated with the others.

I believe we probably have as careful and as accurate intensive studies of poliomyelitis as of any other common disease except typhoid fever. Although these intensive studies have shown considerable individual differences, we can arrive at certain conclusions. Taking up first this, What evidence do we find of contagion? In certain small intense epidemics in small communities we have found just the picture we would expect to find of a highly contagious disease. We find the spreading from case to case, and all the appearance of a contagion. But we consider those as exceptions rather than the rule. Generally speaking, it is true that from 75 to 90 per cent of the cases on the most careful and searching investigation can not be traced to any previous association with the infection, either direct or specifically indirect.

Add those cases in which there has been known specific direct contact with a previous paralyzed or contagious child and those in which there has been indirect contact with a contagious person, and pile on those in which we can not exclude contact, and it will give us about 20 per cent of all cases. The rest of them we can pretty definitely say have not been in contact with any previously recognized case, and usually not with any probable case of poliomyelitis. Considering the children in families affected, we have certain data on the incidence of infection among them. Taking into consideration only paralyzed cases, if we made that our criterion for clinical diagnosis, the statistics in Iowa show that 5½ per cent of children associated with known cases of poliomyelitis in the same

family subsequently developed a frank paralysis. The same statistics in Buffalo show that six-tenths of 1 per cent of the children exposed subsequently developed the disease. If we include in the Iowa statistics the cases of abortive attacks of the disease, as I said before, it doubles the percentage and makes it 11 per cent. If we now include those in whom poliomyelitis was suspected, the percentage is again doubled, making it 22 per cent. Those are high percentages. Ordinarily we get, as a rule, an exceedingly small incidence among those known to be exposed. I think this leads us to the certain, definite conclusion that if the disease is contagious at all a large proportion of the persons who become exposed to it must of necessity, for some reason or other, be immune, or at least resistant to the clinical effects of the infection. If we conceive of poliomyelitis as a direct-contact disease, we have to assume the immunity of a large proportion of the population. I believe we can not get away from this. If it is a purely human contagious disease, it must be spread very largely from sources other than any recognizable clinically sick person, because, looking at it from every angle, we can exclude contact in a large percentage of cases. We find numerous cases occurring on farms 10 or 12 miles from a village, where the child attacked has not been off the farm for a considerable time. The only way it could get the disease at all would be from some adult who had not been himself in known contact with the disease but had simply been in a town or city where the infection existed. That is a remarkable conception, but poliomyelitis is a remarkable disease. If the contagion is confined to human beings, and a large number of persons are immune, it must be spread largely by carriers who presumably are adults.

We have in this disease a seasonal prevalence which is entirely the reverse of that of most respiratory tract infections and is more like that of a digestive tract infection.

I do not think we have excluded the possibility that the infection may be carried from person to person by insects, but I think the more general principle of a spread by carriers would seem to hold.

There is another possibility, purely hypothetical, and that is that poliomyelitis may be a disease of the lower animals, spread from them to man, either directly through contact, through secretions, or by insects. It hardly seems possible that we should reasonably suspect any lower animals except dogs and cats, which move over wide areas. The rapid dissemination within a few weeks from such a focus as we have in New York to the several States is rather hard to hitch up primarily with the spread by insects. If they are responsible, we would not expect the disease to spread so fast. Its rapid dissemination is apparently accounted for only by the rapid travel of

human beings. Also, thus far we have been absolutely unable to prove that domestic animals are even suceptible to the infection.

If poliomyelitis is a disease of animals, it must be largely a nonparalytic disease, because for many years epidemics have been absolutely and entirely without evidence of paralyzed animals; so that this connection with animals is at present hypothetical. Probably we must say frankly that we do not know how the disease is transmitted, but that the evidence points to the human being as the sole agent and to contact with nonparalyzed cases and carriers as the most important source of infection.

Dr. DIXON. Some of the French experiments show that there may be some connection with the spread of the disease by rats and mice.

Dr. FROST. Quite serious study has been given to rats and mice. It hardly seems to fit in with the epidemiology of the disease.

Dr. DIXON. No; but I wondered whether you had made any study of it.

Dr. FROST. No, sir.

Dr. DIXON. The French say that they have, and they have found some connection.

Dr. FROST. I was under the impression that they said that they had not.

Dr. DIXON. That was the last information I had. We are just trying that out.

Dr. WOODWARD. I should like to ask Dr. Frost a question concerning the epidemiology as to animals in the animal house connected with a laboratory. It seems that, if this disease is as rapidly spread as it is alleged by some, an inoculated monkey in an animal house, which had developed the disease, ought to be a source of acute danger to other monkeys, and also to the attendants. The results, of course, will show with respect to the other monkeys, because they are demonstrated later, some of them at least, to be nonimmune. They are used for experimental purposes. I would like to know whether there are any definite and specific precautions taken in the ordinary animal house to prevent the spread of the disease by natural processes from the infected monkey to noninfected monkeys and from the monkey to the rabbit, which also seems to be a possible reservoir of the disease, or to the attendants, and whether there is any evidence of the carriage by the attendants to their families of the contagion to other persons? Do they become carriers?

Dr. FROST. No, sir; there is no evidence of spread in this manner, and monkeys have been associated by scores with infected animals without taking the disease. Of course, in all laboratories where there appears to be danger of persons carrying the infection to their homes, rabbits and guinea pigs have been isolated. In one or two

instances guinea pigs isolated with monkeys have developed suspicious paralysis that was not definitely ascertained to be poliomyelitis.

Dr. STILES. Mr. Chairman, without having seen an active case of poliomyelitis, I am, of course, an expert on the subject. I should like to throw out a thought for consideration. It does not seem to have been touched upon as yet. Have we not in poliomyelitis a disease which is in the making? There are certain strong arguments in favor of this view. Have we possibly in poliomyelitis a disease which is due to some bacterial or other parasite of an insect which is absolutely nonpathogenic for that insect, but which when transmitted to the human being becomes pathogenic? We have cases of this kind. There are some among us who believe rather strongly that there are parasites of insects which are absolutely or relatively nonpathogenic to the insect, but which may be transmitted to man under certain conditions and become pathogenic. For instance, malaria, in all probability, is an acquired disease in man. The biology of the parasite seems to indicate rather strongly that the malaria organism was originally of the coccidial group and nonpathogenic to insects, and that upon being transmitted to man it became pathogenic.

Kala-azar is another disease of the same general category, a disease due to protozoan parasite that is apparently nonpathogenic to insects. Transmitted to man, it changes its habits and becomes a pathogenic parasite.

Everybody is guessing at the present time, and I thought possibly I might be entitled to a guess. I simply throw this out as a suggestion which has not been made by anyone else thus far, and which may possibly give a new lead in the line of thought.

Dr. WOLFF. The real object for which I contend this conference was called is to ascertain, if possible, whether the gentlemen who have made intimate studies of poliomyelitis have determined what the stage of incubation of the disease is. That becomes an extremely practical point for the health boards who manage the disease, because it determines just how far you should extend your quarantine or how far you should extend the separation of those who have been exposed to or in contact with the disease. For example, as a point in this regard, in the city of Hartford, Conn., on July 10, a case was reported which died on the 13th day of the month, and on July 21 a second case occurred in this family. Now, this second case had had no contact with any other case except this particular one that had died 10 days before, which rather gives the stage of incubation in that case as about 11 days.

On August 4 a person who had been playing with this second case and had had no contact with any other case of poliomyelitis

was attacked and on August 12 two cases, one of which was fatal, occurred in a house right next door; this gives us an incubation stage, also, of about eight days. From these three cases 78 other cases can be traced, and the average period of incubation was between 8 and 11 days.

My object in speaking of this is to open that part of the epidemiological discussion which would be of eminent service to health officers.

The CHAIRMAN. Does any gentleman desire to make further remarks on this subject?

Dr. TUTTLE. I forgot to make a motion, or rather a request, that the remarks of Dr. Draper and of Dr. Frost on symptomatology and epidemiology be published as soon as possible in pamphlet form and furnished to the various State health officers, in order that they may be of service to physicians. Last year the Public Health Service published a little pamphlet on the diagnosis of spotted fever, and I have had many calls for that pamphlet. This year Dr. Lloyd gave us a small pamphlet on the diagnosis of smallpox. I know that the health officials of Washington will thank you as I thank Dr. Frost and Dr. Draper for what they have given us. I hope we may have reprints made at an early date.

The CHAIRMAN. We will be very glad to bear that in mind. Is there anything further?

Dr. J. P. LEAKE. There is a point that might not be within the knowledge of all, and that is the extreme variability of the incubation period. We know only very little as to the definiteness of the beginning of incubation. In many cases there is, of course, experimental evidence, and in animals the disease is almost akin to rabies in the great variability of the incubation period. We have, in two cases reported in California last year, as long as 52 and 56 days, respectively.

The CHAIRMAN. Gentlemen, this question is open for free discussion.

Dr. PORTER. Mr. Chairman, the State and municipal health officers of this country are intimately connected with the public, and the public will want to know what this conference has concluded and what it has decided upon regarding this disease. It seems to me that it is important that some brief, yet concise statement, should be made, so that it can be given to the public. Therefore I make a motion that the chair appoint a committee consisting of these gentlemen who have given us such interesting epidemiological talks on this subject, to put in a concise and brief statement what is known at present as to the cause of this disease, its mode of spread, and the general symptomatology.

Dr. CARR. I second the motion.

The SECRETARY. I will say for the benefit of the conference that, while I do not oppose this motion at all, the service has already gotten out certain publications on this subject. One is the recent bulletin of Dr. Frost on poliomyelitis, what is known of its methods and modes of transmission. Another is a little story that was written in what we call a health news, which has been distributed very widely over this country. It seems to me it just might be possible that there is no need of duplicating what has already been done; but at any rate, those things would form a basis of the committee's work.

Dr. PORTER. My idea, Mr. Chairman, was that this committee should not only consider all the publications of the Public Health Service, which has done such excellent work, but also should have the advantage of the experience of members of the conference in civilian life who have had peculiar advantages in this respect in the recent epidemic in New York City.

Dr. FRANTZ. The first thing I shall be asked by two or three or four or half a dozen railroad, steamboat, and trolley men, when I reach home, will be, "What have you done at Washington?" They will be the first people who will ask me. Why? Because they are financially interested. Our transportation companies are losing money every day. If we are committing a wrong in quarantining, and requiring more than is necessary, we should change our requirements. But be that as it may, we will have to go home with some report as to what we should do with our railway and steamboat traffic, etc., and whether we will make any change in the rules and regulations which we have already established. Now, if we can secure some report of that character I think it will be better than any scientific document, because we can not take that home. The railway men here are waiting for something more positive in that line.

Dr. COLLINS. I agree with Dr. Porter, of Florida, and I consider that a brief, concise statement as to what we have done here on this occasion will be a relief to the people in our State. The railroad companies are constantly appealing to me, and it is a practical proposition. As to the scientific side of it, I believe from what I have heard here that we are still in doubt, and that we do not know just where we stand. However, we can agree, and we ought to agree, so as to be able to go home and deal with our utility organizations, railways, steamboats, and trolley lines. I am replying to inquiries all of the time. I have friends in New York, and they want to know whether they can come home or not, and all that sort of thing. I want a statement such as the doctor suggested, drawn by a committee appointed by the conference and adopted or rejected as we may see fit. As Dr. Frantz says, he has got to answer to his people, and I know I have to mine; a report written, and adopted by this

conference, which can be placed before the great masses of the people with whom we have to deal, is what we should have, and I feel like insisting on the doctor's motion.

Dr. SWARTS. This statement will rest very materially on the reports of the various committees.

Dr. COLLINS. I think this committee ought to report along with the committees which have been appointed. If I understand the proposition, they are really inseparable, and a broad document consisting of the three reports might be the very thing we desire. I think we ought to have something to carry home to our people. I believe a correlation of the three reports would be very appropriate.

Dr. OPPENHEIMER. I think the consensus of opinion seems to be that an indiscriminate quarantine will not be carried into effect. I consider that is the great danger we all run, that a general quarantine will be put into effect, and not only result in an individual paralysis but a general paralysis of traffic.

Dr. KING. I think that the intention of the motion was to formulate some statement that might be given to the press. They are now, I know, clamoring for statements to send out, and I understand that the idea in the motion suggested is to produce something that may be sent out to allay the fears of the laity in general. If that is the idea of the motion of Dr. Porter, I think it should be carried out, irrespective of the other, and that this conference should adopt these means set forth by the Public Health Service. I understand that is the object of the motion.

Dr. YOUNG. The thing I am the most anxious to carry home is the report of this committee on the prevention of the interstate spread of the disease. Four or five years ago we planned a circular on poliomyelitis. Lately I have been rewriting and preparing an eight-page pamphlet, and before I came here to this conference I had the idea of putting it in the hands of the printer and rushing it off; but I concluded to wait until I returned. A good many questions have come up as to the form of the certificate to be used. This matter of the settling of the form of the certificate I should like to have decided as soon as possible, and so I should like to inquire when we can probably have the report of that committee—when will they complete their work?

Dr. DRAKE. Mr. Chairman, as I understand it, the most important part of the entire conference is just before us, on the method of the control of the disease, and until that has been intelligently discussed and a committee appointed possibly to formulate minimum requirements, I do not think that there is much we can say at this particular time.

Dr. WOODWARD. If I understand the purpose of Dr. Porter's motion, it is that we prepare a brief circular on how to avoid infantile

paralysis. Now, if we can agree on a brief circular of that sort, by all means let us do it; but until we can, I am afraid we are going to fail to satisfy the public and we are going to display, not what we know about infantile paralysis but rather the great blank page of what we do not know. This body can hardly at present agree on any statement of accepted scientific facts concerning infantile paralysis that will be of great use to the public.

What the public wants, as I understand it, and what this body wants, and what the railroad men want, is some rule of conduct based on the best knowledge we have. It will certainly be the function of this committee on interstate and intrastate prevention to present such rules, as far as they can be laid down. It seems to me if we have one committee at work along the lines of practical administration and another committee undertaking to sift from the vast mass of undigested data material which they can approve, we will have trouble possibly in reconciling the practical application of the facts recommended by one committee with the facts that another committee asks us to indorse. I am heartily of the opinion that the whole matter of advice to the public had better be left to the committee on interstate and intrastate quarantine. When we have adopted their report we can then appoint a committee to prepare some scientific leaflet.

Dr. PARLETT. It would seem, speaking from a railroad standpoint, that something should be adopted, because the railroads are affected by virtue of their function as common carriers. In some States no certificates are required; in other States certificates are required to be carried by both adults and children; in still other States, where the conductor finds that children have not certificates, they are put off the train. I have a telegram this morning stating that four children were put off a train at Washington, Pa.—put off in the woods. Naturally the public will object, and the railroad companies object; and if there is anything we can do at this meeting, so that the railroad men representing the various railroads here may take back to their managements something that will help them as well as the public, I think it ought to be done. The railroads are perfectly willing to help. I think we have given ample demonstration of that, and we want to continue to render assistance. But we do not know whether to put up this notice here or that notice there, or not to issue tickets to children who do not have certificates, or if they present certificates whether or not they should be recognized as bona fide certificates. If we can have the seal of the State stamped on the various certificates when they are presented, so that they can be identified and stamped by the ticket agent and later taken up by the conductor, we will know what to do.

Dr. GARRISON. I move, as a substitute for Dr. Porter's motion, that his motion be laid on the table until we have a report from the interstate committee.

(The motion was seconded.)

The CHAIRMAN. You have heard the motion, that the motion of Dr. Porter be laid temporarily on the table.

Dr. PORTER. I am perfectly willing, Mr. Chairman, to withdraw it. I simply wanted to be able when I leave here to go down to Florida and when they ask me, "What did they do up at the conference," I will not have to say, "I do not know what they did. They did not seem to come to any conclusion as to what causes this disease or how it is spread or anything about it." I want to be able to say something, and to say it intelligently; and I am perfectly willing to withdraw my motion in favor of anybody else's.

The CHAIRMAN. I hope Dr. Porter will renew his motion later.

Dr. MCLAUGHLIN. Mr. Chairman, we are not getting anywhere, and we are wasting a lot of valuable time. We can not do anything until we get the report of that committee. We can not prepare a statement for the railroads or anybody else until we obtain the report of that committee and put the stamp of this conference upon it, and then we can give out a statement.

Dr. WOODWARD. I think there is one thing we can do before we get the report of the committee which will help very much, and that is to discuss this next topic, "General principles of control." If the committee can go into session with some knowledge of our suggestions it will be an advantage to them. I move we have that discussion.

(The motion was seconded.)

The CHAIRMAN. Without objection, we will so proceed. I would like very much to have Dr. Haven Emerson open this discussion.

GENERAL PRINCIPLES OF CONTROL.

Dr. EMERSON. I think I have really nothing to say on this. The only methods of control that the New York City department of health has attempted to put into force were the immediate reporting, prompt diagnosis, and removal of cases to the hospital. We discussed the matter with the best available talent in the vicinity of New York, and all of the officials agreed that until we had tried isolation of those affected, and had obtained reports of all possible cases and verified the diagnoses by competent diagnosticians, no other measures could be attempted or would be likely to prove effective. We judged that if our experience with other diseases was worth anything, 90 per cent of the trouble was going to come from the persons who were or had been sick. It may be that this disease is going to

be contrary to all other infections. It was our idea to get all the patients under fly screens, so that they would not prove centers of infection.

We adopted various measures also which seemed appropriate to our locality, limiting the movement of the children. We attempted to interfere with the congregating of children at moving-picture theaters, large picnics and excursions, and so on, and we have headed off a good many such mass groups of children. That prohibition still continues. Whether it has accomplished anything there is no possible way of telling. We realized that this procedure was not entirely beneficial, and we have had the mortification of going through our streets and finding the windows of tenements shut in the summer season lest this terrible "miasm" come into the houses and seize the children. We have had this warning produce the housing of children in wholly unsuitable places for fear of physical contact, and in spite of all this we have had the lowest infant mortality this summer in the history of the city. [Laughter.] The only thing we tried to do was to hospitalize the cases as soon as discovered, or to put them under conditions as near the equivalent of hospitalization as possible, and to avoid all unnecessary crowding and grouping of children.

You will see we have not endeavored to keep them off trolley cars or off the streets, but instead of setting aside play streets for the special gathering of children, away from traffic, we have tried to encourage their playing in their own premises, and not to mix unnecessarily with children from other places. We have kept as many of the camps open about the city as could be subject to ordinary observation. In other words, we encouraged the gathering of children whom we knew came from noninfected premises, provided medical supervision could be enforced. I do not think our control has been based on any other lines. We took advantage of this epidemic to obtain a more general and effectual enforcement of the reasonable requirements of the city with regard to the removal and covering of garbage cans, and the cleaning up of dirty places, but we did not do that with the idea that it would have anything to do with stopping the spread of the epidemic. We did it with the idea of taking advantage at this time of public susceptibility and we considered that the time was favorable to hit hard and try to get the people to obey the law.

The SECRETARY. Gentlemen, if I may I desire to speak on this subject just for a moment, for the purpose of summing up and attempting to crystallize the methods of control brought out to-day. It would seem to me that we can put this thing in a relatively few words. The notification of all cases; the prompt diagnosis of all infections, particularly those of children; the isolation of contacts

and actual cases, including enforced hospitalization where possible; the control of acute and chronic carriers wherever they are known to exist; the prevention of susceptible persons coming in contact with large numbers of other persons, including gatherings at theaters, churches, and schools, are all essential.

We must admit that if the schools are permitted to open under an accurate, active medical inspection, a great many children will be better off than if they are forced to stay at home. On the other hand, there may be, and doubtless are, children whose home conditions are so good that they can remain there without running the danger of coming into contact with children who are acute or chronic carriers of the disease. With regard to the playgrounds, it would appear to me that there is a good opportunity for the medical inspection of a large number of children.

Concerning the control of travel, it seems to me that the consensus of opinion expressed by the speakers is that travel is dangerous in so far as it permits the movement of acute or chronic carriers of the disease.

With regard to insects the evidence to-day is apparently against insect transmission.

It is extremely doubtful if food supplies play any great rôle in the spread of the disease.

Concerning the relation of sanitation to the disease, of course, we, as preachers of the gospel of sanitation, are always willing to take the opportunity to make conversions, but it seems to me as though the sanitary measures as applied to this particular disease are the use of a scatter gun or blunderbuss rather than the use of a rifle. [Applause.]

(Asst. Surg. Gen. Rucker here took the chair.)

Dr. Bracken. I am supposed to be in committee, but I want to say a word before I go. One thing I deem most important in the control of this disease is that physicians throughout the country recognize it. They do not always do this, and the disease is called all sorts of things. That is one matter which we must see to. First you have got to catch your hare and then skin it. If we recognize, or bring the doctors up to the point of recognizing, this disease, then these points which have been made by Dr. Emerson and Dr. Rucker come right in line, the matter of reporting and isolation. I am very glad indeed to have this point of hospitalization brought out. Fortunately we are not all of us situated as Dr. Emerson is in New York. Most of the children in Minnesota probably have 16 square miles to play in per child, yet isolation even for them is important. We have been handling our communicable diseases at home in quarantine all along, when they ought to be hospitalized. We ought to take the individual out of the home and leave the home free.

Dr. ALBERT. I should like to ask Dr. Emerson in regard to the isolation of cases, and also what is done to control the contact of the child with the family?

Dr. EMERSON. Every patient we have discovered and accepted as a true case has been isolated for eight weeks. We are beginning to discharge cases now. The quarantine period of eight weeks begins from the date of onset and not from the date the diagnosis is established. All children under 16 years of age in the families of or in contact with acute cases have been kept within their premises for two weeks. If the case is removed to the hospital, the other children of the household are kept at home two weeks; and if the case dies, they are kept at home two weeks. If, therefore, the patient is kept in the home for his eight weeks' quarantine, instead of being sent to the hospital, the other children of the family must stay two weeks more beyond the quarantine period of the acute case. That means 10 weeks. If parents choose to run the risk of keeping the child at home, they must abide by these principles, which we have carried out from the beginning. The incubation period is quite uncertain, and it is a guess as to the necessary period for quarantining. We have done what we thought was practical and not what we considered scientific.

Dr. HAYNE. I simply want to ask a question with regard to the spraying of the nose and throat, whether it has any prophylactic value. In cerebrospinal meningitis I do not close the school, provided the children before entering have their noses and throats sprayed with an antiseptic solution; we usually use Dobell's solution. I was under the impression that that was a good method until reading in some of the newspapers—and we have had a great many articles, inspired and otherwise, in regard to the control of this disease—in which it was stated that spraying not only was not beneficial, but that it actually did harm, because it injured the delicate mucous membrane of the nose and throat and probably thereby increased susceptibility. Now, of course, I know doctors are immune to all diseases and carry none of any description. Consequently when I visit houses where there is infantile paralysis, and I have had to visit 25 or 30 within the last week, I in my ignorance used to spray my nose and throat, with the idea that possibly I might not carry the infection to my children or to other persons. I should like to obtain the consensus of opinion whether that does any good or whether it is just a useless method of annoying one's self?

Dr. EMERSON. I can not give you the consensus of opinion on this matter, but I can tell you the consensus of opinion of the city specialists and others to whom the question was referred for an opinion at the beginning of this epidemic. Physicians generally used an atomizer with a normal salt solution. Practitioners in the city in

general are against the popularizing of the use of the nasal spray among children.

As a matter of fact, as to carrying infection, the president of the medical board of one of our hospitals lost one child and another child was infected, and it seemed as if he might have carried the disease home to his family. I think that will bear a little statement in explanation. The practice of the doctor was to change his clothes and get into a suit of duck when he reached the hospital and to wear his gown and cap. He washed his hands and face before he left, and when he returned home he changed into other clothes. He never took his children in his arms or kissed them or had them about him, and he had a separate entrance to his office, an office apartment. A further important fact is that the nurse of those children, a Polish woman, left after she had put the children to bed and went and spent the night at the home of her sister, whose child was infected, returning the next morning to the doctor's children. She, with her habits, coming from an infected case, appeared to us and to the doctor who lost the child as the more probable carrier.

I think every doctor always takes the precaution not to get into the spray line of a patient, and that the habits of doctors become so self-protective that they are least likely to carry infection. Physicians do not go into houses where there are healthy children looking for a case; they go when they are summoned to a sick patient. We have not found that the infection could be traced in any way to the doctors and nurses in attendance at hospitals. You must remember that these patients have been admitted to general hospital wards, and no single case has ever developed under hospital conditions. Now, why is it?

Dr. McKelvey. I presume Dr. Emerson is tired of answering questions, but I should like to ask him to what extent fumigation is used in New York and to what extent it has been used in this disease?

Dr. Emerson. It was abandoned throughout the city two years ago for all diseases. We do not use it. [Applause.]

Dr. Swarts. Do you mean disinfection or fumigation?

Dr. Emerson. I mean disinfection by fumigation.

Dr. Swarts. In connection with this disinfection by the use of a spray and the application of Dobell's and other solutions, I think it is a good idea not to recommend it to the public for general use, because they are likely to apply too strong a solution and injure the cells of the mucous membrane, which are a protection, in a measure, against organisms of every kind. Furthermore, I should like to know whether the opinion is correct that the removal of tonsils and adenoids causes a predilection to this disease?

Dr. EMERSON. The consensus of opinion is that no operations for removal of tonsils or adenoids should be done when the disease is prevalent, lest it make the patients more susceptible to infection of every kind.

Dr. YOUNG. The question now arises as to individual hygiene. I believe great good could be accomplished if a committee were appointed to formulate rules and regulations, or an outline of the hygiene of the individual in his relation to poliomyelitis; not only for the individual physician, but for the individual himself.

Dr. MCKELVEY. When I asked the question awhile ago as to disinfection I was fully aware that New York had abandoned what is ordinarily known as terminal disinfection, but recently I have seen something in the press regarding fumigation or disinfection which led me to believe that possibly some exception was made in the case of this disease. But we have in the rural sections of the country certain conditions that are not existing in New York City in regard to disinfection. In New York City they have the means and the men to go to the houses and carry out certain rules and regulations as a substitute for disinfection employed throughout the country more generally. In the rural districts you can not do that. It seems to me that it would be proper for us to have an understanding as to how disinfection should be employed. That is what I wanted to bring before the conference. What are we supposed to do in the rural districts? We can not in all instances have a health officer to superintend the repapering and repainting of the walls of the building and of the floors. There should be some general plan worked out.

The CHAIRMAN. It seems to me, Dr. McKelvey, you could trust to the layman in painting and papering and calcimining better than you could to the action of a gaseous fumigating agent; the fact is that soap and water and a good strong elbow kill more germs than formaldehyde ever thought of killing.

Dr. WOODWARD. I should like to ask those familiar with the epidemiology of the disease whether there are any instances of school outbreaks. It might throw some light on the subject whether history records institutional outbreaks. Dr. Emerson has referred to New York, where great care is taken to prevent their occurrence. My recollection is that in New England there was an instance where without the exercise of any precautions the institutional population largely escaped. My question was whether there have been school outbreaks of any kind, and I think it is very pertinent to the present situation at the present time of year.

Dr. FROST. Answering Dr. Woodward's question, there are records of outbreaks apparently connected with schools. I have in mind some Swedish outbreaks that Wickman reports. He considered that the schools were sometimes the foci of infection. I can personally

report one outbreak which seemed to very definitely originate and be spread from a small country school. I have seen at least one outbreak in a large city, where the schools were open, and where there was no evidence of their acting as disseminators of the disease. I think in one school in the kindergarten grade we had two cases. In other schools we had only isolated cases among the pupils.

In regard to institutional outbreaks I do not recall anything definite regarding their occurrence. I think it has been generally the fact that institutions have been rather free. That is my impression. I have occasionally seen one or two cases in large institutions, but not constituting an outbreak of any proportions.

Dr. STILES. At the present moment it is not a question of closing but of opening the schools. Take our Washington schools; the pupils are scattered from Maine to Florida, and as far west as California. They will open here late in September, I have forgotten the exact date, but about the 25th of September.

The CHAIRMAN. It is the 18th.

Dr. STILES. Is it wise, under present conditions, to have the Washington children return to the schools and mingle with other children, who have been away all over the country, or is it wise to bring those children back to Washington and to open the schools as early as the 25th of September? I should like to emphasize the point that it is not a question of closing the schools at the present moment but of having children all over the country travel from infected districts back to their homes, in many places to uninfected cities, to enter the schools. It looks to me as if that were one of the critical points to be discussed of the present situation.

Dr. FRANTZ. Mr. Chairman, I should like to say, relative to the schools of Delaware, that any child coming from an infected district, or who has been in contact with infantile paralysis infection, will be taken care of in the State of Delaware, and will not be allowed to go to school for two weeks after he returns. Unless we should have an epidemic, or more cases than we have had in Delaware, we will open our schools the second Monday of September. That is a question which each State must solve and settle for itself. But I think that with the report which we hope to get, through the deliberations of this organization, we can take care of all these children.

Dr. YOUNG. As to the bearing of opening the schools upon the economic question. Just before I started to come on here I was called to make a rapid run of 16 miles to a large summer hotel on account of two or three cases of typhoid fever among the help. The manager of the hotel told me that many of his guests would remain there much longer than usual. They had declared that they would not return to New York City or other places where there might be poliomyelitis, until November. I have heard similar re-

ports from the managers of other hotels along the coast and in the interior of Maine. That is just a point on the economic question.

Dr. CARR. Mr. Chairman, in Nebraska we will open our schools about the 11th of September. We believe that where there is good school inspection and the children are healthy, we are better able to keep in touch and to cope with disease of any type. Hence our schools will commence in Nebraska on time.

Dr. MCLAUGHLIN. I would like to ask Dr. Emerson a question, but I have not the heart to do so. I think it is really unpardonable the way we have imposed upon Dr. Emerson, and I want to say, in my opinion, how fortunate the city of New York, the country at large, and this conference in particular, are that the health commissioner of New York is a gentleman and a scientist. [Applause.]

Dr. Haven Emerson as a scientist does not lose sight of the opportunities of finding out just how this disease is transmitted, but has thrown open the scientific resources of his department, and has welcomed the scientific aid which may come from outside sources, and given to those outside his department every opportunity to come there and use what he has. As a gentleman, he has attempted no concealment whatsoever, and along the Atlantic seaboard I know we appreciate the frankness with which he has declared what he had and has shared with us all the information in regard to this baffling epidemic. [Applause.]

The CHAIRMAN. I am very sure that Dr. McLaughlin voices the sentiment not only of the Service in this conference, but of the Nation as a whole, and I wish not only to second very frankly everything Dr. Emerson has said, but to express our gratitude to him for coming to-day and giving of his very precious time to help us in this present emergency. [Applause.]

Dr. TRASK. I should like to add just one word to what has been said. In times of epidemic the natural tendency on the part of the community is not to see or recognize the presence of an outbreak. The natural tendency is to want to suppress facts, or not to let them become known. Many communities have, especially during the last decade, shown a tendency to overcome this natural inclination, and have firmly and positively warned other States, cities, and the Nation as a whole, and I believe sincerely it has resulted in their own benefit. But there has been no instance I know of where the tendency to absolute frankness has been so marked as in the present outbreak in New York City, and if it is the consensus of opinion of this conference I think it would be a most excellent plan to indorse in decided terms the stand in regard to publicity and frankness which has been displayed by the Department of Health of New York City. [Applause.]

Dr. PORTER. I second that motion.

The CHAIRMAN. It has been moved and seconded that this conference indorse the policy of publicity carried out by the department of health of Greater New York.

Dr. WOODWARD. I should like to move to amend that by saying that the Public Health Service shall send a copy of that, as prepared, to the mayor of New York and to the press of New York.

(The motion of Dr. Woodward was seconded, and the question being taken, the motion as amended was agreed to.)

The CHAIRMAN. Gentlemen, the hour is getting late, and we must decide what we will do with the remainder of the program. Is it the wish of the conference that we shall convene this evening for further deliberation or adjourn until to-morrow?

Dr. WOODWARD. Before we adjourn, I want to say I think it is important that we know when these committees will be likely to report.

The CHAIRMAN. It seems to me if the committees could do their work this evening it would be wise for the conference to adjourn until to-morrow morning. That would give the evening to the committees to work.

(At 5 o'clock p. m. the conference adjourned until Friday, August 18, 1916, at 9 o'clock a. m.)

MORNING SESSION, SECOND DAY.

(The conference was called to order at 9.30 o'clock a. m. by Asst. Surg. Gen. W. C. Rucker, acting chairman.)

The CHAIRMAN. The conference will please be in order. The first subject for consideration this morning is "The relation of the community to the aftercare of poliomyelitis patients." I think that in the discussion of this subject the conference would do well to consider not only the important points of the medical and surgical treatment but particularly the sanitary aftertreatment, and I will ask Dr. Albert, of Iowa, to open the discussion.

THE RELATION OF THE COMMUNITY TO THE AFTERCARE OF POLIOMYELITIS PATIENTS.

Dr. ALBERT. The seriousness of poliomyelitis is regarded as so great that many people feel they would prefer to have their children succumb to an attack of the disease rather than to be affected by the paralysis which often cripples them for life and makes them dependent, or very largely so, for the remainder of their days. The situation is, however, by no means so hopeless as it has seemed to be in the past, and a great deal can be done, as is now well demonstrated, in the way of preventing the deformities in the first place

and in curing them after they have developed. I presume the reason why the chairman asked me to open this discussion is because we have a place in Iowa where we undertake to overcome these difficulties to a large extent. Overcoming deformities in necessarily a long procedure and an expensive one. Heretofore only the well to do have been able to give their children the proper kind of care. The poor have usually neglected their children, and they have often become charges on the community.

The last legislature in Iowa made provision by statute for the sending of children to the University Hospital for treatment, including provision for free treatment and for payment of all expenses. Most of the children who have come under this law were either crippled or deformed, and a large portion of them are children who were deformed during the epidemic of poliomyelitis which occurred in our State in 1910. At that time we had several hundred cases. During the past year some 80 children have received treatment, and it is remarkable what results have been obtained. I am sure that when our administrative authorities go to the legislature the coming session for an increased appropriation for this service, there will be no difficulty in obtaining it. The results have been very remarkable and satisfactory, and universally praised. Nevertheless, the results obtained have been in the nature of correcting deformities, while the object should be to prevent these deformities as far as possible. It is quite certain that as an outcome of the present epidemic we will have a large number of early cases sent to the University Hospital, with the idea of preventing deformities. I may say that it has been our experience, and I presume it has elsewhere, that physicians in general do not pay sufficient attention to the questions of massage and other procedures in the way of properly reestablishing circulation, with the idea of having the muscles regain their functions.

I think that the attention of physicians ought to be called to the fact that a great deal can be done to prevent the serious deformities which often follow attacks of poliomyelitis.

This is a thing which it seems to me has been very largely solved in our State, and it has been done, of course, by many municipalities also. From the standpoint of the State, the best solution of the problem is to make provision for these children, to have them treated in a State institution at State expense, and not only to treat cases such as we have been treating during the past year, but also the rather early cases, after the patients have recovered from the acute disease.

Dr. RANKIN. What has it cost in Iowa, per capita, or case, to do this?

Dr. ALBERT. I am not able to tell you. No figures have been available as yet. We have been operating only nine months.

Dr. WOLFF. How much of an appropriation have you?

Dr. ALBERT. It is rather a peculiarly worded law. The law says that the patient shall be sent to the University Hospital and that the county shall pay the transportation charges. An examination by a physician is provided, for which the physician receives $5. All other expenses are borne by the State. The medical expense is borne by the university. In this way the law serves a double purpose. It renders to the poor people of the State a service and also furnishes the university medical department with clinical material.

Dr. WOLFF. And what is the total appropriation?

Dr. ALBERT. I was getting back to that. For the medical and nursing service no charge is made. It is presumed that the hospital physicians will render their service without charge. Now, the question of the so-called hospital charge is referred back to the executive council. No appropriation is made, but whatever it costs to maintain the patient in the hospital, aside from the medical and nursing service—simply the hospital room, board, etc.—is charged to the executive council of the State, and so far no figures have been available. No appropriation of any kind is made.

The CHAIRMAN. Will some one else discuss this subject?

Dr. PORTER. I should like to say that in Florida several years ago the legislature passed a bill providing that the indigent crippled children of the State should be cared for at the expense of the State board of health. Until the number was found sufficient to warrant the construction of a hospital and provide a staff therefor, the State health officer was authorized to arrange for their care in any private or public institution. Since that time we have added to the staff of the executive force of the State board of health a surgeon of prominence and of expert knowledge in orthopedic treatment, and we have treated numbers of white children at St. Luke's Hospital and colored children at the Brewster Hospital. This treatment has been free of any charge where the patients were indigent, the only requirement being that they shall present themselves at these hospitals in Jacksonville. We hope at no distant future to be able to construct a building especially devised for this purpose. The bill under which the work is performed had its inception with Gov. Gilchrist, of Florida, who had a philanthropic desire to aid the crippled children of the State. There is quite a little history attached to it, which it is not necessary for me to go into right now; but there has been a vast amount of good work done. Those of the conference who receive the annual report of the State board of health of Florida will notice in the appendix a great many interesting photographs of cases at their inception and after subsequent treatment.

Dr. WOLFF. What is the cost per patient?

Dr. PORTER. Independent, I think, of the salary of the surgeon, we spend some $6,000 annually. That is for the hospital care of patients and the first braces. Subsequent braces are paid for by the parents, but their fitting to correct deformity is defrayed by the State. I do not know the exact amount, but those of you who have our report—and every health officer in the United States has one sent to him each year—can refer to the table, ascertain the details, and observe the photographs.

Dr. CARR. Mr. Chairman, Nebraska is very proud of the work she has done for crippled and deformed children, and as I reported here yesterday, is making great strides in this line of endeavor. A few years ago we obtained an appropriation, after a hard fight before our legislature, of $10,000. The next legislature gave us $100,000, and so it has been ever since; we have been able to get any amount that is needed and required for this special line of work. It is a line of work that is especially appealing, and legislators, when they go out to our orthopedic hospital, simply come back and say, "Why, you can have any amount, at once." It is surprising that we are not able to get over about $20,000 annually for health work in Nebraska, but for deformed children we can obtain any amount we ask for.

This work is not under the State board of health, by the way, but it is under the board of control of the State, and all patients, both indigent and rich, are served alike.

Dr. SWARTS. Mr. Chairman, it little behooves the health department, perhaps, to indicate to the physician what shall be the treatment, but in the absence of knowledge this practice is quite prevalent among officials. It seems proper that indigent children should be taken care of by those who have information which is of value, and for this reason the departments of health should state or suggest to the physicians who are not willing to obtain knowledge from other sources what has been found of advantage in these cases. Physicians are looking to us for this information, which we should endeavor to collect. We should know that there is a possibility of deriving some benefit, not alone to the individual patient but from an economic standpoint to the State, in the conservation of the power of such muscles and nerve filaments as may have been left only partly affected, or intact and unused from lack of encouragement. Efforts along this line are commendable, and it is a pleasure to see that the Western States, which are so far ahead of the effete East, are alive to this fact. I trust that this conference, before it decides to close, will take some action on this matter, recommending that health departments secure from their legislatures as much assistance as they can get to place these cripples in a condition whereby they can care for themselves, because it is of distinct benefit to the State. I heartily indorse

the work which has been described in these Western States, and hope we may have some result from these efforts.

Dr. LADD. Dr. Emerson, of New York City, wanted me to make the following statement: They have decided in New York to follow the same general course we have adopted in Vermont, and they have already organized a permanent committee. As a patient is discharged from the hospital he is given a written statement of just the condition he is in at the time. They also give a list of orthopedic dispensaries of the city, so that the patient can be taken to the nearest one. It is the duty of the organized and permanent committee to follow up the work and see that the patient is taken to one of these institutions. Muscle training is also taken up at the home through the urging of this committee. The State is to be districted, so that the work may be systematized.

The CHAIRMAN. It seems to the chair that while the prevention of this disease is the function of the departments of health, we should not lose sight of the fact that if we fail to prevent it we will have these cripples. One of the most pitiful things with regard to poliomyelitis is the fact that thorough aftertreatment results in such slow progress, and from month to month very little improvement can be noted. The result is that the parents become discouraged. They cease to patronize a reputable physician, and they begin going around to quacks who advertise, "We cure paralysis." They go from quack to quack until a condition is arrived at where the family resources have been exhausted and the opportunities for cure of the patient have been entirely lost. I think that the movement which has been started in New York for the creation of a fund to provide treatment at a special hospital for these children is one of the greatest and most beneficent philanthropies that could come at the present time. Much as we, as health officers, want to prevent the disease, I still think we should not overlook the raft of human wreckage which follows in its train. [Applause.]

If there is no further discussion on this question, we will now receive the report of the committee on uniform methods of collecting statistics regarding poliomyelitis. Dr. Lavinder.

REPORT OF COMMITTEE ON UNIFORM METHODS OF COLLECTING STATISTICS.

Dr. LAVINDER. Gentlemen of the conference, the committee, in making its report, has two or three things to offer. The first is that there are representatives of a large number of States here, and they all came prepared to give us a certain amount of data. I do not know how great it is, but it is valuable to us, so that we have prepared a form for temporary use, to be distributed among the gentle-

men present, with the request that they offer their suggestions before they leave, and that they fill out this form giving us the information they have with them. Many of them have already made reports. Copies of this form will be distributed to everybody, and if you do not get one, please look for it and fill it out before you leave, so that we may have what data you possess.

In addition to that, there are certain other data wanted, and we have compiled two forms which will be completed shortly. One of these forms is an attempt to get poliomyelitis statistics from the States by months and by counties since 1910. That, I presume, will be mailed to you if the meeting approves of the form.

The other is a form for the collection of poliomyelitis statistics by periods, with the details concerning sex and color. We thought we could get those data, and it would be very important to us right now.

Finally, there is the form which was adopted in 1911 by the health authorities, copies of which I desire to distribute so that we can run over it quite rapidly. This is a case report which was gotten up in 1911 in order to standardize and make more uniform the data collected with reference to poliomyelitis in each State. Some slight changes which I will run over in a minute have been made by the committee. I wish to make it plain that this case report is for use in individual States where the health officer desires to make more detailed studies of particular cases. I do not believe that the Public Health Service has any method of receiving all reports and tabulating data. It would be a very large job which we at present have not the machinery to handle. This form is distributed with the idea that if the State wants to study the individual case, this is the form to be used, and then the data are all comparable on the same basis. We thought it better that the conference should run over this, so that any changes suggested could be made.

The second line indicates by check whether the case is paralyzed or abortive. The first page remains just as it is. I would like everybody to look that over and see if they have any suggestions to offer. Then we have the patient's name, age, and sex, nationality of father and mother, occupation of father and mother, residence, post office, and county. Does patient live in city, village or country? If in country, state distance from center of nearest town or village, Status of family; well to do, moderate, poor? Sewage disposal, flush closet, cesspool, privy? General sanitary conditions; excellent, good, fair, bad? Previous general health of patient; excellent, good, poor? Had patient suffered from any illness, indisposition, or accident within a month prior to this attack? Nature of illness or accident.

OTHER MEMBERS OF FAMILY (INCLUDING GUESTS, BOARDERS, AND SERVANTS).

Children: {Males (age of each)_____ / Females (age of each)____ Adults: {Males, number_____ / Females, number_____

Were there any other cases of sickness in the family within one month before or after this attack? _____

Give name, age, sex, date, and nature of each case?_____

_____

SYMPTOMS OF ACUTE STAGE.

Fever: High, moderate, slight, none?_____

Headache: Severe, moderate, slight, none?_____

Constipation, diarrhea, vomiting, sore throat?_____

Pain, distribution? _____

Tenderness, distribution? _____

Retraction of head, restlessness, drowsiness_____

That page stands as it is, with the exception that the second line is placed elsewhere.

On the next page the first line is inserted, "Type of case, abortive or paralyzed." We took that from the head of the first page and put it in this place on the second page.

Then that page continues:

Date of onset of acute symptoms_____

Date of onset of paralysis_____

Distribution of paralysis at its worst_____

What treatment was employed, and with what apparent results—

(*a*) In acute stage_____

(*b*) Subsequent to acute stage_____

Then there is added "With special reference to restoration of motion."

Then we have:

OUTCOME OF CASE TO DATE.

Recovery (complete disappearance of paralysis)_____

Improvement, extent of paralysis remaining_____

Death, date _____

CONTACT WITH PREVIOUS CASES.

Then there has been added "Date when previous case occurred."

Then, with two additions, it continues as follows:

Had patient been associated with any previous case? If so, state whether paralyzed or abortive; give name, address, and date_____

1. Had patient or member of family visited any place?_____

2. Had any visitor been to see family?_____

Did patient attend school?_____ Where?_____ Grade_____

What were the weather conditions immediately preceding this attack? Hot, mild, cold, wet, dry, dusty, unusual in any respect_____

Have any infective diseases, respiratory or digestive troubles, or unusual disorder of any kind been unusually prevalent in the community?_____

What animals or fowls were kept on the premises within month preceding attack?_____
Has there been any paralysis of animals or fowls in the vicinity?_____
What preventive measures were carried out?_____
Remarks: Please state any other facts of interest concerning the case_____
Date of filling out report_____

Signed_____, M. D.,
Address_____.

Dr. WOLFF. I should like to add to that "Was there any intimate contact with such animals on the part of the patient?"

Dr. LAVINDER. Has anybody anything further? You understand, in getting up this blank form, we wanted to make it as simple as possible, and we eliminated certain things. If you were to multiply the questions, you would not get any result at all. We felt that this was the maximum; the best we could do. There was no other change made, except that the address was added under the signature. Now it is suggested that we make a question as to whether there was contact with fowls or animals.

Dr. HOFFMAN. I would suggest that you indicate the race, and that you substitute the word "nativity" for "nationality."

Dr. LAVINDER. That was a subject of discussion with us, and we decided to omit it.

Dr. HOFFMAN. Why should you want to omit the race?

Dr. RANKIN. You would have to have the race in the South.

Dr. HOFFMAN. As to race, white or black.

Dr. LAVINDER. Yes. We discussed that question, and we felt we would not be justified in inserting it.

Dr. HOFFMAN. The statement was made by Dr. Emerson that it was thought for a while that among the negroes in New York City they had no cases at all. That was not correct. It would have been of very great consequence if it had been true.

Dr. LAVINDER. You could put it "white or colored."

Dr. YOUNG. Were you here yesterday afternoon?

Dr. HOFFMAN. Yes. I refer to the first discussion in which the statement was made by Dr. Emerson. If that statement had been subsequently found to be correct, it would have been of great value.

Dr. TRASK. The trouble with the word "race" is that it is understood differently. Many think of the Malay and the Caucasian and the Mongolian when you use the word "race." Then, of course, some understand it as meaning nationality. If that information is desired, that is the best way to put it.

The CHAIRMAN. Let Dr. Lavinder finish his report, and when we come to the question of its adoption we can have the discussion.

Dr. LAVINDER. Dr. Drake suggested, and it seems to me it is not a bad idea, that we number each one of the questions on this blank, and

then we can attach an explanation as to what we desire by referring to the number of the question.

I should like to add a word or so that has no connection with the specific matter now under consideration, but which is more or less of an appeal to you personally. There are certain cases which leave infected centers, particularly in New York City, and go to other parts of the country, certain selected cases, in which the chronology is of enormous importance for the purpose of attempting to establish more or less definitely an incubation period. Yesterday Dr. Frantz, of Delaware, reported an instance of that kind. They are not all of value, but some of them are, and we in New York would be very glad to receive from anybody a detailed report of such cases, especial attention being given to exact chronology of events. We feel that those cases are of special importance with regard to establishing an incubation period, and if any of you have the information we would be very glad to get it. Finally it was suggested that this conference might appoint a standing committee on statistics with regard to either poliomyelitis or other diseases, so as to make them uniform.

That completes the report of the committee, with the exception of the discussion.

The CHAIRMAN. You have received the report of the committee. What is the wish of the conference? The chair will entertain a motion that the report of the committee be received.

(It was moved and seconded that the report of the committee as read be received.)

Dr. ROBERG. Mr. Chairman, if this report is adopted, I would like to suggest that in addition to this, on the reverse side, at the close of the blank, the differential diagnosis of infantile paralysis from other diseases in which there are meningeal symptoms be printed, with the view of helping in the filling out of these blanks. There are many diseases with symptoms which are with difficulty differentiated from poliomyelitis. I had a case of central pneumonia in which the examination did not indicate the lung symptoms, but the entire picture was typical of poliomyelitis. Two days later the lung symptoms could be identified as pneumonic. Now, a differential diagnosis or mention of those diseases which have meningeal symptoms, if placed in fine print in this report, would help many physicians in filling out these cards.

Dr. BLACK. I second the motion that before this be received it be adopted section by section.

The CHAIRMAN. With regard to what Dr. Roberg has just said, the chair would suggest that it would be better to attach to this blank a little pamphlet for the benefit of physicians bearing on the salient points in the diagnosis of the disease. I think that would serve a better purpose than to put it in the corner of the report in fine print.

Dr. KING. On the first page of this blank, under "Acute stage," there are two suggestions I should like to make. One of the questions discussed in this country and one of the things we have been led to believe with reference to poliomyelitis is that the secretions from the nose and throat carry the virus of the disease. Yet I find nothing under the true symptoms of the disease to indicate whether or not there has been, prior to the attack, during the attack, or subsequent thereto, any unusual nasal or throat discharge. In our study of poliomyelitis in Indiana, covering four or five years of more or less superficial investigation, the blank form which went out to the physicians requested information as to this predominant symptom. In more than 84 per cent of the cases studied personally there was a profuse perspiration, which could not be accounted for except as one of the rather prominent symptoms of the disease under consideration. I do not know that this has been true in the experience of others, but it was true in the Indiana cases. It occurs to me that under the head of "Acute symptoms" it might be well to have the data regarding this particular symptom. The two questions I would like to have you add are with reference to profuse perspiration, and whether nasal and throat discharges be present.

Dr. LAVINDER. I suggest that we take the first section and find out whether there are any changes to be made, and we will get along much faster.

The CHAIRMAN. I think that is a very good suggestion, and we will consider this section by section. Has anyone any suggestions to make regarding the first section; that is, down to "Other members of family (including guests, boarders, and servants)"?

Dr. LAVINDER. The second line is eliminated and placed in another place. There is "Patient's name, age, and sex. Nationality of father and mother." Now, it has been suggested that we add a suggestion there on color.

Dr. BLACK. I move that we put in there, "white or black."

Dr. DRAKE. If we are to incorporate that question as to race, I think it would be very much better to indicate it as it is indicated on the standard blank; that is, red, white, black, or Indian. That covers all the races.

Dr. SWARTS. Is it desired to discover the color of the skin of the patient, or the place he comes from? It seems to me it is the question of nationality that the collaborators want to get at, to determine the susceptibility of Germans, Irish, or Americans. It is not a question of whether the skin has a light color or more or less color. It is rather a question of nationality.

Dr. TRASK. It seems to me from what has been said that there are certain communities in special sections of the country having what is known as a colored population, and that in those sections the words

"white" and "colored" would be thoroughly understood, and will bring out the desired information; that under other circumstances the word "nationality" would perhaps come nearer giving you the information you desire, whether Italian, German, or Scotch. I would suggest in addition to the form as it stands that there be inserted "white or black," or "white or colored," in the line under nationality.

The CHAIRMAN. Without objection, the words "white or colored" will be inserted in this section.

Dr. BURKART. I move the adoption of the suggestion of Dr. Trask.

The CHAIRMAN. Without objection, it will be inserted.

Dr. HOFFMAN. I believe that the word "nationality" is wrong, politically and scientifically, and that the word "nativity" should be used. There is no use in carrying forward in a new plan of the Public Health Service an obsolete, senseless term. If a man is reported as an American citizen, his nationality is that of an American. If you take his nativity he may be by nativity a Frenchman, German, or Italian.

Dr. TRASK. Any way you do it you are going to get into trouble. It is not a question of the way you would like to do it, but the answers you are going to receive. I think if you say "nationality" the average person will say "German" if the patient is a German residing in the United States and an American citizen; on the other hand, if you say "nativity," you are going to get the place of birth. The person may be of a distinctly Teutonic family, or may be of Semitic origin, and still be born in Portugal. I think it is the lesser of two evils, and it will be for you gentlemen from your experience to answer these questions in the way that will give the more exact information.

I can not agree entirely with Dr. Hoffman. My impression is that you will get better information with the caption standing "nationality" than with it standing "nativity," and derive more nearly the information you want.

Dr. WOODWARD. Would not the word "birthplace" obtain the information you desire?

Dr. TRASK. That is the same as "nativity."

Dr. WOODWARD. That is understood, and that is all you want.

Dr. TRASK. The point is not to determine where a man was born, but whether he is a Teuton or a Scandinavian or a Greek or an Italian. That is the information you want.

Dr. WOODWARD. It seems to me, Mr. Chairman, you are going rather finely into the tissue functions of individuals when you try to ascertain whether the parent of this 5-year-old child was born in America. It hardly seems we are going to get anywhere on a trail

of that sort. The important thing is, practically, whether he is foreign in his instincts, foreign in his habits and in his mode of life.

The CHAIRMAN. That is the point.

Dr. WOODWARD. It is really the social status of the man we are interested in, rather than where he was born, because we want to determine whether the disease prevails throughout certain social groups.

The CHAIRMAN. What is the pleasure of the conference? Shall this word be "nationality" or shall it be "nativity"?

Dr. WOLFF. I move it remain as it is.

Dr. BURKART. I second the motion.

The CHAIRMAN. It has been moved and seconded that the word remain as it is. Without objection it is so ordered, and it will so remain.

Are there any further suggestions regarding this first section? If not, it will be considered adopted as read.

Will you proceed with the second section?

Dr. LAVINDER. "Other members of the family, including boarders, family, and servants."

Dr. BURKART. I move its adoption as read.

Dr. SWARTS. I second the motion.

The CHAIRMAN. Is there any discussion? Without objection it will be so ordered.

Dr. LAVINDER. The next section reads:

SYMPTOMS OF ACUTE STAGE.

Fever: High, moderate, slight, none_____
Headache: Severe, moderate, slight, none_____
Constipation, diarrhea, vomiting, sore throat_____
Pain, distribution_____
Tenderness, distribution_____
Retraction of head, restlessness, drowsiness_____
Pain on anterior flexion of spine_____
Type of case, abortive or paralyzed_____
Date of onset of acute symptoms_____
Date of onset of paralysis_____
Distribution of paralysis at its worst_____
What treatment was employed and with what apparent results—
(*a*) In acute stage_____
(*b*) Subsequent to acute stage, with special reference to restoration of motion_____
What preventive measures were carried out?_____

The CHAIRMAN. What is the pleasure of the conference with regard to this section?

Dr. SWARTS. How about the nasal and throat discharges and unusual perspiration?

The CHAIRMAN. That was a point brought up by Dr. King, I believe. What is the opinion of the conference?

Dr. LAVINDER. It seems to me we are simply multiplying particulars. In certain epidemics other symptoms may be dominant, and if you keep on that way you will get any number of headings in here. You might as well add diarrhea, etc. It seems to me we are simply multiplying details needlessly.

Dr. DRAKE. Just one suggestion occurs to me that I think we overlooked yesterday, and that is the incorporation here of the new diagnostic symptom, pain on anterior flexion of the spine.

Dr. LAVINDER. The blank now has "Retraction of head."

Dr. DRAKE. Well, it fits right well in there.

The CHAIRMAN. "Pain on anterior flexion of spine."

Dr. DRAKE. Yes.

Dr. WOLFF. Mr. Chairman, here is a disease of which we know practically nothing, and we are endeavoring to obtain information. This outline on these slips is to be distributed throughout the United States for the purpose of collating the information we have and distributing it not only to the Public Health Service but to the State health boards and to the medical profession at large. The idea is to determine from this net collation of information just exactly what the usual and the unusual symptoms of this disease may be, in order that a proper diagnosis may be made. A gentleman on the other side of the house, from Indiana, states that his experience has been that a large part of these cases of poliomyelitis are accompanied by sweating, and I think that it is as important to obtain information on that symptom as it is to obtain information about something that was mentioned here by Dr. Draper yesterday. Even though the report may be made a little long, it will be attended with information that will be valuable to the medical profession of the country.

The CHAIRMAN. The chair would suggest that with the circular, in the differential diagnosis which will accompany the blank, these unusual symptoms can be given prominence. It could also be requested that physicians make note of any unusual symptoms.

Dr. ROBERG. Why not leave a blank space for unusual symptoms in the report and give the physician an opportunity to insert of his own initiative and in his own way whatever he chooses?

Dr. BURKART. I notice there is no space for remarks in this circular.

The CHAIRMAN. There is a space for remarks at the bottom of the second page. It says "Remarks. Please state any other facts of interest concerning the case."

Dr. BURKART. Why under the sun will not the intelligent practitioner place it there?

Dr. KING. The true symptoms would be of general interest. It occurs to me that in the circulars we have of the Public Health

Service and those distributed by the State boards of health, together with articles in scientific magazines, it has been stated that the virus of this disease is conveyed by the discharges from the nose or throat. It does not seem that this is an unusual symptom or an unusual condition, and a form which goes from a conference such as this which omits any mention of that most important matter would hardly be considered as covering the entire ground. While I am entirely willing to omit mention of the profuse perspiration as not being a matter of general interest, I do think that this conference should provide some way to report concerning the discharges from the nose and throat.

Dr. MANNING. I think the subject is important enough to include, because there is hardly a case where these symptoms are not looked for, particularly by the general practitioner.

The CHAIRMAN. In just what way would you put that in?

Dr. MANNING. "The presence or absence of nasal discharge."

Dr. BURKART. "Had the patient exhibited unusual nasal and throat discharges prior to the attack?"

Dr. WOODWARD. I do not think that stress should be placed on the nasal and throat discharges any more than on the intestinal discharges, whether yellow or dark, or hard or soft.

Dr. LAVINDER. Dr. Woodward has suggested that we might cut out that latter section, and put it on a separate blank. I do not think we want to multiply clinical data on a chart of this kind.

The CHAIRMAN. The question is now on the adoption of the section as read, which is headed, "Symptoms of acute stage."

Dr. DOWLING. What about lumbar puncture? It seems to me that is the most important consideration, especially with the abortive cases.

Dr. LAVINDER. The spinal puncture is a clinical, laboratory procedure which is secondary to the other features we are endeavoring to incorporate in this blank. I would like to hear from Dr. Frost on this.

The CHAIRMAN. Dr. Frost, what is your opinion regarding placing in this blank the results of spinal puncture?

Dr. FROST. I think it would be very desirable. It had not occurred to us before. This blank was made up several years ago, before spinal puncture had become a regular diagnostic method.

The CHAIRMAN. Where would you put this, on the first page? Would you make it "Results of spinal puncture"?

Dr. FROST. Yes.

The CHAIRMAN. Is there objection to inserting this in the blank? Without objection it will be inserted, "Results of spinal puncture," on the first page.

Dr. WOODWARD. Mr. Chairman, coming to the matter of clinical histories in blanks of this kind, unless we are going to use the

clinical histories that appear on these blanks for the purpose of eliminating cases which according to our own judgment are not poliomyelitis, we are going to get very little benefit from the information furnished. I do not believe there is anyone here who would undertake to revise the diagnosis of the attending physician on the basis of any such history as would appear on this blank. On the other hand, if we are going to collect clinical histories for the purpose of aiding in the diagnosis of the disease, we have to reckon very profoundly with the personal status and experience of the man who files the report. There is no one here, I believe, who would undertake, on the basis of data collected in this manner, to write a treatise on the differential diagnosis of anterior poliomyelitis.

I am of the opinion that the less we require in the way of clinical history on this blank the better it will be, with the understanding that any community that desires to collect clinical information can do so on a separate blank. I much prefer to trust to the clinical histories being collected by the expert diagnosticians in the city of New York at the present time than I do to the information that will be collected by thousands of physicians under varying circumstances throughout the United States, collected on blanks sent out to be filled during the rush of busy hours or turned over to some assistant to complete. I hope we will not unnecessarily extend the clinical history, and it seems to me we might almost with advantage omit it.

Dr. SWARTS. If this is adopted I should like to know how I should answer the question, "Results of spinal puncture? Did it clinically relieve the symptoms by relieving the pressure, or did you find nuclear cells?" How are you going to answer that? What are you going to do with it?

Dr. WOODWARD. Leave it out.

Dr. BURKART. I do not see, then, how you can get much of value. When you get through with this you will have several thousand cases recorded in New York City. If this information is added it will tend to make the blank more complex and defeat the purpose for which it is intended.

Dr. ROBERG. I move that this section of the blank be adopted as reported by the committee.

(The question was taken, and the motion was agreed to.)

Dr. BURKART. That is without the introduction?

The CHAIRMAN. Yes; without the introduction.

Dr. BURKART. Does that include the pain on anterior flexion of the spine?

The CHAIRMAN. That is at the bottom of the first page. Is there a second to this motion?

(The motion was again seconded, and the question being again taken, the motion was carried.)

Dr. BURKART. Does that include the two lines on the other side?

The CHAIRMAN. Yes; that was in the committee's report.

Dr. LAVINDER. The next section is:

OUTCOME OF CASE TO DATE.

Recovery (complete disappearance of paralysis)_____
Improvement, extent of paralysis remaining?_____
Death, date_____

Dr. HOFFMAN. I would suggest that after "death" you say first "immediate cause," and "primary cause," and second, "contributory cause." In the subsequent investigations of this disease it may be possible to ascertain what contributory causes occurred at the time of death. I would further suggest that you add a new line there, asking whether the diagnosis was confirmed by autopsy or not.

The CHAIRMAN. Are there any further suggestions regarding this section?

Dr. WOODWARD. With a view to retaining uniformity of nomenclature and in order to meet as far as possible the suggestions of Dr. Hoffman, I suggest that we might with advantage, under the term "death," use the phrases that are already in use in the standard certificate of death.

Dr. HOFFMAN. Yes; precisely.

Dr. WOODWARD. Insert there the phrases used in the standard certificate of death.

Dr. LAVINDER. That would not make a question at all, but just a direction.

The CHAIRMAN. Yes; just a direction. What does the conference think of this suggestion?

Dr. WATSON. I move its adoption.

(The motion was seconded.)

The CHAIRMAN. It has been moved and seconded that this section be adopted as read, including this question of the phraseology.

Dr. WOODWARD. Of the phraseology of the standard death certificate.

Dr. BURKHART. Just that phraseology.

(The question was taken, and the motion was unanimously agreed to.)

Dr. LAVINDER. The next section is "Contact with previous cases." The first question is, "Had patient been associated with any previous case?" Then there is inserted:

If so, state whether paralyzed or abortive case; give name, address, and date?__
Had any member of the patient's family been associated with any previous case?

If so, state whether paralyzed or abortive. Give name, address, and date.

Had patient or member of family visited any place? _____

2. Had any visitor been to see family? _____

Did patient attend school? _____. Where? _____. Grade? _____.

What were the weather conditions immediately preceding this attack? Hot, mild, cold, wet, dry, dusty; unusual in any respect? _____

Have any infective diseases, respiratory or digestive trouble, or unusual disorder of any kind been unusually prevalent in the community? _____

What animals or fowls were kept on the premises within month preceding attack? _____

Has there been any paralysis of animals or fowls in the vicinity? _____

What preventive measures were carried out? _____

Remarks: Please state any other facts of interest concerning the case_____

Date of filling out report_____

Signed _____, *M. D.*

Address _____.

Dr. WOLFF. Mr. Chairman, on the question, What immediate contact has patient had with domestic animals? I would say that there is a very widespread opinion among medical men that the domestic cat and dog have much to do with the spread of the disease, and in a circular of this character we would obtain an enormous amount of information in that regard which might turn out to be of inestimable value.

The CHAIRMAN. The Chair will entertain a motion for the adoption of this section.

Dr. BURKART. I move that the section be adopted, with the amendments inserted, as read.

Dr. WATSON. I second the motion.

(The question was taken and the motion was agreed to.)

Dr. SWARTS. The report, as a whole, now has to be adopted. I move that it be adopted as a whole.

(The motion was seconded, and, the question being taken, the motion was agreed to.)

(The blank which the conference finally adopted was as follows:)

[Treasury Department, Public Health Service, August, 1916.]

State of_____ Year_____ Case No_____

CASE REPORT OF POLIOMYELITIS (INFANTILE PARALYSIS).

(Form adopted by the conference of State and Territorial health authorities with the Public Health Service, Aug. 18, 1916.)

1. Patient's name_____; age_____; sex_____; color_____
2. Nationality of father (*a*)_____; of mother (*b*)_____
3. Occupation of father (*a*)_____; of mother (*b*)_____
4. Residence (post office)_____; county_____
5. Did patient live in city?_____; village?_____; country?_____
6. If in country, state distance from center of nearest town or village_____

7. Status of family: Well-to-do_____; moderate_____ poor_____
8. Sewage disposal: Flush closet_____; cesspool_____; privy_____
9. General sanitary conditions on premises: Excellent__; good__; fair__; bad__
10. Previous general health of patient: Excellent_____; good_____; poor_____
11. Had patient suffered from any illness, indisposition, or accident within a month prior to this attack?_____
12. Nature of illness or accident_____

OTHER MEMBERS OF FAMILY (INCLUDING GUESTS, BOARDERS, AND SERVANTS).

13. Children: Males (age of each)_____; females (age of each)_____
14. Adults: Males, number_____; females, number_____
15. Were there any other cases of sickness in the family within one month before or after this attack?_____
16. Give name, age, sex, date, and nature of each case_____

SYMPTOMS OF ACUTE STAGE.

17. Fever: High_____; moderate_____; slight_____; none_____
18. Headache: Severe_____; moderate_____; slight_____; none_____
19. Constipation____ 20. Diarrhea____ 21. Vomiting____ 22. Sore throat____
23. Pain_____; distribution_____
24. Tenderness_____; distribution_____
25. Retraction of head_____ 26. Restlessness_____ 27. Drowsiness_____
28. Pain on anterior flexion of spine_____
29. Date of onset: Of acute symptoms (*a*)____; of paralysis, if any (*b*)____
30. Distribution of paralysis at its worst_____
31. What treatment was employed, and with what apparent results?
    (*a*) In acute stage_____
    (*b*) Subsequent to acute stage_____
32. What preventive measures were carried out?_____

OUTCOME OF CASE TO DATE.

33. Recovery (complete disappearance of paralysis)_____
34. Improvement_____; extent of paralysis remaining_____
35. Death_____; date_____
    (Follow standard death certificate in stating cause of death.)

CONTACT WITH PREVIOUS CASES.

36. Had patient been associated with any previous case?_____ If so, state whether paralyzed or abortive case_____; give name, address, and date of case_____

37. Had any member of the patient's family been associated with any previous case?_____ If so, state whether paralyzed or abortive_____; give name, address, and date of case_____
_____
_____

38. Had patient or any member of family visited any other community within one month prior to attack?_____ If so, give places visited and dates_____
_____

39. Had patient's family received any visitors from other communities within one month prior to attack?_____ If so, from what places, and when_____
_____
_____

40. Did patient attend school?_____; where?_____; grade_____

41. What were the weather conditions immediately preceding this attack? Hot_____; mild_____; cold_____; wet_____; dry_____; dusty_____; unusual in any respect_____

42. Have any infective diseases, respiratory or digestive troubles, or unusual disorders of any kind been unusually prevalent in the community?_____

43. What animals or fowls were kept on the premises within one month preceding attack?_____

44. Had there been any paralytic disorders of animals or fowls in the vicinity?
_____

REMARKS.—Please state any other facts of interest concerning the case:

_____

Date of filling out report_____

Signed _____, *M. D.*

Address _____.

The CHAIRMAN. I would suggest to the chairman of this committee that there is one point on which the committee has not reported, and that is as to the uniformity in stating the age period.

Dr. LAVINDER. That was in the other blank on the age period. There are two blank forms which have not come down.

The CHAIRMAN. Will you report on that?

Dr. LAVINDER. When it comes down; yes, sir.

Dr. RANKIN. Mr. Chairman, how long will it be before the Secretary of the State board of health will get a copy of this form?

The CHAIRMAN. I think we can send out typewritten copies almost immediately.

Dr. RANKIN. We would like to have them immediately.

The CHAIRMAN. And of course printed copies will be sent out later.

Dr. RANKIN. Then a motion is unnecessary.

The CHAIRMAN. We will arrange to have that done immediately. We wish all of the members to fill out this report on poliomyelitis before they leave.

It was suggested that a standing committee on the collection of poliomyelitis statistics be appointed by the conference. What is

the wish of the conference regarding this suggestion? Does the conference wish a standing committee appointed on the collection of poliomyelitis statistics?

(There was no response.) Evidently the conference does not. We will consider the matter closed.

Dr. WOODWARD. Mr. Chairman, I do not believe that we need a committee on poliomyelitis statistics, but it seems to me we might well have a committee on poliomyelitis. I move that the chairman appoint a standing committee of five to study the subject of poliomyelitis and to report to the conference from time to time as it may be convened.

Dr. SWARTS. I second that motion.

The CHAIRMAN. It has been moved and seconded that the chair appoint a committee for the purpose of studying and reporting from time to time to the conference on the subject of poliomyelitis. Is there any discussion?

(The question being taken, the motion was agreed to.)

Dr. LAVINDER. These other two blanks are put on one page and they will be properly arranged later. This gives the distribution of cases by ages, sources, and by States, counties, and so on. It will go on two forms, presumably. I will distribute these copies.

The CHAIRMAN. The conference will now receive the report of the committee on measures to prevent the intrastate and interstate spread of poliomyelitis. Dr. John S. Fulton.

REPORT OF THE COMMITTEE ON INTERSTATE AND INTRASTATE SPREAD OF POLIOMYELITIS.

Dr. FULTON. Mr. Chairman and gentlemen of the conference, your committee appointed yesterday to consider the interstate and intrastate spread of poliomyelitis met the afternoon of the same day and undertook to make as condensed a statement as it could, covering the vital points of the situation, but by no means exhausting the details of prevention of the spread of the disease. The committee has put forth certain minimum requirements and certain statements of principles and of practices. At the present moment only six copies of the report are available, but additional copies are being prepared and will soon be ready for distribution. I will ask you to pay very close attention to the reading:

REPORT OF THE COMMITTEE ON MEASURES FOR THE PREVENTION OF INTERSTATE AND INTRASTATE SPREAD OF POLIOMYELITIS.

I. It is the sense of this committee that the first step proper to be taken by a State health authority, believing its territory to be in danger of an invasion by poliomyelitis from another State or part of a State, is to call the attention of

the United States Public Health Service to the situation believed to be dangerous, and to request the United States Public Health Service to take whatever steps are necessary to prevent the interstate spread of poliomyelitis.

II. The necessary steps, ordinarily to be taken by the United States Public Health Service in such a contingency are believed to be:

(1) Investigation of the infected area.

(2) Notification concerning the removal of persons, 16 years of age or under, from an infected area to a named point of destination in another State, said notification to be addressed in every case to the State health authority of the State of destination.

(3) The forms of notification and of health certification and of permits to travel should include the following information and specifications, with such additional information and specifications as the United States Public Health Service deems necessary:

> Identification of each traveler, the exact location of present or usual residence, and record of premises as to freedom from poliomyelitis during the preceding three months; or as to latest date of infection if less than three months; or as to renovation or cleansing of premises after infection.

(4) Permits to travel shall be void unless the journey shall begin within 24 hours after issue of the permit.

(5) Single permits shall not be issued for several persons, except for family or household groups coming from the same domicile.

(6) The collection of fees, by health officials, from applicants for permits, whether resident or nonresident, should not be permitted.

(7) The certificates of private physicians will not alone be a sufficient basis for the issue of a permit to travel. Permits for interstate travel will be based on medical examination.

(8) Permits for interstate travel should be signed by an officer of the United States Public Health Service, or by the State health officer, or by an officer authorized by the State health authority.

III. The committee disapproves quarantine by one State against another State, or quarantine by one community against another community in the same State. It is believed that the Federal Government, through the United States Public Health Service, can perform all the duties of notification and certification required in interstate relations in case of unusual prevalence of poliomyelitis, and that State health authorities can and should perform like services as between communities in the same State during unusual prevalence of poliomyelitis.

IV. It is recommended that all cases of poliomyelitis should be reported immediately to the local health authorities and to the State health authorities, and that State health authorities make weekly reports to the United States Public Health Service of all cases of poliomyelitis. The United States Public Health Service is asked to furnish general reports weekly.

V. It is recommended that all persons 16 years old or under, with a clean bill of health, and removing from an infected area or district to another locality should be kept under medical observation daily for two weeks from the date of the certificate.

VI. It is believed that the period of isolation of a case of poliomyelitis should be not less than six weeks from date of onset.

VII. The isolation of cases of poliomyelitis should be stringent isolation of the sick person with attendant or attendants, in a properly screened room or rooms, with disinfection at the bedside of all bodily excretions. Wherever it is possible the removal of patients to a hospital is greatly to be preferred to isolation in a private house or apartment.

VIII. In case of death from poliomyelitis the funeral should be strictly private.

IX. Wherever poliomyelitis is unusually prevalent, assemblages of children in public places should be prohibited.

X. During unusual prevalence of poliomyelitis, schools should not be opened without thorough medical supervision by a health authority. When schools are opened, beginning should be made with high schools, and proceeding to lower age groups no more rapidly than complete medical examinations can be made.

XI. Because of the existence or unknown carriers of the infectious virus of poliomyelitis and because the infectious virus is present in the body discharges of such persons, therefore all measures to prevent contamination by human excreta or other bodily discharges, the suppression of the fly nuisance, prohibition of the common drinking cup, and a general educational campaign for cleanliness and sanitation, with particular instruction of parents and children concerning personal hygiene, especially of the mouth and nose, are strongly urged by the committee.

XII. To aid in preventing the spread of poliomyelitis, common carriers should instruct their agents and ticket sellers, by direct order as well as by public notices, when poliomyelitis is unusually prevalent, that travelers with children of 16 years or under must be provided with a health certificate as detailed in another section of this report.

XIII. The epidemic prevalence of poliomyelitis in certain States at this time indicates a probability of epidemic prevalence next year in States not gravely affected at the present time. It is believed that the measures here recommended should be continued in operation at least until such time as the incidence of the disease has subsided to or below its usual level.

JOHN S. FULTON.
T. D. TUTTLE.
H. M. BRACKEN.
ENNION G. WILLIAMS.
CHAS. E. BANKS.

Dr. FULTON. This report was framed, Mr. Chairman, with the hope that it would not be accepted without thorough and free discussion, and also in the hope that if possible it will be adopted without amendment, or at least without extensive amendment. The committee, I think, has undertaken to come right down to basic principles in solving the vital problem that confronts us. Some things are desirable to be done in extension of practices here recommended, but I think certainly not in abbreviation of the details outlined.

Dr. BLACK. Mr. Chairman, I move that the report be adopted as read.

(The motion was seconded.)

Dr. COLLINS. Under the head of distribution of the disease a question arises which has not been mentioned, I believe, and that is as to the shipping of dead bodies from point to point; whether that should be allowed, and if allowed, under what conditions.

Dr. BURKART. That is provided for in every State through an embalmers' law.

Dr. COLLINS. Yes; but in this particular disease it is not.

Dr. SWARTS. We have not time this morning to go into that discussion. A good many of us want to get away at an early hour, and if we take up the subject of the transportation of the dead there is no telling how long we will be here. I move that the question be left until the next conference.

Dr. BLACK. While I moved the adoption of this report and am thoroughly in favor of it, there are certain matters in regard to which I should like to know what action will be forthcoming. In certain ports of entry as many as 2,000 New York children have arrived in one week from infected areas. We recommend examination, registration, and observation; but it is obvious that this is impossible for 20,000 or 30,000 or even 10,000 persons without great expense. I think many of the local authorities have the power to adopt more stringent regulations than are adopted by the State board of health. Now, if they decide to act without the advice of the State board of health, what is the State to expect from the Federal authorities if they should take such action?

Dr. WOODWARD. I move that the report be read section by section and discussed in that manner.

Dr. RANKIN. I second that motion.

(The question was taken, and the motion was agreed to.)

The CHAIRMAN. It is so ordered. Dr. Drake will read the first section.

Dr. DRAKE. The first section reads:

1. It is the sense of this committee that the first step proper to be taken by a State health authority believing its territory to be in danger of an invasion by poliomyelitis from another State or part of a State is to call the attention of the United States Public Health Service to the situation believed to be dangerous and to request the United States Public Health Service to take whatever steps are necessary to prevent the interstate spread of poliomyelitis.

I move the adoption of that section.

(The motion was seconded, and the question being taken, the motion was agreed to.)

The CHAIRMAN. It is carried. The second section reads:

II. The necessary steps ordinarily to be taken by the United States Public Health Service in such a contingency are believed to be:

(1) Investigation of the infected area.

(2) Notification concerning the removal of persons, 16 years of age or under, from an infected area to a named point of destination in another State, said notification to be addressed in every case to the State health authority of the State of destination.

(3) The forms of notification and of health certification and of permits to travel should include the following information and specifications with such additional information and specifications as the United States Public Health Service deems necessary:

Identification of each traveler, the exact location of present or usual residence, and record of premises as to freedom from poliomyelitis during the preceding three months; or as to latest date of infection if less than three months; or as to renovation or cleansing of premises after infection.

(4) Permits to travel shall be void unless the journey shall begin within 24 hours after issue of the permit.

(5) Single permits shall not be issued for several persons, except for family or household groups coming from the same domicile.

(6) The collection of fees, by health officials, from applicants for permits, whether resident or nonresident, should not be permitted.

(7) The certificates of private physicians will not alone be a sufficient basis for the issue of a permit to travel. Permits for interstate travel will be based on medical examination.

I am not clear as to that.

(8) Permits for interstate travel should be signed by an officer of the United State Public Health Service, or by the State health officer, or by an officer authorized by the State health authority.

Dr. BURKART. What is the point you said you were not clear upon?

The CHAIRMAN. It is not entirely clear as to the latter part of subsection 7, which says, "Permits for interstate travel will be based on medical examination." Does that mean really a medical examination?

Dr. FULTON. I would be glad to hear anybody suggest a substitute for that.

The CHAIRMAN. To give a man a medical examination requires time. I would suggest that it should be medical "inspection" instead of "examination." I would be glad to hear from Dr. Banks on this subject.

Dr. BANKS. The idea we had in mind was that the officer issuing the permit should make the inspection or examination.

The CHAIRMAN. Is it agreeable to the committee to substitute "inspection" for "examination"?

Dr. BRACKEN. What were the words, "medical inspection"?

Dr. BANKS. They were "medical examination." A medical inspection is an examination.

Dr. FULTON. Dr. Tuttle, how does this strike you, "inspection"?

Dr. TUTTLE. All right.

The CHAIRMAN. Is there further discussion of this subject?

Dr. RANKIN. I move the section be adopted.

The CHAIRMAN. Is there any discussion?

Dr. YOUNG. I do not know how many tourists we receive, but we have about 20,000. This would throw quite a large burden upon the health officer, to do all the work of making out certificates, and he receives nothing for it.

Again, in the northern and central parts of our State in the wild woods toward Moosehead Lake, we have two very large hotels. There

is just one physician near there. The country is wild, unorganized, and there are no health authorities. The doctor has a commission from the State board of health as a sort of sanitary watchdog or inspector. Supposing that I should delegate this man up there at Kineo to issue certificates, it would throw quite a burden of work upon him, and he receives no fee. I would suggest whether it might not be better, instead of making an absolute prohibition of taking fees for this service, to say what the maximum fee shall be, perhaps 25 cents.

Dr. BURKART. Oh, no.

Dr. FULTON. I should like to say that I would object to any change in the verbiage, for this reason. I think that an amendment of that sort would imply a greater force in this whole document than actually exists. In some parts of the country, abuses are sure to eventuate from the collection of fees. We are not writing here a law that is going to be approved by the governor of a State, but we are expressing an opinion, and a very decided opinion, about the collection of fees. I do not conceive that that would in any wise embarrass Dr. Young in the very peculiar and unusual situation he has there, and if we should attempt to make provisions here for very unusual circumstances, outside of extreme probability, we will meet with all sorts of difficulty.

Dr. KERR. I would like to suggest that at some time during the discussion the act of February 15, 1893, be read.

The CHAIRMAN. The chair will read that act now, and there are copies of it here available for distribution. Beginning on page 8 of the interstate quarantine regulations, section 3 of the act reads as follows:

SEC. 3. That the Supervising Surgeon General of the Marine-Hospital Service shall, immediately after this act takes effect, examine the quarantine regulations of all State and municipal boards of health and shall, under the direction of the Secretary of the Treasury, cooperate with and aid State and municipal boards of health in the execution and enforcement of the rules and regulations of such boards and in the execution and enforcement of the rules and regulations made by the Secretary of the Treasury to prevent the introduction of contagious or infectious diseases into the United States from foreign countries, and into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia; and all rules and regulations made by the Secretary of the Treasury shall operate uniformly and in no manner discriminate against any port or place; and at such ports and places within the United States as have no quarantine regulations under State or municipal authority, where such regulations are, in the opinion of the Secretary of the Treasury, necessary to prevent the introduction of contagious or infectious diseases into the United States from foreign countries, or into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, and at such ports and places within the United States where quarantine regulations exist under the authority of the State or municipality which, in the opinion of the Secretary of the Treasury, are not sufficient to prevent the introduction of

such diseases into the United States, or into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, the Secretary of the Treasury shall, if in his judgment it is necessary and proper, make such additional rules and regulations as are necessary to prevent the introduction of such diseases into the United States from foreign countries, or into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, and when such rules and regulations have been made they shall be promulgated by the Secretary of the Treasury, and enforced by the sanitary authorities of the States and municipalities, where the State and municipal health authorities will undertake to execute and enforce them; but if the State or municipal authorities shall fail or refuse to enforce said rules and regulations the President shall execute and enforce the same and adopt such measures as in his judgment shall be necessary to prevent the introduction or spread of such diseases, and may detail or appoint officers for that purpose.

The remainder of the section is not pertinent to the subject under discussion, and will therefore not be read.

Dr. PORTER. Mr. Chairman, while it is a fact that this section may apply in a general way to communicable diseases throughout the United States, it is also a fact that this law was passed after the great epidemic of yellow fever; I think it was in 1905——

The CHAIRMAN. This was in 1893.

Dr. PORTER. Well, then, in 1888.

The CHAIRMAN. Yes.

Dr. PORTER. I know in a general way it is applicable to all communicable diseases, yet it was especially directed at that time at yellow fever. If it is true that it can be made to apply to all communicable diseases from one State to another, then there is no work for this conference to do. The whole matter is in the hands of the Public Health Service to take charge of.

Dr. BURKART. Is it not a general inference of the common law that in the absence of a prohibitory enactment this law stands? There is nothing which says that it shall not apply to all dangerous communicable diseases. If there is nothing said to the effect that it shall not apply, certainly it must apply.

Dr. TRASK. The law of 1893 provided that the existing regulations of States and municipalities should be examined to ascertain whether they complied with a given standard of efficiency. This implied a degree of confidence in and the placing of responsibilities upon the State and local authorities. The same law provides that the State and municipal authorities shall enforce any regulations which may be promulgated to prevent the interstate spread of disease if they will do this voluntarily. This also shows the important part which it is intended the State authorities shall take in the enforcement of the provisions of the law and of any regulations which may be made pursuant thereto.

In regard to the law of 1902, which specifically provides for conferences of the State health authorities with the Public Health Service, there seems to be no reason to doubt that those who drafted the law and the Congress which adopted it were conversant with the provisions of the act of 1893 and the provisions of its section 3, and that the conferences were provided for in the later law with full knowledge of and having in mind the provisions of the act of 1893. These points are brought out because it is believed that they indicate that the provisions of the section read by the chairman and the provisions of subsequent laws emphasize the importance of this conference and its necessary relation to the interstate control of disease, and particularly to the discussion of such matters as that for which this conference has been called.

Dr. WOODWARD. I move that we return to the regular order.

The CHAIRMAN. The Chair was about to remark that we are straying from the subject of discussion. There is a motion before the conference for the adoption of section 2, and this is under consideration. Gentlemen will please confine their remarks to the discussion of the motion before us.

Dr. DRAKE. I rise for information. I should like to know what the life of each of those certificates would be? What is the period of time that the certificate is good for, for purposes of travel?

The CHAIRMAN. It is good until the end of the journey.

Dr. FULTON. Do you mean the certificate or permit?

Dr. DRAKE. The permit to travel.

Dr. FULTON. The beginning of the journey must occur within 24 hours from the date of the issuance of the certificate. The certificate itself is to be sent by the Public Health Service directly to the health officer at the point of destination, after which time the health authorities assume their function. As to the life of that certificate, it is certainly not intended that the certificate shall be used for more than one journey. As a certificate, it is invalid when the journey is completed.

Dr. DRAKE. I should also like to ask how this requirement relates to suburban travel. There are several hundred thousand people who travel to suburban points every day. Are they going to be required to have certificates for that purpose? Some of those communities are infected points.

Dr. FULTON. That is one of the things that the committee thought it ought not to venture into, the handling of commuters, week-end excursionists, and the movements of persons engaged in certain industries, such as the canning industry. This committee did not think it was able to handle questions of that sort. Those are matters which, we think, should be left untouched, because they can be decided much better by local authorities.

Dr. DRAKE. Then one other question I wish to ask——

Dr. BANKS. In relation to the manner in which commuters leaving New York City are cared for, it is by issuing seven-day certificates to boys—they are mostly boys who are engaged in office work—between Jersey City and points in New York City. We issue to them a travel card lasting one week.

The CHAIRMAN. The conference will note that this applies to children under 16 years of age, and not to regular adults.

Dr. DOWLING. There are a number of people who go from Bay St. Louis to New Orleans. Then there are many people who go from New Orleans on Friday and come back on Monday evenings.

Dr. DRAKE. Inasmuch as a large number of the health authorities in the small communities in our State are not medical men, and therefore would not be considered competent to make this health inspection and issue the certificate, another difficulty arises.

Dr. BRACKEN. This certification is necessary only from those places where infantile paralysis prevails, so that you would not have to appoint many thousands for a State. The whole intent of this clause is to protect the State officials in doing their business. The point is that if we do not put in there State or local health officers we will encourage certification by a lot of inferior men, men whose certificates we would not want to see accepted, interstate or intrastate.

Dr. DRAKE. One or two other points. Is it the purpose of this conference to issue a uniform type of certificate, or is it left to the individual States to issue the certificates they see fit, incorporating the items recommended by the committee?

Dr. FULTON. It is confidently believed that with the adoption of these regulations a uniform certificate, recognizable at a glance as authoritative, will come into existence. We could specify that it should carry a seal of an authoritative character as a guaranty, I think, as much as it is right for this conference to undertake to guarantee them. Such was our intention.

Dr. DRAKE. Would it not be well for the United States to issue its own certificate? Then, one other question. Of course this is only where there is a child under 16 years of age. I believe it is generally assumed or generally acknowledged that the adult may be a carrier as well as a child. Are you going to permit adults from infected premises to travel on health certificates?

Dr. FULTON. The committee accepted the limit of 16 years, since it is current practice at this time. It in no way restrains the powers or the rights of local authorities to make a limit beyond that if they desire.

Dr. FROST. Mr. Chairman, I certainly hesitate to throw any further complications into such an intricate situation as this, but the question that has just been raised does seem pertinent. I think this

conference, in adopting any regulations which require so much work and machinery, might look into what may be accomplished in the prevention of the spread of the disease. Now, if we are working on the assumption that poliomyelitis is a contagious disease, an inevitable corollary, therefore, is that we have adult carriers who are the major factors in the spread of the infection. I think the facts and figures will show that the exclusion of children under 16 will cover only a very small part of the problem. They constitute only a small fraction of the total travel. We have no reason to believe that they are more dangerous as carriers than adults; and how much of the problem are we really covering when we are excluding children under 16? I recognize, of course, that there are certain considerations of policy and practicability; but might not that be a subject, anyhow, for consideration and discussion?

Dr. WOODWARD. It seems to me, Mr. Chairman, that the reason stated by Dr. Fulton for adopting the 16-year limit is the very reason why we should not adopt it. Dr. Fulton says we are to adopt it because it is current practice. We know it is current practice; but who is there here who can show that the issuance of these certificates based on an age of 16 years as a limit has prevented the spread of the disease in the least? I do not believe there is any evidence that it has done so; and if that is the case, we must either have the courage of our convictions or stultify ourselves before the public. We must have some sound basis for the age limit. Dr. Frost has already said that the number of children in interstate traffic is small. There is another reason why we may say, relatively, that the children are a safer element in the travel problem than adults; that is, by reason of their susceptibility to the disease. The child in interstate travel comes down with the disease, and the condition is recognized and the child is quarantined, while the adult is never discovered. I believe the age limit ought to be abandoned altogether, and we ought to enforce these regulations against the entire body of the community or ought not to undertake to enforce them at all.

Dr. RANKIN. That is right, exactly.

Dr. FULTON. As chairman of the committee, I do not feel in anything like the degree Dr. Woodward has expressed, that we should as one alternative do nothing, or as the other, take off the age limit entirely. We have proceeded upon the basis of experience in this present epidemic, and certainly I would not dare assert, as it has been asserted here this morning, that the specification of this limitation of the age of 16 has been of no profit. I think a man makes an unwarrantable assertion in saying such a thing as that. I conceive that this limitation has done good and will do good, and I will say also that I think there is no sound reason for raising

the limit at the present time. The committee does not intend to make any departure from that which experience seems to us to have justified, and which certainly has the sanction of authority. It leaves this conference quite free to extend the age limit if it desires. In my own judgment this extension is not warranted, because it would result in some of the confusion which we are trying if possible to avoid. I do not feel that this section would be improved by altering the age limit. I am also inclined to think that there is some tendency to exaggerate the potentialities of adult carriers, and I consider that the restriction of the movements of persons who are at the susceptible age the most important desideratum. I also call attention to the extreme difficulty of recognizing adult carriers.

Dr. HOFFMAN. I rise with great reluctance, but I feel very strongly with Dr. Woodward that the age limit of 16 years is arbitrary, unjustifiable, and can not be sustained. I have here references of 1,200 cases that show there were practically no deaths whatever above the age of 14 years. It shows there were more deaths at 14 than at 15, 16, or 17. Why should the line be drawn at 16 years? We have to admit that it does not make much difference whether the age limit is 7, 8, 9, 10, or 11, or 12. I have a boy now held in a two weeks' quarantine, who went from New Jersey to New York. We traveled without interference under a certificate, and nobody even looked at the document. That certificate is over a week old, and it is not stamped, and it does not mean anything except that it has a place upon it for a stamp. Yet that boy of mine is being kept at home and can not travel because he is not quite 16 years of age. I suggest that you draw the line at 14 years of age if you draw it at all.

Dr. LEAKE. I support strongly what Dr. Hoffman says, that there is no reason for drawing an age limit.

Dr. RANKIN. Mr. Chairman, I am in full sympathy with what Dr. Woodward said, and also with what Dr. Hoffman has said. Now, when the health officer goes in and recommends certain measures, and people adopt those measures, they look to that officer for results. I, for one, do not believe that the present method of handling this epidemic is worth anything, hardly. I do not know what the literature will show, but they had an epidemic several years ago in New York when few of these measures were taken and they did not have near the susceptibility that they have to-day, with all the measures adopted. I expect that an investigation of all the epidemics in the country would show that there is no higher incidence where practically nothing is done than in those cases where they take all these pains.

It amounts to this, that I must go back to the people and say to them, "I can not control this disease without the control of all possible carriers, and that means 400 or 500 people in these towns up here. Do you folks want me to do that? If you do, pass this law. If you do not, understand that I wash my hands of it." That is just the situation. We go and recommend something that does not get results; and what health officer in this audience would feel easy with the present methods of managing infantile paralysis? Either that, or we go before those people and say, "Here, we can not control the disease because there are more carriers than sick people. Now, the only possible way for you folks—not me—to control this outbreak is to quarantine all of them, all possible suspects, adults, and children alike." As the situation now stands in this country the people are placing the responsibility of failure to stop the disease upon the health officers, and that is what they have a right to do, if we keep on with the present methods. We have got to tell them that those methods are not getting results, and that the only methods that will get results are very stringent and radical, thus throwing upon them the responsibility of declining the more radical measures.

Dr. Banks. Mr. Chairman, so far as my experience goes we are under no delusion that the notification system which we have adopted will prevent the spread of poliomyelitis, unless the health officers do their duty after we have notified them. That is the purpose of the whole system, and the assumption of an arbitrary age is one that can be changed if deemed proper. We said 16. If it is the wisdom of the conference that it should be 14, that is to be accepted. This system is not one of quarantine; it is merely one of regulation of traffic, and to undertake the control of adults would involve practically a quarantine of the entire country. You have got to stop somewhere in a system of this sort which singles out a class of persons who are affected directly by the disease.

Dr. Woodward. But, Mr. Chairman, does not Dr. Banks see that if it is safe for an adult to come from a sick room and go into interstate travel without restriction, or to come from an infected house and go into interstate travel without restriction, we must absolutely lay down the same rule with respect to his conduct in his own community? We can not say to this man who is living in a placarded house, "Come, you are 16½ years old. Take this car and go down to this picnic," simply because he is over 16 years old. If we undertake to fix the limit at 16 for travel, we must fix it at that age for all purposes.

Dr. Banks. Mr. Chairman, it seems to me that the local health regulations regarding infected places and infected families cover such instances. Persons coming from infected houses can not go out without defiance of the law.

Dr. WOODWARD. That is the point. The disease recognizes no difference between interstate regulations and local regulations, and we can not logically waive the age limit for national purposes and establish it for local purposes. Such an assumption would be utterly unjustifiable on any scientific principle or logical basis.

Dr. FULTON. Do you state that as a lawyer, Dr. Woodward? I do not conceive that the local authorities are limited in their power to make regulations as to internal movements. I should not hold that view myself as a health officer.

Dr. WOODWARD. I thought I tried to make it definitely understood that it was within the power of the local boards to do.

Dr. FULTON. Yes.

Dr. WOODWARD. And I think the record will sustain me in that. The point I make is that, whatever their power may be on the basis of the law, that on the basis of facts they will find nothing to sustain them. They have local authority to do a great many things that science and logic do not justify.

Dr. KERR. Mr. Chairman, it seems to me I might perhaps interpret for the bureau the object of the work that is going on. There appears to have been some misunderstanding of the proposed or presumed value of the work. We start out in public-health work with the assumption that knowledge is a valuable thing—knowledge of the geographic occurrence and prevalence of disease. We are collecting death and case reports from all over the country, and that has been a practice for many years. We are not doing it with the object of guaranteeing that we, or the health officers cooperating with us, will relieve the people of the presence of disease. I think all the officers here feel that the work at New York is just a little more acute method of furnishing information to State and local health authorities for such use as it is possible in the present state of our knowledge for them to make of it. It must not be assumed in furnishing these certificates that we guarantee the persons free from poliomyelitis.

As I understand it, the certificates mean simply that those persons to whom they are issued have come from a certain place and are going to another place, and this information is furnished in order that the local health authorities may be on the lookout. I think that we should be entirely frank with ourselves and with the public as to what we expect to accomplish. In my judgment the situation is not as serious as it might be, but we have got to face it together, and we must take the public into our confidence and make the best of it. I feel that the question at the present time, therefore, whether a frank system of notification, such as has been inaugurated and carried on thus far, is of service to State and local authorities or not, is the primary question to be settled here. If it is not of service, it seems

to me it would not be a good plan for this country to adopt it generally. If it is a good plan, then, by all means it seems to me that the notification system should include all infected localities, and be participated in by the Federal, State, and local authorities who are a part of the national health service. For that reason I suggested that the section of the law pertaining to this subject be read.

Dr. PARLETT. Mr. Chairman, by restricting the travel of those under 16 years of age, do we not at least protect those at the susceptible age from possible contraction of the disease, and those with whom they come in contact at the point of destination who are of susceptible age? Do we not, therefore, at least to some extent, modify the spread of disease?

Dr. BRACKEN. Mr. Chairman, it seems to me we are doing a lot of talking and are not getting anywhere. There are just a few words concerning the age limit that you are quarreling over. It seems to me, therefore, that some one should move to take out the age limit entirely, or to lower the limit. I am on the committee, and before I came down here Dr. Fulton said if I was not on the committee I would be raising a row all the time, so I will try to keep quiet.

Dr. SWARTS. I understand Dr. Woodward's point to be that the certificate will say, "This is to certify that Mary Smith, age 6 years, is free from infantile paralysis," and then that its parent, age 62, may be a carrier.

Dr. PORTER. How is he to know?

Dr. SWARTS. That is it—how is he to know? Therefore I would certify, "I can not certify as to the father. As to the father, you take your chances."

Mr. BANKS. I would like to suggest that in limiting the travel of children under 16 you also limit the parents and guardians who go with them. It is very rare that children travel alone.

Dr. BOUDREAU. I would like to protest against the expense that will be placed upon State departments of health if these notifications are sent to them and have to be forwarded to the health officers in the different localities. I think they should be forwarded to the State department of health, and the State department of health can discriminate and see that the notifications are looked after when the local health officer is not efficient. I know we have not the personnel in our State to look after that kind of work.

Dr. BRACKEN. I would ask if the doctor has been in official work very long; and if he has, how he would like discriminating between Dr. A. and Dr. B., 6 miles apart? I think he would find himself in a rather unpleasant situation.

Dr. WOODWARD. I would move to amend this section by striking out, under Section II, the words "sixteen years of age or under."

(The motion was seconded.)

Dr. BRACKEN. How will it read then?

The CHAIRMAN. It will then read:

Notification concerning the removal of persons from an infected area to a named point of destination in another State, said notification to be addressed in every case to the State health authority of the State of destination.

You have heard the motion. Are you ready for the question?

Dr. PARLETT. What is the purpose of it?

The CHAIRMAN. The purpose is to cover all persons.

Dr. PORTER. Then, do I understand that all persons living in New York City, of whatsoever age, must get a certificate?

The CHAIRMAN. It says, "from an infected area."

Dr. SWARTS. What constitutes an infected area, one case in a hundred?

Dr. FULTON. Oh, my; we do not go into that.

The CHAIRMAN. Are you ready for the question?

Dr. WILLIAMS. I would like to move as a substitute, that instead of leaving that out we insert "fourteen years or under"; so that we have three propositions, 16 or under, 14 or under, or to omit mention of any age limit. It seems to me it is impracticable to furnish certificates for everybody traveling out of New York City.

The CHAIRMAN. It has been moved and seconded that we substitute for the motion of Dr. Woodward the insertion of the words "fourteen years of age or under," so that subsection 2 will read, "Notification concerning the removal of persons 14 years of age or under," and so forth.

Are you ready for the question? This is, on the substitute for Dr. Woodward's motion.

(The question was taken, and the motion was not agreed to.)

The CHAIRMAN. The motion is lost. The motion now comes on deleting the words "16 years of age or under"; that is the motion of Dr. Woodward.

(The question was taken by a rising vote, and the motion was not agreed to.)

The CHAIRMAN. The motion is lost. The question now before the conference is on the adoption of Section II as a whole. Are you ready for the question?

(The question was taken, and the section was adopted.)

The CHAIRMAN. Section III of the report reads as follows:

III. The committee disapproves quarantine by one State against another State, or quarantine by one community against another community in the same State. It is believed that the Federal Government, through the United States Public Health Service, can perform all the duties of notification and certification required in interstate relations, in case of unusual prevalence of poliomyelitis; and that State health authorities can and should perform like services as between communities in the same State during unusual prevalence of poliomyelitis.

Dr. RANKIN. I move that the section be adopted.

(The motion was seconded.)

The CHAIRMAN. Is there any discussion? Are you ready for the question?

(The question was taken, and the motion was agreed to.)

The CHAIRMAN. Section IV reads as follows:

IV. It is recommended that all cases of poliomyelitis should be reported immediately to the local health authorities and to the State health authorities, and that State health authorities make weekly reports to the United States Public Health Service of all cases of poliomyelitis. The United States Public Health Service is asked to furnish general reports weekly.

(It was moved and seconded that Sec. IV be adopted, and the question being taken, the motion was agreed to.)

The CHAIRMAN. Section V reads as follows:

V. It is recommended that all persons 16 years old or under, with a clean bill of health, and removing from an infected area or district to another locality, should be kept under medical observation daily for two weeks from the date of the certificate.

(It was moved and seconded that Sec. V be adopted, and the question being taken, the motion was agreed to.)

The CHAIRMAN. Section VI is as follows:

VI. It is believed that the period of isolation of a case of poliomyelitis should be not less than six weeks from date of onset.

Dr. SWARTS. I move that it be amended by inserting "four weeks" for "six weeks," just to get an expression from the floor.

Dr. RANKIN. As a compromise, I move to make it five weeks.

Dr. BURKART. I move the adoption of the section as read.

Dr. SWARTS. I move that the word "six" be changed to "four," so that it will read "four weeks," as between the maximum and the minimum. It is made eight weeks in New York.

Dr. GARRISON. I second that motion.

The CHAIRMAN. The motion is now on the reduction of the period of isolation from six weeks to four weeks.

(The question was taken and the motion was not agreed to.)

The CHAIRMAN. The question now is on the adoption of the section as a whole.

(The question was taken and the motion was agreed to.)

The CHAIRMAN. Section VII reads:

VII. The isolation of cases of poliomyelitis should be stringent isolation of the sick person with attendant or attendants, in a properly screened room or rooms, with disinfection, at the bedside, of all bodily excretions. Wherever it is possible, the removal of patients to a hospital is greatly to be preferred to isolation in a private house or apartment.

Dr. BURKART. I move that the section be adopted.

(The motion was seconded.)

Dr. DRAKE. I wish to know whether that section or the following section provides for the other inmates of the premises who continue to reside thereon, the adult members of the family? I think that is a very important part of this consideration.

The CHAIRMAN. Dr. Fulton, will you answer that question?

Dr. FULTON. This section does not provide for the isolation of persons. They are not specified, and therefore it does not apply to them. The committee was not undertaking to do for public health officers what they should do for themselves.

Dr. DRAKE. Then do I understand that if an adult inmate of infected premises applies for a health certificate, that health certificate may be issued to him—I mean an adult actually residing on infected premises?

Dr. FULTON. Why, no; that is very clearly covered. In every case the permit must specify the residence and——

Dr. DRAKE. I mean the adult, you understand, of course.

Dr. FULTON. Yes.

Dr. DRAKE. Then does this contemplate the quarantine of adult members of the family continuing to reside on the premises?

Dr. FULTON. I can not see that this section relates in anywise to any other person than the sick person and attendants. It is a stringent isolation. The only thing that is intended to be covered is the sick person and his attendant.

The CHAIRMAN. The chair will rule that this section relates only to the sick person or his attendant, and the question of quarantine of the other members of the household must be taken up under another section, if you wish to offer another section.

Dr. WOODWARD. Now, are we to understand that that is adopted as a principle, and that it follows that those on the premises under 16 years of age where the patient is located are perfectly safe to run around in the community at large, but are not safe for interstate travel? That is the only inference that I can draw from this section, because there is no restriction suggested, even as to children on the infected premises, except that they must not go into interstate travel.

The CHAIRMAN. Will you take that up under another section?

Dr. WOODWARD. No; but——

The CHAIRMAN. If you wish to consider the question of contact I would suggest that you take up another section regarding contact. This relates to the sick person or attendant.

Dr. WOODWARD. My purpose is to know what the committee means by this section and what its effect will be if adopted, in order that we may be guided in our future actions.

Dr. BRACKEN. If I might say a word, I would suggest that this report of the committee has relation to interstate and intrastate traffic, and not to home quarantine. It would be impossible for our com-

mittee to make regulations governing the isolation in the home of cases of anterior poliomyelitis. Many States have different rules and laws which are applicable. We are dealing now only with interstate and intrastate traffic.

Dr. WOODWARD. If I took Dr. Bracken at his word, I would move to strike this section out. I do not take him at his word, and, if I may be permitted to do so without stultifying myself, I am going to move to amend this section by adding after the word "attendants" the words "and all inmates of the infected household less than 16 years of age," as that seems to be the dead line.

Dr. FULTON. You would accomplish by that exactly the same grade of isolation for them as you do for the sick person.

Dr. WOODWARD. If they are dangerous they ought to be isolated. I will change it and move to insert those words after the word "excretions," then.

The CHAIRMAN. Is there a second to this motion? The chair hears none. The question is now on the section as a whole, Section VII.

Dr. LEAKE. In regard to the hospitalization of these cases, I should like to add a word in connection with what Dr. Albert has said concerning future treatment. You remember that yesterday Dr. Emerson emphasized that in severe cases it was not a necessity that immediate hospitalization be followed. The treatment in the acute stage recommended by those who have had the most experience is absolute rest, and meddlesome interference with the patient should not be permitted. That means that hospitalization should be carried out where it can be without injury to the patient, but that otherwise it should not be followed.

The CHAIRMAN. I think that was made very clear yesterday, and I think furthermore it says here, "is greatly to be preferred."

Dr. LEAKE. Yes.

The CHAIRMAN. So that this is broad enough not to interfere on that.

Dr. LEAKE. Simply, it is a matter of absolute rest that is required.

The CHAIRMAN. The question is on the adoption of Section VII.

(The question was taken and the motion was agreed to.)

The CHAIRMAN. Section VIII is as follows:

VIII. In case of death from poliomyelitis the funeral should be strictly private.

Dr. BURKART. I move that that section be adopted.

(The motion was seconded, and the question being taken the motion was agreed to.)

The CHAIRMAN. Section IX reads as follows:

IX. Wherever poliomyelitis is unusually prevalent, assemblages of children in public places should be prohibited.

(It was moved and seconded that the section be adopted as read, and the question being taken the motion was agreed to.)

The CHAIRMAN. Section X reads as follows:

X. During unusual prevalence of poliomyelitis schools should not be opened without thorough medical supervision by a health authority. When schools are opened, beginning should be made with high schools, and proceeding to lower age groups no more rapidly than complete medical examinations can be made.

(It was moved and seconded that the section be adopted as read, and the question being taken the motion was agreed to.)

The CHAIRMAN. Section XI reads as follows:

XI. Because of the existence of unknown carriers of the infectious virus of poliomyelitis and because the infectious virus is present in the body discharges of such persons, therefore all measures to prevent contamination by human excreta or other bodily discharges, the suppression of the fly nuisance, prohibition of the common drinking cup, and a general educational campaign for cleanliness and sanitation, with particular instruction of parents and children concerning personal hygiene, especially of the mouth and nose, are strongly urged by the committee.

(It was moved and seconded that the section be adopted, and the question being taken the motion was agreed to.)

The CHAIRMAN. Section XII reads as follows:

XII. To aid in preventing the spread of poliomyelitis, common carriers should instruct their agents and ticket sellers, by direct order, as well as by public notices, when poliomyelitis is unusually prevalent, that travelers with children of 16 years or under must be provided with a health certificate, as detailed in another section of this report.

Dr. DOWLING. What are we to understand by "unusually prevalent"? If there were 65 cases in six weeks' time would you say that was unusually prevalent?

Dr. FULTON. Yes; I would say that it was.

Dr. PARLETT. I would suggest to add the following as an amendment, "Common carriers to be notified by the Public Health Service of the area of prevalence and at what points certificates must be displayed before permitting the travel of children of 16 years or under."

The CHAIRMAN. Does the conference wish to do anything with this suggestion which Dr. Parlett has made?

Dr. FULTON. I might say to Dr. Parlett that he has furnished the committee very pertinent information. I do not know whether it can be executed at this time, but undoubtedly all of us will realize that this requirement, if imposed upon us by carriers, would put upon the health authorities the obligation to give them in all cases just exactly such notice as they require. It is obvious that the request is perfectly reasonable, and it would seem to me that the obligation is implied in the stipulations on our part. If you will accept that in lieu of a motion, I think we can let it go.

Dr. WOODWARD. I second Dr. Parlett's motion, or rather I offer the motion Dr. Parlett has suggested. I say we have provided that the Public Health Service shall investigate the infected area, so that the Public Health Service must have the knowledge in hand before it acts.

The CHAIRMAN. Is there a second to Dr. Woodward's motion?

(Dr. Woodward's motion was seconded.)

The CHAIRMAN. Dr. Woodward has moved to amend the last section of this report so that it will read:

Common carriers to be notified by the Public Health Service of the area of prevalence, and at what points certificates must be displayed before permitting the travel of children 16 years of age or under.

This imposes a pretty heavy responsibility on the service.

Dr. WOODWARD. They have got to do it anyway, though.

The CHAIRMAN. Yes.

Dr. WOODWARD. It would be the Public Health Service or the State authorities, as the case may be. If it is interstate service it would be the Public Health Service.

The CHAIRMAN. It will then read: "Common carriers to be notified of the area and prevalence of the infection, and at what points certificates must be displayed before permitting the travel of children of 16 years of age or under." Is there any discussion?

(The question being taken, the motion was agreed to.)

The CHAIRMAN. Section XIII reads as follows:

XIII. The epidemic prevalence of poliomyelitis in certain States at this time indicates a probability of epidemic prevalence next year in States not gravely affected at the present time. It is believed that the measures here recommended should be continued in operation at least until such time as the incidence of the disease has subsided to or below its usual level.

Dr. WOODWARD. Why should not these measures be continued indefinitely, and why should we limit them as to time?

Dr. FULTON. We do not.

The CHAIRMAN. It says "continued in operation at least until such time as the incidence of the disease," etc. That is not a prohibition for continuing it as long as they wish.

Dr. STILES. Would not "possibility" instead of "probability" be a more appropriate word?

Dr. FULTON. It indicates an expectation.

Dr. STILES. Expectation. That would make it like getting ready to prepare to commence.

Dr. FULTON. That is what we are doing.

The CHAIRMAN. I think "possibility" is the better word.

Dr. STILES. Or "likelihood."

Dr. FULTON. That is better yet.

The CHAIRMAN. What word shall we insert here, or shall we insert any?

Dr. SWARTS. I move that the section be adopted as read.

(The motion was seconded, and the question being taken the motion was agreed to.)

The CHAIRMAN. The question is now on the adoption of the report as a whole.

Dr. FULTON. Before any other action is taken, I should like to say a word by way of inquiry of Dr. Dowling about the words "unusual prevalence of poliomyelitis." Throughout this report the committee has rather refrained from getting into difficulties, where distinctions have to be made in matters of epidemic magnitude for which there are no criteria, but for which criteria will probably be made within a year's time. If we say an epidemic prevails, I think that includes every mode of expression; and I think it would be better than to say "unusual prevalence."

Dr. WILLIAMS. The question with the railroad people who have to carry these people is a very important one. It is illegal for the railroad to sell tickets or to refuse to carry anybody unless they present evidence of disease at the time they board the train. Now, it would be illegal at the present time for the railroads to refuse to carry people because they have not certificates.

The CHAIRMAN. I think I can answer this. The railroads come under the existing interstate quarantine regulations. They are common carriers, and if the common carrier does not observe these regulations he lays himself liable. This regulation is as follows:

SEC. 17. Common carriers shall not knowingly accept for transportation from one State or Territory or the District of Columbia into another State or Territory or the District of Columbia any person suffering from any of the diseases mentioned in section 1, except as hereinafter provided.

Poliomyelitis is one of the diseases mentioned in section 1, and there are no hereinafter provided regulations for poliomyelitis. Therefore the railroads are prohibited from carrying cases of poliomyelitis.

SEC. 18. No person knowing that he is in the communicable stage of any of the diseases enumerated in section 1 shall travel on any car, vessel, vehicle, or conveyance engaging in interstate traffic, except as hereinafter provided, nor shall any parent or guardian allow any minor, or other person under his charge who is in the communicable stage of any of such diseases, to travel in any car, vessel, vehicle, or conveyance engaging in interstate traffic.

SEC. 19. No person, firm, or corporation shall offer for shipment in interstate traffic, and no common carrier shall accept for shipment, or transport in interstate traffic, any article or thing known to have been exposed to the contagion or infection of any of the diseases enumerated in section 1, etc.

SEC. 21. Any person or thing, either living or dead, which has been exposed to or is infected with any of the diseases enumerated in section 1, if found in

any car, vessel, vehicle, or conveyance undergoing interstate transportation, shall be subjected to such inspection, disinfection, or other measures as may be necessary to prevent the spread of the infection from them.

It appears to me that the railroads must demand these certificates for their own protection, in order to keep themselves out of trouble.

Dr. GARRISON. It seems to me there is one point that has not been definitely covered, and that is with reference to the transportation of people from uninfected into infected districts. As I came to this conference quite a number of people boarded the train at Buffalo. No inspection certificate was required. Some of them came from the West. In the particular case in question the man and his wife stated they came from Kansas City, where there was no poliomyelitis. An inspector boarded the train, to the surprise of everyone, at a little town 30 miles from Buffalo and demanded a certificate. They did not have it, and 30 or 40 people were put off at a town certainly outside of the area of this infection. The train officials were anxious to know if they were liable in damages if they put these people off.

Dr. PARLETT. It seems to me this is certainly up to the health boards if they undertake to take passengers off trains, and therefore the companies are not liable for any such action.

The CHAIRMAN. The question is now on the adoption of the report as a whole.

Dr. SWARTS. I move the adoption of the report as a whole.

(The motion was seconded.)

Dr. WRIGHT. In regard to the railroads, how is a child worker, a commuter, to take advantage of the monthly commutation rate under that rule?

The CHAIRMAN. I would suggest that you take up that question after the adoption of the report. Are you ready for the question?

(The question was taken, and the report was adopted.)

The CHAIRMAN. The report is accepted, and I congratulate the conference on the very great excellence of the report it has accepted and the committee on the splendid work it has done in this regard.

Dr. SWARTS. Might I ask when we may expect a copy of these rules?

The CHAIRMAN. I think the probabilities are that they can be published immediately. Dr. Trask, do you think it would be possible for us to get this out as a special publication within the next few days?

Dr. TRASK. Yes.

Dr. WILLIAMS. Could not each delegate be provided with one in the next two hours?

The CHAIRMAN. We are making carbon copies, now.

Dr. WILLIAMS. So that if the delegates come back at 2 o'clock they can all get copies?

MISCELLANEOUS BUSINESS.

The CHAIRMAN. The program for the conference is exhausted, with the exception that we desire to give people an opportunity to speak their minds on the poliomyelitis question. The Chair will first listen to Dr. Wright.

Dr. WRIGHT. Can a ticket agent sell a monthly commutation ticket to a child worker—that is, a worker going into New York daily—under 16 years of age? There are thousands of office boys who work in New York during the summer and buy commutation tickets from New Jersey and Connecticut.

The CHAIRMAN. Dr. Banks, will you please answer that question?

Dr. BANKS. I did not quite understand it.

The CHAIRMAN. The question was, Can a railroad company sell a commutation ticket to a child under 16 years of age?

Dr. BANKS. I know no reason why not.

The CHAIRMAN. Upon the presentation of a health certificate?

Dr. BANKS. Yes.

Dr. FULTON. I understood Dr. Banks to say a few minutes ago that the conditions at that point were dealt with by certificates of health being renewed every 7 days.

Dr. COLLINS. Mr. Chairman, I now want to insist on Dr. Porter's motion of yesterday, that a common report, containing the consensus of opinion of this conference, be given us for the benefit of our people at home. Dr. Porter, you made that motion yesterday?

Dr. PORTER. I withdrew it.

The CHAIRMAN. You will all receive reports of this meeting. They will be published.

Dr. PORTER. I think we all know what the consensus of opinion is.

Dr. ROBERG. Coming back to the report blank on infantile paralysis, I would like to make a motion that a supplemental slip be attached to each report blank, giving the differential diagnosis between infantile paralysis and those diseases which may simulate it, together with other salient points deemed necessary by the Public Health Service.

Dr. WOODWARD. I second that motion.

The CHAIRMAN. It has been moved and seconded that there be attached to the report blank a statement of the salient points of the differential diagnosis of infantile paralysis. Is there any discussion?

(The question was taken and the motion was agreed to.)

The CHAIRMAN. Is there any other person who has anything he would like to say to the conference?

Dr. PARLETT. I think it would be of advantage if the Public Health Service would arrange to have a subsequent meeting with represent-

atives of the railroads, to clear up several points under discussion, with particular reference to regulation No. 22.

The CHAIRMAN. Is there any other business to come before the conference?

Dr. WOODWARD. Mr. Chairman, do I understand that this request which has just been made is for a conference of certain railroad representatives with this body?

Dr. PARLETT. Of railroad representatives with the Public Health Service.

Dr. WOODWARD. Oh, with the Public Health Service?

The CHAIRMAN. That will have to be arranged for later.

Dr. DRAKE. I think probably one of the most important things that this conference can do now is to appoint a committee for the purpose of formulating rules for the control of poliomyelitis——

The CHAIRMAN. In the home?

Dr. DRAKE. In the home, and to offer them to the various States for adoption, as a model. I make a motion to the effect that such a committee be appointed.

(The motion was seconded.)

The CHAIRMAN. You have heard the motion, that a committee be appointed for the purpose of formulating rules and regulations for the control of poliomyelitis in the home. Is there any discussion?

(The question was taken and the motion was agreed to.)

COMMITTEE APPOINTMENTS.

The CHAIRMAN. The chair will appoint as members of this committee Dr. Drake, Dr. Roberg, Dr. Garrison, Dr. Tuttle, and Dr. Collins.

Dr. BRACKEN. When will that committee report?

The CHAIRMAN. That committee will report at 2 o'clock this afternoon. The chairman will appoint as a standing committee on poliomyelitis Dr. Lavinder, Dr. Tuttle, Dr. Drake, Dr. Dowling, and Dr. Frost.

The chair will now entertain a motion to adjourn until 2 o'clock.

(At 12.40 o'clock p. m. the conference took a recess until 2 o'clock p. m.)

AFTERNOON SESSION, SECOND DAY.

(The conference was called to order at 2 o'clock p. m. by the acting chairman, Asst. Surg. Gen. W. C. Rucker.)

The CHAIRMAN. The first business to be taken up by the conference this afternoon is the receipt of the report of the committee on the prevention of the spread of poliomyelitis in the home. Dr. Drake, the chairman of the committee, is ready to make his report.

REPORT OF THE COMMITTEE ON THE PREVENTION OF THE SPREAD OF POLIOMYELITIS IN THE HOME.

Dr. DRAKE. Mr. Chairman, we have had a very short time in which to give consideration to this important question, but we have formulated what we think are the essential rules for the control of poliomyelitis. These rules are framed with full knowledge of the fact that we have very little definite scientific information of the disease. Under the circumstances we have endeavored to adopt rules which will safeguard against all avenues of infection [reading]:

1. *Reports.*—Every physician, attendant, parent, householder, or other person having knowledge of a known or suspected case of acute anterior poliomyelitis must immediately report the same to the local health authorities.

2. *Placarding.*—Whenever a case of acute anterior poliomyelitis is reported to the local health authorities, they shall affix in a conspicuous place at each outside entrance of the building, house, or flat, as the case may be, a warning card.

We do not go into detail as to the size of the card or the text.

Defacement of such placards or their removal by any other than the local health authorities or the duly authorized representative of the State board of health is strictly prohibited.

3. *Quarantine of patient.*—All cases of acute poliomyelitis must be quarantined for at least six weeks. Quarantine must not be raised, however, until the premises have been thoroughly disinfected by or under the supervision of the health officer. All persons continuing to reside on the infected premises shall be confined to the infected building, house, or apartment until quarantine has been raised, except as hereinafter provided.

No one but the necessary attendant, the physician, the health officer, and representatives of the State board of health may be permitted to enter or leave the infected premises. Upon leaving they must take all precautions necessary to prevent the spread of the disease. The nursing attendant may leave the premises only on permission granted by the local health officer.

4. *Quarantine of exposures.*—Adult members of the family may be removed from the infected premises upon permission granted by the local health officer after thorough disinfection of person and clothing.

Children of the family may be removed from the infected premises upon permission of the local health officer, after thorough disinfection of person and clothing. Such children may be removed only to premises upon which none but adults reside, and must be confined to the premises (in the house) for two weeks from date of removal, during which period they must be kept under close observation by the local health authorities, and no child shall be permitted to visit or otherwise come in contact with them during this period. They must not return to the infected premises or come in contact in any way with the patient or attendant until quarantine has been terminated.

All children who continue to reside on the infected premises must be held under close observation for at least two weeks following termination of the last case on the premises.

5. *Exclusion from the schools, etc.*—All children who continue to reside on the infected premises must be excluded from the schools and other public gatherings for at least two weeks following date of raising of quarantine.

All children who have been exposed to the disease and who have been removed from the infected premises, in accordance with the provisions of rule 4, must be excluded from the schools and from all public gatherings for at least two weeks from date of last exposure.

The patient must be excluded from the schools and all public gatherings for at least two weeks after quarantine is raised.

School teachers and other persons employed in or about a school building, who have been exposed to the disease, must be excluded from the school building and grounds for a period of two weeks following date of last exposure and until persons and clothing have been thoroughly disinfected.

Whenever the schools are closed on account of an outbreak of acute poliomyelitis, children under 16 years of age shall be excluded from Sunday schools, churches, picture shows, and all other public gatherings, and shall be confined to their own premises.

That relates only to instances where the schools are closed. Otherwise, of course, the children would be permitted to roam the streets at large.

6. *Precautions.*—No person, except the necessary attendant, the physician, and the health officer may be permitted to come into contact with the patient. Such persons must not handle or prepare food for others, and their intercourse with other members of their household must be as restricted as possible.

The infected premises, especially the sick room, shall be thoroughly screened against flies, and any such insects as may enter the sick room shall be therein exterminated.

We say "therein exterminated" in preference to driving the flies out of the premises into the open air.

All toilets used by the patient or attendants and those in which discharges from the patient are deposited must be thoroughly screened against flies and freely treated with an approved disinfectant.

7. *Removals.*—No person affected with acute anterior poliomyelitis shall be removed from the premises upon which he is found unless consent to such removal be first obtained from the local health authorities or the State board of health, and then only after strict compliance with the provisions of these rules. Under no circumstances shall permission be granted for the removal of any patient or article from the infected premises to any premises upon which milk or other foodstuffs are produced, sold, or handled.

No person affected with acute anterior poliomyelitis shall be removed from any city, village, township, or county in which he is found unless consent to such removal be first obtained from the State board of health.

8. *Sale of milk and other foodstuffs from infected premises prohibited.*—Whenever a case of acute anterior poliomyelitis shall occur on any premises where milk or other foodstuffs are either produced, handled, or sold, the sale, exchange, or distribution on such premises in any manner whatsoever, or the removal from the infected premises of milk, cream, any milk products or other foodstuffs, until the case has been terminated by removal, recovery, or death, and the premises and contents and all utensils have been thoroughly disinfected under the supervision of the local health authorities, is prohibited: *Provided*, That in the event of acute anterior poliomyelitis occurring on a dairy farm, the live stock only may be removed to some other premises and milking done and milk cared for and sold from such other premises by persons

other than those of the household of the person so affected, upon obtaining permission to do so from the local health authorities or the State board of health.

Whenever a case of acute anterior poliomyelitis shall occur on premises connected with any store, such store shall be quarantined until the case has been terminated by removal, recovery, or death, and the premises are thoroughly disinfected: *Provided, however,* That if the premises are so constructed that the part in which the case exists can be and is effectively sealed, under the supervision of the local health authorities, from the store: *And provided further,* That the employees and all other persons connected with the store do not enter the part of the premises where the case exists and do not come in contact with the patient, his attendant, or any article whatsoever from the quarantined premises, the store attached to the quarantined premises need not be closed.

9. *Delivering of milk, groceries, and other necessities.*—Milk, foodstuffs, and other necessities may be delivered at the quarantined premises, but there must be no contact between the patient or attendant and the delivery agent. Whenever practicable, milk must be delivered in bottles. When milk can not be delivered in bottles, the householder must provide a sterilized container (a freshly scalded bottle or pail) to receive the milk.

No milk bottle, basket, or any other article whatsoever may be taken out of or away from the infected premises during the period of quarantine. Before milk bottles are removed from the premises after quarantine is raised they must be sterilized under the direction of the local health authorities. Mail which has been handled by the patient or attendant must not be taken from the premises.

10. *Disinfection.*—All articles taken from the sick room must be disinfected upon removal. Exposure in the open air of carpets, rugs, curtains, bedding, and similar articles from the infected premises, for the purpose of airing, shaking, beating, or sunning, is strictly prohibited, unless, in the opinion of the local health authorities, such may be done without danger of the spread of the disease.

Books, toys, and similar articles used to amuse the patients are best disposed of by burning. Under no circumstances should borrowed toys or books be returned. Library and school books must not be returned; they must be burned.

Bed and body linen which has been in contact with the patient, and handkerchiefs or cloths which have been used to receive discharges from the patient must be immersed in an approved disinfectant before removal from the sick room, and after removal should be boiled.

All discharges from the patient must be thoroughly disinfected before removal from the sick room.

No article of clothing, or other article, may be removed from the infected premises to a laundry or other place for washing unless previously disinfected by immersion in an approved disinfectant, and the approval of the local health authorities has been obtained.

House animals such as cats, dogs, or any other household pets, and all other animals or fowls, must be strictly excluded from the infected building, house, or flat, as the case may be, during the entire period of quarantine. Any such animals which have been in contact with the patient must be subjected to a thorough disinfecting bath before removal from the infected building, house, or flat, and must not be permitted to reenter the same. Such animals must be confined in an outbuilding. Dogs and cats running at large should be destroyed.

Before quarantine is raised the infected premises and all articles of furniture and clothing therein must be thoroughly disinfected by or under the supervision

of the local health authorities in a manner approved by the State board of health.

11. *Deaths, burials, and transportation of the dead.*—When the body of anyone dead from acute anterior poliomyelitis is to be transported by railroad or other common carrier the official rules of the State board of health governing the transportation of the dead must be observed.

The report is signed by C. W. Garrison, W. B. Collins, T. D. Tuttle, D. N. Roberg, and C. St. Clair Drake.

The CHAIRMAN. The conference has heard this report. What shall we do with it?

Dr. SWARTS. I move that it be received.

(The motion was seconded.)

The CHAIRMAN. It is moved and seconded that the report be received. Is there any discussion?

(The question was taken and the motion was agreed to.)

The CHAIRMAN. The question now rises on the adoption of this report. Is there a motion to that effect?

Dr. SWARTS. I move its adoption seriatim by sections.

(The motion was seconded.)

The CHAIRMAN. It is moved and seconded that the report be adopted section by section. Is there any discussion? There seems to be none, and the chairman of the committee will please read the first section.

Dr. DRAKE. The first section reads:

1. *Reports.*—Every physician, attendant, parent, householder, or other person having knowledge of a known or suspected case of acute anterior poliomyelitis must immediately report the same to the local health authorities.

Dr. RANKIN. Would it not be better to insert after the word "poliomyelitis" the words "or infantile paralysis"? There are country people who never heard of poliomyelitis.

The CHAIRMAN. Put in parentheses (infantile paralysis). Without objection, this section as amended will be adopted.

(There was no objection.)

Dr. DRAKE. Section 2 is as follows:

2. *Placarding.*—Whenever a case of acute anterior poliomyelitis is reported to the local health authorities they shall affix in a conspicuous place at each outside entrance of the building, house, or flat, as the case may be, a warning card. Defacement of such placards or their removal by any other than the local health authorities or the duly authorized representative of the State board of health is strictly prohibited.

The CHAIRMAN. I would like to ask the chairman whether his committee considered the placarding of streets. In New York where a considerable number of cases existed a large placard, reading "Poliomyelitis exists in this street," was placed at each end of the street. It seems to me a logical measure in places which are thickly inhabited.

Dr. COLLINS. Our function, as we understood it, was merely to provide for the prevention of the spread of poliomyelitis in the home.

The CHAIRMAN. Yes.

Dr. COLLINS. We confined our deliberations more particularly to the home and not to the district.

The CHAIRMAN. This committee was to consider the control for the homes and not districts.

Dr. DRAKE. That is a matter for a special ruling.

(It was moved and seconded that section 2 be adopted as read, and, the question being taken, the motion was agreed to.)

Dr. DRAKE. Section 3 is as follows:

3. *Quarantine of patient.*—All cases of acute poliomyelitis must be quarantined for at least six weeks. Quarantine must not be raised, however, until the premises have been thoroughly disinfected by or under the supervision of the health officer. All persons continuing to reside on the infected premises shall be confined to the infected building, house, or apartment until quarantine has been raised, except as hereinafter provided.

No one but the necessary attendant, the physician, the health officer, and representatives of the State board of health may be permitted to enter or leave the infected premises. Upon leaving they must take all precautions necessary to prevent the spread of the disease. The nursing attendant may leave the premises only on permission granted by the local health officer.

The CHAIRMAN. What is your pleasure as to this section? Without objection, the section will stand adopted.

Dr. BURKART. One moment.

The CHAIRMAN. There is objection.

Dr. BURKART. The objection is this: You have restricted all individuals absolutely to the house by the wording of that rule. If you say "premises" it is different. In many places some people have back yards. You say definitely "building, house, or apartment." If you say "premises" and permit persons to go in the yard, but not to mingle with others, that is different. That question comes up very frequently—whether individuals shall be confined directly to the house or have the privilege of roaming over their own premises so long as they come in contact with no visitor. Under the wording as you have it there they must remain in the building.

Dr. DRAKE. It reads, "shall be confined to the infected building, house, or apartment until quarantine has been raised." In a thickly populated community that is necessary. In a rural district it is different.

Dr. BRACKEN. I am afraid that is going to make more trouble. You have a regulation there that is extremely rigid, and I am inclined to believe that it will not be accepted. Now, what position is it going to put us in if we advise the continuance of the present regulation? We at present allow a certain amount of liberty to adults living in the house. We would allow a farmer to go on about his business, although he was living right in the house. We would

allow him even to go to town to sell his grain, but under this regulation he could not go off the premises. That is like a smallpox quarantine of 20 years ago, when we established a shotgun quarantine and absolutely stopped all traffic or communication with those who had smallpox in their house. I do not care to go back to that.

Dr. DRAKE. Of course we know little about the mode of infection of this disease. It has been pretty generally acknowledged by those who have spoken in this conference that the adult carrier is a big factor in the dissemination of the infection. If the adult carrier is a big factor in the dissemination of the infection, then the adult carrier should certainly be confined to the premises.

Dr. BURKART. The word "premises" is different from "house."

Dr. ANDREWS. If the adult carrier is to be confined to the premises, why should that adult carrier be permitted to get on a railroad train and go where he chooses?

The CHAIRMAN. I think the answer to that is that when a man is on premises where there is a known case of poliomyelitis, he occupies a very different situation than when he is going about at large. Then we have nothing by which to judge that he is a carrier. We do not know at the railroad station whether he is a carrier or not.

Dr. ANDREWS. Do you not think that it is the duty of the health officer, in the protection of the public, to ask him whether he has come from a place where there is poliomyelitis or not?

The CHAIRMAN. Yes; and that is the method of protecting the public.

Dr. ANDREWS. If he says that he has, you do not give him a certificate.

The CHAIRMAN. If he is held in the place of quarantine he can not apply for a certificate to travel.

Dr. WOODWARD. If you hold the children on the place they can not apply, either, can they?

The CHAIRMAN. The children do not all come from infected places, but this man we are supposing has come from an infected place.

Dr. ANDREWS. Suppose this man did not know the place was infected, or that he came out voluntarily from an infected place, and suppose he did know it, and the health authorities did not question him?

The CHAIRMAN. You can not stop that.

Dr. ANDREWS. But we stopped it with the children 10 years of age.

Dr. WOODWARD. I would suggest that you solve it by asking no questions about the children, and that will protect the children.

Dr. ANDREWS. Even so.

Dr. DRAKE. I think we are going beyond Dr. Burkart's suggestion by making it read that all persons continuing to reside on the

infected premises shall be confined thereto. That would leave it so they might be confined to the yard of the house.

Dr. COLLINS. Or to the farm.

Dr. DRAKE. With the permission of the committee we will make that change.

Dr. ANDREWS. If the man, then, is to be kept out of his home, I will be frank with you and state that there is not one person in the State of Alabama who will obey the regulation. You will have to have a shotgun to enforce it.

Dr. DOWLING. We have had but two instances where two cases of poliomyelitis have occurred in the same home. With a history of that kind before us, it is going to be awfully hard to enforce a quarantine. I am not going to oppose anything that can be done, but it will be very difficult to enforce a regulation of that kind.

Dr. WOODWARD. As a simple matter of fact, we acted on this matter this morning in a diametrically opposite way. I offered an amendment this morning that provided for a quarantine on the premises only of children under 16. That was adopted. Now we are reversing our action by proposing to quarantine everyone.

Dr. ANDREWS. It occurs to me that we are up against a proposition we do not know anything about, and we might just as well take the public into our confidence and inform them of that fact. From the statements made here yesterday—and they were full, free, frank, and illuminating—gentlemen of experience confessed that all their efforts toward prevention had apparently done nothing to curb this malady. Now we can not claim that these efforts have not to some extent, at least, accomplished good, for the reply might be, "Suppose that nothing had been done; we do not know what might have happened." That is all true. The disease presumably is due to a virus from the emanations of the sick, but just how it is conveyed from the sick to the well nobody knows. By our action this morning we have said that it is conveyed by children under 16 years of age, but a child 16 years and 1 day old does not tote it around with him. Now that has been said so many times it does not go any longer with the public, because they do not believe it, and it seems to me we are traveling dangerously near to ground where angels would fear to tread. I am perfectly willing to go on record as in favor of everything that will be of help in the protection of the public. That is what we are here for. It seems to me utterly absurd to put a dead line on those who are in the home and absolutely raise the dead line against the traveling public. If we are going to say that every person over 16 years of age can go where he pleases on a train we ought to say that he can do the same thing at home.

The CHAIRMAN. The chairman's opinion in this matter is that we can not afford to leave any stone unturned until the time shall come

when someone will come to us and give us definite, accurate knowledge of this disease so that we may with equal accuracy and definiteness combat it.

Dr. ANDREWS. I agree thoroughly with the chairman; but can the chair say that an adult does not have the disease any more than a child 16 years of age?

The CHAIRMAN. No; the chair does not.

Dr. ANDREWS. Then why draw the line? I merely ask, if we have no definite knowledge as to who the carrier is, why do we specify? Now, then, do you not think it would be much better to say, so far as the traveler and the people in the home are concerned, that poliomyelitis is a disease concerning which the medical profession knows practically nothing; that we are groping in the dark and are doing all we can to ascertain what is its cause and how it is disseminated; that until such time as we have more definite knowledge we recommend that the patient and all necessary attendants be strictly isolated; that all persons who have been exposed shall be kept in quarantine for a reasonable length of time—three or four weeks, or whatever it may be—after which they shall be permitted to go where they please, whether they are 16 or 160 years of age?

Dr. BURKART. Mr. Chairman, I did not expect to stir up so much commotion, but I think every gentleman here who understands the situation will agree that in rural districts confining exposed individuals to the house will work great hardship. "Premises" is entirely different. A man's premises may comprise a 40-acre farm. There is no reason why a farmer who is absolutely well should not be permitted to plow his garden or field, so long as the restrictions placed upon him as to mingling with other individuals are observed. If you confine me to my house, I must stay there; but if you confine me to my premises or my domain, that is an entirely different matter.

The CHAIRMAN. What is the pleasure of the conference regarding this subject?

Dr. DRAKE. I would say that, acting upon Dr. Burkart's suggestion, that section would read this way: "All persons continuing to reside on the infected premises shall be confined to the premises."

Dr. BURKART. The immediate premises.

Dr. DRAKE. It would read that way instead of reading as it now does, "confined to the building, house, or apartment."

Dr. ANDREWS. That is, until dismissed?

Dr. DRAKE. Yes; until dismissed.

Now, this next section relates to the release of the adult members.

Dr. DOWLING. Take a large sugar plantation, for instance; a man could roam from house to house on that plantation and still be on the premises.

Dr. DRAKE. If we were called upon to construe that as applying to the community, small town, or the city, I would say that "premises" mean the home, and it is necessary that persons should be confined to the home for the safety of a community. On the farm they might be confined to the farm. On a plantation upon which many people live, a very large farm, you might say if a person were allowed to roam at large over the entire area that the object of the regulation of the health authorities would be defeated. The word "premises" is questionable.

Dr. BANKS. I should like to say a word in relation to the attitude of the general traveling public to the regulations we have established in New York. I have found very little complaint, and there has been a more or less general acquiescence in the reasonableness of the regulations. A great many people have expressed gratification that these regulations have been established and enforced, and I think the public generally has complied with them to the fullest possible extent. They are satisfied that something is being done. I do not know that they are satisfied that everything is being done, or that the right thing is being done, but they are satisfied that we are doing something to protect them, whether it is scientifically correct or not.

Just one thought in relation to the word "premises." In New York City the situation is somewhat complicated by the fact that there are a very large number of tenement houses, and it is pretty difficult to say what a "premise" is in a tenement house or in a hotel. I think in New York City they have held that if the patient is removed from a hotel and the room disinfected, the hotel is clean.

Dr. ANDREWS. As long as the patient remains in the hotel it is regarded as infected premises.

Dr. BANKS. As long as the patient remains in the room, and it is not disinfected.

Dr. PORTER. Is the entire hotel considered to be infected premises, or just the room that the patient occupies?

Dr. BANKS. Until the patient is removed from the hotel and the room is renovated, or whatever process they go through.

Dr. PORTER. Supposing it is a disease which makes it dangerous to remove the patient to a hospital; would you quarantine the entire hotel?

Dr. BANKS. I know that they remove all cases as soon as possible, and after the process of renovation of the room the hotel is declared free from infection.

The CHAIRMAN. The question is on the adoption of this section.

(The question was taken and the section was adopted.)

Dr. DRAKE. Section 4 reads:

4. *Quarantine of exposures.*—Adult members of the household over 16 years of age may be removed from the infected premises upon permission granted by the local health officer, after thorough disinfection of persons and clothing.

Dr. DOWLING. What do you consider disinfection?

Dr. DRAKE. That is for the local health authorities to determine.

Dr. DOWLING. I wanted to know whether you meant disinfection with formaldehyde.

Dr. WOODWARD. Had we not better make that "members of the household over 16 years of age," instead of as it is, "adult members of the household"?

Dr. DRAKE. Pardon me, Doctor; it covers children. That is part of the same section. The rest of the section reads:

Children of the family may be removed from the infected premises upon permission of the local health officer, after thorough disinfection of person and clothing. Such children may be removed only to premises upon which none but adults reside and must be confined to the premises (in the house) for two weeks from date of removal, during which period they must be kept under close observation of the local health authorities, and no child shall be permitted to visit or otherwise come in contact with them during this period. They must not return to the infected premises or come in contact in any way with the patient or attendant, until quarantine has been terminated.

All children who continue to reside on the infected premises must be held under close observation for at least two weeks following termination of the last case on the premises.

Dr. ROBERG. I would amend that to read "disinfection of the clothing and a cleansing bath of the person's body."

Dr. BURKART. It reads "disinfection of person and clothing."

Dr. ROBERG. Aseptic surgery has proved that you can not disinfect the person. I do not see how you can disinfect the body.

Dr. WOODWARD. Notwithstanding the elaboration of the regulations, we draw in these regulations a distinction merely between adults and children. We have made in our other regulations a distinction between persons over and persons under 16 years of age. I think we had better draw the same distinction here.

Dr. COLLINS. We are dealing with the proposition as though those over 16 were adults.

Dr. DRAKE. May I offer the suggestion that that is merely establishing 16 years of age as the dividing line between child life and adult life?

Dr. WOODWARD. Why should we say here with respect to this distinction that we are going to apply one set of rules to those over 21 and another to those under 21, whereas everywhere else we have said we will apply one set of rules to those over 16 and another set of rules to those under 16? Why is that?

Dr. DRAKE. I think I get your point, and the reason the regulation is drawn in this particular way is this: We will admit, for the sake of avoiding argument, that the adult and the child are equally likely to be carriers of the disease; but children under 16 years of age certainly are much more susceptible to the development of the infection than are persons over 16 years of age, and the reason children are confined is because of their susceptibility to the disease.

Dr. WOODWARD. I am afraid I am particularly obtuse. There is a period between 16 years of age and 21 years of age that has in all of our other regulations been thrown into the upper age period. In these particular regulations we are throwing it into the lower age period. What is the reason for the difference?

Dr. FULTON. What is the objection to the inconsistency?

Dr. WOODWARD. It is not only inconsistency but confusion. We might just as well go through these requirements and make one regulation 16, another 17, another 13, and so on. On the basis of what other communities have done we have fixed 16 as the determining line. Now, why should we depart from that in this case?

Dr. FULTON. Why should we conform to it? In what sense is that an established practice? Where does the necessity for any statement of any sort as to age arise? Consistency in that situation would be immaterial, and I can not see any reason myself for making any alteration for the sake of consistency.

Dr. WILLIAMS. I move that instead of using the words "adult members of the family" it be made to read, "members of the family over 16 years of age." That covers the objection.

Dr. WOODWARD. Absolutely.

Dr. RANKIN. And that the change be made wherever those words occur.

The CHAIRMAN. The motion is that it be made to read, "members of the family over 16 years of age." You have heard the motion.

(The question was taken and the motion was agreed to.)

The CHAIRMAN. The question is now on the adoption of the section.

(The question was taken and the section was adopted.)

Dr. DRAKE. Section 5 reads as follows:

5. *Exclusion from the schools, etc.*—All children who continue to reside on the infected premises must be excluded from the schools and other public gatherings for at least two weeks following date of raising of quarantine.

All children who have been exposed to the disease and who have been removed from the infected premises, in accordance with the provisions of rule 4, must be excluded from the schools and from all public gatherings for at least two weeks from date of last exposure.

The patient must be excluded from the schools and all public gatherings for at least two weeks after quarantine is raised.

School-teachers and other persons employed in or about a school building who have been exposed to the disease must be excluded from the school building

and grounds for a period of two weeks following date of last exposure and until persons and clothing have been thoroughly disinfected.

Whenever the schools are closed on account of an outbreak of acute poliomyelitis, children under 16 years of age shall be excluded from Sunday schools, churches, picture shows and all other public gatherings and shall be confined to their own premises.

The CHAIRMAN. Without objection, this section will be adopted as read.

(There was no objection and the section was adopted.)

Dr. DRAKE. The next section reads:

6. *Precautions.*—No person, except the necessary attendant, the physician, and the health officer, may be permitted to come into contact with the patient. Such persons must not handle or prepare food for others and their intercourse with other members of their household must be as restricted as possible.

The infected premises, especially the sick room, shall be thoroughly screened against flies and any such insects as may enter the sick room shall be exterminated therein. All toilets used by the patient or attendants and those in which discharges from the patient are deposited must be thoroughly screened against flies and freely treated with an approved disinfectant.

The CHAIRMAN. Without objection this section will be adopted as read.

(There was no objection.)

Dr. DRAKE. The next section reads:

7. *Removals.*—No person affected with acute anterior poliomyelitis shall be removed from the premises upon which he is found unless consent to such removal be first obtained from the local health authorities or the State board of health, and then only after strict compliance with the provisions of these rules. Under no circumstances shall permission be granted for the removal of any patient or article from the infected premises to any premises upon which milk or other foodstuffs are produced, sold, or handled.

No person affected with acute anterior poliomyelitis shall be removed from any city, village, township, or county in which he is found unless consent to such removal be first obtained from the State board of health.

The CHAIRMAN. Without objection this section will be adopted as read.

(There was no objection.)

Dr. DRAKE. The next section reads:

8. *Sale of milk and other foodstuffs from infected premises prohibited.*—Whenever a case of acute anterior poliomyelitis shall occur on any premises where milk or other foodstuffs are either produced, handled, or sold, the sale, exchange, or distribution on such premises in any manner whatsoever, or the removal from the infected premises of milk, cream, any milk products, or other foodstuffs until the case has been terminated by removal, recovery, or death, and the premises and contents and all utensils have been thoroughly disinfected under the supervision of the local health authorities, is prohibited. *Provided*, That in the event of acute anterior poliomyelitis occurring on a dairy farm the live stock only may be removed to some other premises and the milking done and milk cared for and sold from such other premises by persons

other than those of the household of the person so affected, upon obtaining permission to do so from the local health authorities or the State board of health.

Whenever a case of acute anterior poliomyelitis shall occur on premises connected with any store, such store shall be quarantined until the case has been terminated by removal, recovery, or death, and the premises are thoroughly disinfected: *Provided, however,* That if the premises are so constructed that the part in which the case exists can be and is effectively sealed, under the supervision of the local health authorities, from the store: *And provided further,* That the employees and all other persons connected with the store do not enter the part of the premises where the case exists and do not come in contact with the patient, his attendant, or any article whatsoever from the quarantined premises, the store attached to the quarantined premises need not be closed.

Dr. WOODWARD. With respect to the matter of dairy farms, I would remark that the removal of the cattle does not ordinarily answer the requirements of the situation. We have had occasion to deal with somewhat similar conditions with regard to typhoid fever and scarlet fever outbreaks, and we have directed a disinfection of the utensils, bottles, and cans, so that the business might go on in the name of the owner of the original farm. It seems to me we ought to provide for that. Otherwise the regulation is really not accomplishing its purpose in the case of the retail dealer.

Dr. DRAKE. I think that could be done under the supervision of the local health authorities.

Dr. WOODWARD. Yes; and the same as to carts.

Dr. DRAKE. That is not incorporated here.

Dr. WOODWARD. I move that it be incorporated by the proper phraseology.

The CHAIRMAN. Without objection, this section will be adopted as amended by Dr. Woodward.

(There was no objection.)

Dr. DRAKE. Section 9 reads as follows:

9. *Delivering of milk, groceries, and other necessities.*—Milk, foodstuffs, and other necessities may be delivered at the quarantined premises, but there must be no contact between the patient or attendant and the delivery agent. Whenever practicable milk must be delivered in bottles. When milk can not be delivered in bottles the householder must provide a sterilized container (a freshly scalded bottle or pail) to receive the milk.

No milk bottle, basket, or any other article whatsoever may be taken out of or away from the infected premises during the period of quarantine. Before milk bottles are removed from the premises after quarantine is raised they must be sterilized under the direction of the local health authorities. Mail which has been handled by the patient or attendant must not be taken from the premises.

Dr. WOODWARD. There, again, are required to be done exactly the things that we forbid. Instead of ordering the milkman to send his bottles into the infected premises, we order him to keep them out.

Dr. DRAKE. I do not think I got that.

Dr. WOODWARD. You say that the milk must be sent into the infected premises in bottles.

Dr. DRAKE. Not necessarily.

Dr. WOODWARD. In all cases where it is possible.

Dr. DRAKE. Yes.

Dr. WOODWARD. We say that in no case shall it be done. We think it is safer to keep them out of the premises than to send them into the premises where they may be used, even by the patient—that is, notwithstanding the fact that after six weeks' accumulation of bottles they may be disinfected.

Dr. ROBERG. Does the doctor refer to the fact that they feed babies on canned milk?

Dr. YOUNG. The regulations of the State of Maine provide that the bottles shall not be carried into the sick room or home.

Dr. DRAKE. The only object in the world in providing for the milk to be delivered in bottles is to prevent the deliverer handling the bottles which have been sent out, thus infecting his hands and the balance of the milk supply.

Dr. COLLINS. In our institutions for tuberculosis we have milk delivered in bottles.

Dr. DRAKE. Of course you understand that all these bottles are to be disinfected under the direction of the health authorities before they can be removed from the premises.

Dr. WOODWARD. In the case of modified milk we would permit bottles to go in under special regulations, but I would not adopt that regulation.

Dr. DRAKE. You think it is safer the other way?

Dr. WOODWARD. Yes. Under the direction of the health officer, I would permit them to go in.

Dr. DRAKE. I have no objection to that, at all.

The CHAIRMAN. What is the pleasure of the conference? The question is whether the milk bottles shall go into the infected home.

Dr. WOODWARD. I move that they be not permitted to go in, except with a special permit from the health officer.

Dr. RANKIN. I second that motion.

The CHAIRMAN. The motion is that milk bottles be not permitted to enter the house unless under special permit of the health officer.

(The question was taken and the motion was agreed to.)

The CHAIRMAN. Without further objection, the section is adopted as amended.

Dr. DRAKE. The next section is:

10. *Disinfection.*—All articles taken from the sickroom must be disinfected upon removal. Exposure in the open air of carpets, rugs, curtains, bedding, and similar articles from the infected premises for the purpose of airing, shaking, beating, or sunning is strictly prohibited, unless, in the opinion of the local health authorities, such may be done without danger of the spread of the disease.

Books, toys, and other similar articles used to amuse the patients are best disposed of by burning. Under no circumstances should borrowed toys or books be returned; they must be burned.

Bed and body linen which has been in contact with the patient, and handkerchiefs or cloths which have been used to receive discharges from the patient must be immersed in an approved disinfectant before removal from the sick room, and after removal should be boiled.

All discharges from the patient must be thoroughly disinfected before removal from the sick room.

No article of clothing or other article may be removed from the infected premises to a laundry or other place for washing unless previously disinfected by immersion in an approved disinfectant, and the approval of the local health authorities has been obtained.

House animals, such as cats, dogs, or any other household pets, and all other animals or fowls, must be strictly excluded from the infected building, house, or flat, as the case may be, during the entire period of quarantine. Any such animals which have been in contact with the patient must be subjected to a thorough disinfecting bath before removal from the infected building, house, or flat, and must not be permitted to reenter the same. Such animals must be confined in an outbuilding. Dogs and cats running at large should be destroyed.

Before quarantine is raised the infected premises and all articles of furniture and clothing therein must be thoroughly disinfected by or under the supervision of the local health authorities in a manner approved by the State board of health.

The CHAIRMAN. Without objection, this section will be considered as adopted.

Dr. WILLIAMS. Mr. Chairman, we recently had a case of poliomyelitis develop on a farm in our State. The week before the child was taken sick it was noticed that several of the chickens were paralyzed, had staggers, and would fall over. This little patient played with one of the chickens that was apparently paralyzed, and a few days afterwards developed infantile paralysis. It has been noticed that chickens on such premises frequently have paralysis, and if we apply this regulation to dogs and cats, it is a question whether we should not take fowls into consideration. I simply mention it. I do not think it is practical, though, to kill the chickens which it might be believed were infected.

The CHAIRMAN. I think the suggestion of Dr. Williams is a very good one, and without objection this section, with Dr. Williams' amendment, will be considered as adopted.

(There was no objection.)

The CHAIRMAN. The question is now on the adoption of the report as a whole.

Dr. WOODWARD. There is a feature of prevention adopted in New York City, and possibly in Newark, and that is, forbidding the return of goods to the sending concerns—goods which have been sent on approval to recently infected premises. That may be covered.

Dr. DRAKE. Nothing can be removed from the infected premises during the period of quarantine and until after the raising of the quarantine.

The CHAIRMAN. The question is on the adoption of the report as a whole.

(The question was taken, and the report was adopted.)

The CHAIRMAN. The report of the committee is adopted, and the chairman would request that Dr. Drake dictate the report to a stenographer before he leaves the building, so that we may have an accurate record of it.

Dr. Levy, of Richmond, is with us, and desires to make a short statement regarding some observations which he has made on this disease. Dr. Levy is a very welcome guest at this conference, and the Chair takes pleasure in presenting him to you.

Dr. LEVY. Mr. Chairman and gentlemen, like the rest of you, I am mystified and puzzled by this grave disease. Certain things have suggested themselves that it seems to me have not been brought out, and at the same time are apparently of unquestioned importance, and worth following out.

In investigating an epidemic of measles, for example, it would be perfectly useless for us to start in with two or three thousand cases and attempt to find out anything about it; but starting at the beginning, we can trace the cases to a certain point beyond which we can not follow the infection in every instance. In New York City we have an epidemic, with the lines of ramification numerous, and it would seem to be almost impossible to follow them up; but a great wave is going out from New York, and it is traveling in all directions. It seems to me that these suggestions of the lines along which we may best investigate, and what we may best investigate, may be worth while, and that is my apology for asking to be heard for a few minutes.

We had reports yesterday of this epidemic spreading out from New York City, and from every State we have had reports of cases of sporadic type, so called. Dr. Williams has called my attention to the fact that the cases in Virginia are in the most isolated districts, in the mountains, and almost always well off the railroads; they are single cases, and do not spread. Now, is this the same disease as the epidemic form? If it is not the same disease, why have reports of these sporadic cases any more than to have reports of cases of scarlet fever or measles in connection with poliomyelitis? So that it seems to me that establishing the one fact, as to whether these sporadic cases are really the same disease and due to the same virus, is tremendously important. If we prove that they are not the same, that the virus is different—and I believe it can be readily established one way or the other through monkey inoculations—then we

do not need to adopt these rigid rules of quarantine in connection with isolated cases, which do not spread any way, even when nothing is done. If, on the other hand, we find that the virus is identical, then there is the question to settle, How did a single case get into a county when there has been no communication with the outside world? Once getting there, why did it not spread, when the disease appears to be so terribly infectious in New York in this epidemic?

It seems to me that this line is tremendously important, and that we should, just as soon as possible, have the necessary experiments to determine whether the virus in sporadic cases is the same as the virus of the epidemic cases, and whether we are dealing with the same disease. It appears to me that the place further to study the disease is on the edge of this advancing wave, where we undoubtedly get the epidemic form of the infection. I must confess that purely on *a priori* reasoning I can not see how this thing is a contact disease. I know it takes a great amount of bravery, and perhaps even foolhardiness, to say this; but we have the most extraordinary spread from house to house, and yet we have failure in the majority of cases, where conditions would seem to predispose to the dissemination of the infection in instances where there is kissing, fondling, and where the secretions are distributed in the greatest amount.

We were told yesterday by Dr. Frost that in 5½ per cent of the cases they could plainly trace contact, in 11 per cent contact was doubtful, and that by straining everything and counting every case where contact was possible, they could get but 22 per cent due to this cause. Then, how about the other 78 or 89 or 94½ per cent? If the infection goes from house to house, as it does, if it gets into isolated districts, as it does, and if we are dealing with a single disease, there must be some intermediate link. None of us can say whether it is insects, cats, dogs, or what not, but there must be some intermediate thing that is going to carry the infection from this house across the street, or across two back lots, and yet is not going to spread it right in the house among children who have fondled, kissed, and exchanged secretions in the most liberal manner possible. The investigation of these sporadic cases is, it seems to me, a very profitable line of research. If the sporadic cases turn out not to be the same as the epidemic cases, we do not need this rigid quarantine. If the virus is proved to be the same, then we know there must be in New York City and other places where the disease appears in epidemic type, something which is causing its spread. If it be an insect, let us say so. If it be contact, how can we explain failure to spread in the house, with rapid dissemination elsewhere? We can explain it first of all by susceptibility being uncommon. But where would we look for the greatest number of susceptible children?

Why, necessarily, among those of the same heredity; in the brothers and sisters of affected children. It would seem that some intermediate factor plays its part, and by studying these sporadic cases which do not spread and their environment, and contrasting them with and studying everything in the epidemic cases and their environment, we will be working along a fruitful line of research.

I want to thank you very much for giving me this opportunity to bring forward these points. I do not know whether they are worth anything, but to me they seem to be somewhat suggestive. [Applause.]

The CHAIRMAN. Is there any other matter to come before the conference?

Dr. WOODWARD. This might be converted into an experience meeting, but I think it would hardly be worth while putting this into the record. I have mentioned two cases which have occurred here within the last two weeks. One case occurred in one of our hotels and was probably imported from New York. It was promptly removed to the home of the attending physician, who was a relative. Some little while later a second case was reported, and inquiry showed that the mother of that patient was employed in the hotel. It was stated that she never had had occasion to visit the room of the first patient and had nothing to do with the case, being assigned to a different floor. Careful inquiry, however, disclosed the fact that on one occasion she had assisted the maid on the floor where the first patient had been in preparing the washable articles for the laundry, including those from the room of the patient. She has never shown any evidence of poliomyelitis, and up to the present time the investigations made have not disclosed that she is a carrier. Was the second patient a contact case from the New York patient?

Dr. ALBERT. In the absence of Dr. Frost, I would say, with reference to investigations of contact cases, the impression left by Dr. Levy was that in some cases only 5 and in other instances 10 to 20 per cent of the cases were contact cases. Dr. Levy asked what was the source of infection in the other larger percentage of the cases. If I remember Dr. Frost's report correctly, it was that of all of the cases of children in contact with poliomyelitis, only 5 per cent contracted the disease, or, considering some of the so-called abortive cases as suspicious, 10 to 20 per cent contracted poliomyelitis.

The CHAIRMAN. Is there any further discussion to come before the conference?

Dr. PORTER. Mr. Chairman, before the conference closes I want to offer a resolution, something on the line of that which I offered yesterday and withdrew—did not retract, as I thought I did, but withdrew—until the reports of the different committees had been sub-

mitted. We have now listened to those reports with a great deal of interest. They have been carefully prepared, and the framers are entitled to a great deal of credit for the prompt manner in which they have submitted them and the points which they have brought out. But they are rather lengthy for those who are going home to give to their people.

Mr. Chairman, while physicians, we are health officers also. The health officer and physician, while embodied in the same person, are two entirely distinct and different individuals. The health officer deals with disease so far as it is a menace to the general public, and it is his duty to protect the public. The physician is interested in the cure of disease. To the health officer it makes no difference whether the patient lives or dies, so long as the public is protected. Now, it seems to me that a concise statement of what we have done here and of our conclusions might be of some interest, and I submit the following for what it is worth:

Resolved, That it is the sense of this conference of public-health officials and of the United States Public Health Service—

1. That, although the producing cause or causes of infantile paralysis, or anterior poliomyelitis are not as yet definitely known, for in some instances individual and isolated cases of the disease do not seem to impart contagious qualities, and in other instances they have highly communicable and contagious properties, this being confusing both to the medical profession and the public, yet this conference is firmly of the opinion that infantile paralysis should be easily recognized and should be isolated and treated, either in homes or hospitals, preferably the latter, until more of the producing cause or causes are known.

2. This conference does not believe that quarantine—and by this is meant the interruption of travel—is at all necessary and discourages and frowns upon any procedure of this kind or character.

3. That it believes that supervision should be exercised over discharged travelers from known infected centers in order that they may be daily watched when arriving at points of destination, when so informed by the United States Public Health Service, and that sickness occurring among such children, of whatsoever nature, should be closely inquired into, that an early determination of the true character of the illness may be arrived at and prompt action taken to safeguard the public.

It seems to me that is the consensus of opinion, concisely put, of this conference.

(The resolution was seconded.)

The CHAIRMAN. You have all heard the resolution, and it has been seconded.

Dr. ALBERT. Did I correctly understand Dr. Porter to say that quarantine was not necessary?

Dr. PORTER. Yes, sir.

Dr. ALBERT. A little while ago we adopted regulations providing for quarantine.

Dr. PORTER. No; they provided for supervision over travel cases; quarantine, yes.

Dr. ALBERT. You have not that word in there.

Dr. PORTER. Well, it can be interposed.

Dr. BURKART. Well, it should be interposed before we vote for it. Will you read that again?

Dr. PORTER (reading):

This conference does not believe that quarantine—and by that is meant the interruption of travel—is at all necessary.

Dr. SWARTS. Leave out the word "quarantine" and put in "interruption of travel except under the rules already adopted."

Dr. MCKELVEY. I believe we all appreciate the good motives of Dr. Porter in offering this resolution, but we are mixed up enough in what we have already passed. I have voted for what has gone through as a whole, and I do not believe we want to go before the people with too many stories, conflicting resolutions, and statements. I am of the opinion that every member here will be able, when he returns home, to give his people an intelligent statement of the proceedings of this body and what has been done, and I do not believe that we want to rely upon any additional resolution at this time. Therefore I am opposed to any further resolutions of that character.

Dr. WILLIAMS. Mr. Chairman, it seems to me I can not agree with Dr. McKelvey, because much has been said that is pretty definite. It has been stated that the infectious virus is in the secretions of the nose and the mouth and in the intestinal secretions. That is a big point. As to the various means of this transfer from one person to another, that has not been so thoroughly determined. We know that 90 per cent of the cases have been in children under 10, 5 per cent between 10 and 16, and the other 5 per cent above that age. We have pretty definite directions based on this knowledge, and it seems to me that we can just give to the press these committee reports, the three which have been approved, and that that will be sufficient. If any State health officer wants to abstract these or make a press report based upon them he is at liberty to do so, but it seems to me that the resolution which has been read by Dr. Porter will very decidedly cause confusion, especially after the definite reports which have been submitted.

The CHAIRMAN. Is there further discussion of this resolution?

Dr. PORTER. Mr. Chairman, there is no desire on my part to thrust anything for further consideration on this conference, but I do know that these reports that have been submitted on interstate communication and supervision of travel and the care of the individual patient are too voluminous to be gotten into the public press and before the people, who are already confused on this subject. I have

merely attempted to put into concrete form what has been arrived at in the discussion.

Dr. COLLINS. A question for information, if you please. These reports will all be summed up in the bulletin? I understand that to be the case.

The CHAIRMAN. They will all be published in book form.

Dr. COLLINS. I mean as a whole?

The CHAIRMAN. The entire report of this conference will be published; the remarks of all you gentlemen, and everything connected therewith.

Dr. PORTER. That is all true, that these reports will be published and that health officers will receive them, but the general public of this country will not get them. They do not see them unless they write here and through the courtesy of this bureau are furnished a copy.

The CHAIRMAN. I will say, for the benefit of the conference, that we have not been without newspaper men since we started, and the newspaper men have kept pretty close track of what has gone on here, and have published fairly accurate articles on what has happened.

Dr. RANKIN. The reason I have not enthusiastically seconded my friend's resolution here is because I am going home to publish my own statement, and I am afraid that my report might not altogether agree with that. I am going to tell the folks that we do not know a "blooming thing" about it, and I am going to tell them that there is a greater incidence now in the cities, with all of your control, than there has been in the cities in the past, with no efforts toward control. I am going to tell them that the present methods are worthless. Now, if the conference wants to go down into North Carolina and give the folks there the idea that something can be done, all right; that is, you folks are going to give them the idea that you can do something, when as a matter of fact you can not do anything, and you know it.

Dr. PORTER. No; I beg your pardon, Doctor, I did not say that in the resolution. I only say there what we should do; and I think there should be some supervision over child travel. Now, whether it is done by the Public Health Service or by the individual States I do not know. In my own State—I can speak authoritatively on that subject—we examine all people coming in on through trains and on steamboats from northern points. We do not interrupt travel, but we exercise supervision over child travelers, and the municipal authorities are notified so that they can continue the observation and inform the executive officers of the State board of health if anything unusual happens. Now, I think that is about all that we can do.

Dr. BURKART. I call for the question.

The CHAIRMAN. The question is on the adoption of Dr. Porter's resolution.

(The question was taken and the resolution was not agreed to.)

The CHAIRMAN. The noes seem to have it; the noes have it and the resolution is lost.

Dr. WOODWARD. Mr. Chairman, there has been great benefit to those present by these interstate regulations being so promptly mimeographed and distributed. I wonder if it would not be possible to have those on local quarantine prepared and mailed, perhaps, to-morrow.

The CHAIRMAN. That will be done. I have asked Dr. Drake to dictate them immediately to a stenographer, and to-morrow morning they will be gotten out and mailed.

Dr. RANKIN. That will include also the forms that Dr. Lavinder and others have formulated?

The CHAIRMAN. Yes. Is there any further business to come before the conference? If not, a motion to adjourn will be in order.

Dr. BURKART. I move that we adjourn.

(The motion was seconded, and at 4 o'clock p. m. the conference adjourned.)

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