

(Full Minutes)

MINUTES

INFLUENZA-PNEUMONIA COMMISSION MEETING

APRIL 23, 1937 - 10:00 A.M.

PRESENT: (members)

Dr. Rosenau, Chairman
Fr. Frost
Dr. Maxcy
Dr. McCoy
Dr. Muckenfuss
Dr. Rivers
Dr. Christiernin
Dr. Dublin
Dr. Armstrong

(by special invitation)

Dr. Bullowa
Dr. Felton
Dr. Rogers
Dr. Lanza

Dr. Rosenau introduced the new members of the Commission.

Dr. Muckenfuss consented to act as Secretary of the Commission.

It was suggested that several copies of Dr. Rosenau's summary of the work of the Commission up to this time be duplicated and distributed to the new members.

REPORT BY DR. MUCKENFUSS:

Dr. Muckenfuss stated that there were two phases to the activity supported from the grant by the Metropolitan Life Insurance Company during 1936-1937 — the first on pneumonia, and the second on influenza. Certain pneumonia studies have been made, but an analysis won't be possible until all the information is in. When the work is finished we will have some index as to the adequacy of laboratory service and its potential quality.

Dr. Muckenfuss gave a resume of the experimental work with the influenza virus being carried on at Letchworth Village, in collaboration

with Dr. Thomas Francis. Letchworth Village is an ideal place for an epidemiological study, as it is quite an isolated spot. They have eight units (with about 80 patients in each) that have no outside contacts.

One other experiment is being conducted with the influenza virus in order to get some information on the rate of deterioration.

Dr. Armstrong: It ought to be understood that not all of this is being financed by the Metropolitan. No doubt other measures and other resources go into this program. Our contribution during the last several years has been an item of $5,000.

Dr. Muehlenfuss: I am carrying as much as possible on the City payroll. This grant from the Metropolitan is used in the form of a supplement.

Dr. Armstrong: Dr. Muehlenfuss might outline what his plans are for the following year, and we might determine whether it is the recommendation of the Commission to continue our appropriation.

The Chairman asked the members of the Commission if they wished to follow this procedure. Before they proceeded, however, Dr. Rosenau said that while the Metropolitan Life Insurance Company has been generous, both in spirit and in substance, in supporting this work over the 19 years that the Commission has been in existence, the results and accomplishments have been far out of proportion to the money subscribed. In other words, during these many years, the support of this Company has actively aided in the enormous amount of work which otherwise could not and would not have been done.

Dr. Dublin: (to Dr. Muehlenfuss) - What do you think is likely to come out of your survey of laboratory facilities in the hospitals in various places in New York?

Dr. Muckenfuss: There is a great deal of effort to continue that in Massachusetts and other places. If the city will appropriate a sufficient amount of money to make serum available and to make skilled clinical consultants available, then the basic information concerning pneumonia typing laboratories will be absolutely essential in order to go ahead.

As to work for this next year, I am assuming that the city will give increased support to work on pneumonia. I would like to put the entire amount of money available, if any, to use on influenza, so that we can increase the scope of this work. We have been experimenting at Letchworth Village with influenza. We have gotten a certain amount of information. We have a group of patients who live under the same conditions for many years, so we can keep track of them and we can get some idea as to what happens following an outbreak. We will know how long the serological immunity will persist, and then with vaccination we can determine roughly the antibody level and how we can expect that to last. This means a certain amount of equipment and supplies, which can partly be bought from the city.

Dr. Armstrong: Our fiscal year has always been, since the beginning, July 1st, so that appropriations that have been made, have been made available at that time, and Dr. Felton and Dr. Muckenfuss still have a little left to carry them along until July 1st. Presumably, the request for the next fiscal year will be the same as last year — $5,000.

Dr. Muckenfuss: I think so, if the entire amount can be converted to influenza.

Dr. Dublin: Do you think that would be adequate.

Dr. Muckenfuss: I am not sure. I think with the amount of support we can get from the city, we can extend the program. We can extend it to one other

institution. In Kings Park we can make similar arrangements. They have about 3,500 patients. That is for the insane, and will probably be somewhat different. But I think $5,000 would be a decided help and we could keep going.

Dr. Rosenau: Could we act now, or should we wait until later, for the Executive Committee meeting?

Dr. Dublin: I think it would be better to wait until we hear the rest of the reports and see how the whole picture looks. Would it be possible to utilize this same opportunity and the same personnel to take the work a bit further, and use it not only for immunizing against influenza, but also for the possibility of immunizing against pneumonia with Dr. [illegible]'s vaccine?

Dr. Frost: I think that $5,000 is an exceedingly small sum for the work.

Dr. Muckenfuss: As to making a definite request for funds, I didn't know what the attitude of the Commission would be, nor how much they could afford. I had planned to ask for the same amount that the grant has been for several years. I would say that the majority of the expense so far has come from the city budget. I don't mind doubling the request. That would put it on a safe basis and would carry on the other institution as well.

Dr. Rosenau: May we leave Dr. Muckenfuss' request just this way until the others have reported, and then come back to see what the decision of the Commission is?

Dr. Armstrong: The probability of immunization against influenza is that it is sufficiently promising to warrant going ahead with an investigation along these lines. There has been a lot of skepticism about it. If the Commission feels that there is enough promise in it to warrant going ahead along these lines then I think we ought to seriously consider doing it perhaps more adequately.

Dr. Buckmaster: As a member of the Health Department staff, I can't think of an epidemic that would constitute a greater emergency in the city than a severe epidemic of influenza. For that reason, I'd rather work pretty actively on something like that in an attempt to control it than on other things which are less important but on which you are sure of getting results.

Dr. Rivers: I don't think we ought to close the discussion of Dr. Buckmaster's activities for the next year until we have everything under consideration. I am doubtful whether we will very soon get a vaccine for influenza. I am not so sure that vaccination against influenza is going to save lives. I think there are two things in the offing that this Commission should consider and back very heartily, and that is development and use of rabbit serum. Prontylin is undoubtedly here to stay. We have got to get to the bottom of that. Streptococcus pneumonia has been treated with that and it has been treated successfully. If we are going to have an epidemic of influenza in New York City, then we ought to know something about the handling of these things.

REPORT BY DR. FELTON:

It is a little bit hard to explain exactly what I am doing because of the difficult chemistry that has been involved in tying up principally the OH groups, building up a molecule which is more antigenic than the specific polysaccharide by the spreading of the antigen to different types. We have tested 23 individuals and we got a higher antibody count against II, III, VI, and XVII than we did from type I. In other words, I think that it will be definitely possible to develop an antigen which is the mother substance,

so to speak, of the fixed types I, II, and III. Whether it is possible in IV, I will not even predict. I split up the cells to see what substance was antigenic. I found quite definitely a good many different methods of decreasing the antigen, but that the polysaccharide contains from 10 to 1000 times more activity than you get from the intact cell, and that the rest of the cell has no antigenic effect at all outside of producing precipitines for the proteins that are present.

We have continued the study of the antibody production with the active polysaccharide in different age groups. We started first with prenatal, up to 79 years. We have studied now around 400 individuals, injecting them with 2 mg. of pneumococcus antigen, and 14 days later testing the blood. We only had three cases in which to measure the transfer of antibody from the mother to the child and, strange to say, we had no indication whatsoever that the pneumococcus antibody passes through from mother to child.

In the 15 months group, we have 11 cases, without any response at all, no antibody production. Beginning at 15 months up to three years, there is a definite stimulation of antibody with the 2 mg. dose. From 3 to 15 years of age, it is really remarkable the ease with which the antibody is produced. In the age group 15 to 25 (C.C.C. boys), the antibody response was a little bit less than the younger age group, and then it tapered off, up to 79 years. The older you get the more difficult it is to stimulate antibody to the same degree. We only had about four cases out of the 400 that did not respond at all. Of these four cases, one was 18 and the others above 35. This was with one injection of the antigen.

With reference to the field study, the attempt to influence an incidence to pneumonia is of course still inconclusive. Briefly, I will state

the numbers immunized:

1933-34	3,126
1934-35	14,043
1935-36	14,881
1936-37 (to 3-1-37)	9,631

Out of the total of 41,681 immunized, there were 37 cases of pneumonia. For the same period, there were 82 cases out of a total of 43,593 in the control group. In other words, a 50% reduction in incidence. The interesting thing to me has been the fact that there have been no deaths in the specific types in the immunized groups. (type II's).

The picture has been substantially the same in the four years that the work has been going. I might add here that in inoculating these large groups of individuals, it is quite definite that you have to look into the method of preparation of the polysaccharide to get the form which is antigenic and non-toxic.

(Dr. Dublin was asked if he had any comments on the figures cited by Dr. Felton.)

Dr. Dublin: The analysis has been concentrated on the material from the C.C.C. experiment for 1935-1936. It seemed to me that this was the best of the experiments to date. I should say that even for this period, '35-'36, at the beginning the returns looked as possibly being unworthy of mathematical analysis. It was suggested that perhaps the inoculated group was not exactly a fair sample of the total group, and that there were large numbers of those inoculated who had been lost track of. So with all these doubts in my mind, it was finally arranged that I should go up to Boston and see the gentlemen who had carried on this experiment, look at their records, ask questions

about the nature of the follow up; and out of that contact so many difficulties were cleared up that I felt that the analysis and results would be reliable. To be perfectly specific, a summary table was prepared by Colonel Symonds, showing the mean strength as of a certain time, the number of men inoculated, the experience, both cases and deaths, of lobar pneumonia in the inoculated and the controls. In addition, there were columns showing discharges on the one hand among the inoculated and the controls, the number of enrollees during the period of the experiment, and the number of transfers. What worried me were these additional columns of enrollees and transfers. I couldn't tell whether these people had been included in the mean strength or were additions. I couldn't tell whether the cases of pneumonia which had occurred had been included. I suspected that they were not included, but when I got to Boston I found that they had been. So, once again, we went at this thing, taking two groups - 14,881 inoculated boys, and 17,352 in the control group. There were 18 cases of pneumonia and one death in the inoculated. In the control group there were 39 cases and five deaths. There were no cases and no deaths of type I and II. My general impression is that a workmanlike job has been done in the planning of the experiment and also in its recording.

(Dr. Ballows entered at this moment and was introduced to the new members of the Commission.)

Dr. Dublin: On the basis of the number exposed and the number of cases, we made the usual test of significance and arrived at this conclusion: that the chances are 3 in 100 that this difference is due to some inherent factor which distinguishes the one group from the other.

Dr. Rogers: We had an experience which overlapped that is interesting. A year ago last December, we had about 165 men in a C.C.C. camp in the central part of the state, of whom approximately one-fourth were from Montpelier. All of that group, with one exception, were immunized with Dr. Felton's antigen. We proceeded to have a type II outbreak in that camp, in which there were 8 cases. The only one of the Montpelier men who came down with type II was the one who had refused immunization.

Dr. Armstrong: Apparently there was an outbreak in the Worcester State Hospital. In this connection, I'd like to read a couple of paragraphs from a recent letter from Dr. Shillie:

> "The antigen was given to some 1500 people on March 1, 2 and 3. One man developed type I pneumonia the day following his vaccination; another on the fourth day. The second was most interesting. He developed a chill, fever 104, cough and white count 16,000. Sputum showed type I pneumococcus. X-ray suggested lobar pneumonia. No physical signs in the lungs. After 48 hours temperature dropped by crisis and he was well in 4 days.
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> "A third man who did not have the antigen developed type I lobar pneumonia on March 6. The epidemic then ceased abruptly. The results were so striking and so extraordinary that I can hardly believe it. Carriers persisted and we are following them carefully."

Dr. Rosenau: I think that if Dr. Felton were to sum the situation up, he would still say that it is in the experimental stage and that the results are encouraging. But before we go further, perhaps to get the complete picture, he might like to say something about the chemotherapeutic side.

Dr. Dublin: It will only take a moment to say that when this seemed clarified, I felt justified in writing as I did to Dr. Felton. I saw Colonel Siler Sawyer and his associates in the school, and I also saw Colonel Gentry and his associates at the farming establishment. They were obviously greatly

pleased with this result, and I have some assurances. It has not been guaranteed, but there seems to be very good indications that the Army will, in connection with the C.C.C. work this year, plan for the inoculation of the group in all the C.C.C. camps, and will do it under a system which will permit the control of the experiment. It is also possible that they will apply the antigen to the whole Army establishment.

Dr. Frost: I think there is a great advantage in that.

Dr. Dublin: The Army people would be subject to a good deal of encouragement. Those of us who have contacts with Colonel Sellers and Colonel Gentry, and the Surgeon General of the Army, could render a very valuable service by giving them a feeling that there are a good many people interested in watching this experiment. And I think the chances of its going into operation this fall is very much better.

Dr. Frost: There still is no chance of getting the Navy group, is there?

Dr. Rosenau: No progress whatever has been made.

Dr. Felton: This study on chemotherapy is a revival of the efforts that I started back in 1916. During this period up to the present time I have tested some 1600 compounds. This year I have gone over 248. All the work is done on mice. Briefly, as far as streptococcus goes, I would say that we have three compounds that are equally active to this prontylin. The difficulty in prontylin is the effect on the blood forming cells, and degeneration of the hemoglobin, which is toxic. The problem now is to find out whether they are destructive to any physiological functions.

Without exception, mice will not stand repeated injections. The 17 compounds which have been discovered for pneumococcus all destroy some

physiological function, although not killing the animal. None of these 17 compounds should be tried, except perhaps in meningitis. In pneumococcus meningitis it might be worthwhile, and yet it is so weak compared to antibody, that I prefer to test another 1600 compounds in order to get something which is comparable in its activity to that of antibody.

Dr. Armstrong: Again, I might summarize for the information of the Commission. The contribution from the Metropolitan to Dr. Felton's work has varied in amount from time to time. During the last few years, up until this fiscal year, the contribution that we made toward his work was $5,000. Dr. Felton receives more than that from other sources, so that his total budget covers the activities he has been describing. Last year, upon the recommendation of the Commission, some of you will also recollect that this amount was doubled to $10,000, partly because of the necessity for the purchase of special equipment that was required at that time.

Dr. Felton would perhaps like to add a word on the proposed work for the next year.

Dr. Felton: It will be a continuation of the same thing. That is, chemistry of the antigen, with the possibility of isolating or producing a universal antigen. I think you can isolate an antigen without any chemical manipulation, as far as human beings go. (III's as well as II's). Another thing is the study of the antibody. Everything is against the conception that I have had that antigen is present in the antibody molecule. Yet I have quite definite information now that by isolating a substance from the antibody it will produce immunity in mice and also in human beings. But whether or not that is due to a broken down antibody molecule and has revived its activity after

its injection, or whether it is really a polysaccharide, is a matter for future development. But if the antigen is a part of the antibody, then the synthesis of the antibody is just as sure as chemistry.

Dr. Rivers: If you put two mg. of your antigen into a human being, and if you bleed that person out, wouldn't you have more than the two mg. injected? The human body would have to make the antigen. Metabolism is going on all the time.

Dr. Felton: If you will limit that to the injection of two mg. and not repeat a dose, then the amount of antibody that is stimulated by those two mg. would attach itself to a molecule of about one-half the size of the polysaccharide as we think of it now. This polysaccharide has a molecular diet of about 1000, I would judge. The molecular size may be 4000 or 40,000. In the formation of the antibody, it may be broken down or it may be only one unit.

Dr. Armstrong: It is very probable that the field observations can be carried out now with much more thoroughness and accuracy than it has been in the past. Dr. Felton hasn't as yet indicated to us, other than in a general way, what his plans are for the next year. I assume you could utilize an appropriation next year similar to the one for last year?

Dr. Felton: That would be ideal. It would allow me to work on all of these angles. Chemotherapy is the expensive part to handle.

(The Chairman recommended that Dr. Felton's work be continued with an appropriation of $10,000, beginning July 1st, decision to be arrived at in Executive session.)

REPORT BY DR. BULLOWA:

(Dr. Bullowa had with him some recent reprints of published papers, which he turned over to the Chairman.)

Dr. Bullowa: My work has consisted largely, for the last 10 years, in taking statistics as to the distribution of the various types, and then with the use of serum. At the present time the problem has taken a very interesting and I think promising turn, and that is the introduction of rabbit serum. We have been working with a refined rabbit serum which is being made for us by the Lederle Company, and with a processed rabbit serum for types I, II, XIV, and XIX, which is prepared at the Rockefeller Institute, and which they have generously given us. We are alternating the patient with type I with the horse serum and then with the processed rabbit serum, because we have no refined rabbit serum for this type. Where we have two kinds of rabbit serum, we are alternating the refined and the processed. I think it could be said with considerable assurance that success in serum therapy of these pneumonias depends upon getting the maximum amount of antibody in contact with the organisms in the shortest possible time. Recently, we have had patients who have been well in as short as 6 to 8 hours after the administration of a single dose of serum. I think the refinement of the serum is very important. I think the rabbit serum permits not only a more rapid sterilization of the blood, but also it seems to penetrate into the lung with greater speed. We have had to devise some methods of testing for sensitiveness and that has been done.

Dr. Rosenau: What is there about rabbit serum that makes it better than horse serum?

Dr. Bullowa: There is one thing that is very important. Although you cannot be very sure of a zone of protection for rabbits, I found occasionally there may have been a zone for patients with the use of horse serum.

Dr. Rivers: If you put horse serum into an individual intravenously, no antibodies get into the patient. If you put rabbit serum, antibodies get into the empyema.

Dr. Bullowa: That will happen occasionally with horse serum.

Dr. Rivers: We think it is significant because it has happened so frequently with rabbit serum.

Dr. Bullowa: We have a lot to do yet. We still get severe reactions from rabbit serum. In addition to the types for which I have demonstrated the value of horse serum, we have sufficient data now to warrant the publication of an article with reference to type XVIII. Pneumococcus XVIII has had a mortality of 26% in the non-serum cases. In the serum cases the mortality was 6%. We had 16 cases of bacteriemia without serum treatment and 12 died. We had 5 cases treated with serum and one died. The difference is striking. In addition, we have serum for XIX and for VI. We have had one for type IX, and this type is a very severe disease. We also have now a preparation for pneumococcus XII, but we haven't enough data to report on it.

With reference to our observations regarding sulfanilamides, in the last eight years we had one pneumococcus III patient with a blood invasion recover. We have been working with Dr. Hochstrasser's help on this question of the pneumonias due to streptococcus. In some of these patients we have given sulfanilamide and in some we have given the convalescent scarlet fever serum. In two patients with streptococcus pneumonia, they both received sulfanilamide

and they both went on to an empyema. One of them died, and I believe was not favorably influenced by the sulfanilamide. I think the death may have been in part brought about by the drug.

Dr. [redacted]: Are you prepared to give your plans for the ensuing year?

Dr. Bullowa: I have accepted only such problems as I could handle with the facilities and personnel that I have. One of the things that could be studied profitably is the blood stream. Then there is the problem which comes up with the use of rabbit serum. I think there should be a study made to find some method of determining adequacy of serum dosage. In the treatment of serum, that must be solved if we are going to use it most efficiently. Another big problem is, of course, the correctness of typing. That I am sure is going to interfere unless it is met by adequate technicians, and adequately trained personnel.

Dr. Armstrong: Again, by way of general information, so far as the Metropolitan is concerned, Dr. Bullowa's work has been a minor one relatively. It has been $1000 a year, and this year it amounted to $2750.

Dr. [redacted]: Would that carry you along satisfactorily?

Dr. Bullowa: It won't allow me to do the things that I have outlined. It helps tremendously but it is not adequate.

(It was recommended that Dr. Bullowa's appropriation be considered at Executive session, along with the others.)

REPORT BY DR. [redacted]

Dr. Armstrong: The members of the Commission who have been here previously will remember that we asked the Commission's advice concerning cooperation with other agencies here in New York City, in another phase of this whole problem, aside from what our research activities had been, namely, a practical applica-

tion on a thoroughgoing statewide basis, following somewhat the precedent of Massachusetts, of what we know concerning pneumonia control. Working with the State Department of Health and the State Association of Public Health Laboratories, and other groups, we agreed to make a contribution for an indefinite period, on an annual basis, with the Commonwealth Fund, to underwrite this program. It is under the special guidance of the committee of which Dr. Cecil is chairman. The State Department was fortunate in the beginning in securing Dr. Rogers to undertake the heading up of this work. I thought it might be of interest to the Commission to have a word from Dr. Rogers as to how the work was going.

Our appropriation here is on a somewhat different scale. It has been for the first two years, $20,000 a year, matching a similar appropriation from the Commonwealth Fund, and underwriting a rather extensive educational program.

Dr. Rogers: We have construed our principal responsibility to be that of application of the advances which have been made in the realm of clinical and academic sciences. We have not felt, as regards serum at any rate, that our responsibility was any longer an experimental one, but that it was accepted and established that type I serum, for instance, was of unquestioned value. We are trying to establish a control series and trying to find out a few facts which are relevant.

You might be interested to hear what has happened with serum. Of course you know Dr. Wadsworth's laboratory has been producing and distributing serum for 20 years or more, but it has only been within the last year that the State Laboratory distributed concentrated serum. That was coincidental with the definite onset of our program. In the past, our information with respect to the number of cases treated every year with the old concentrated serum was not too accurate. So comparative figures are not of very much value. However,

in 1934 there were about 84 case reports received from the whole state, on the use of type I serum. In 1935 there were about 130, and in 1936 the reports are of course still coming in in small numbers. We have received 931 reports to date. I don't believe that represents an increased use of serum. We can't estimate how much of it does. Of these 931 cases, we have not broken them down into very fine units because, as I say, the work has been done so carefully in the past that I have not felt in a hurry. I wish to wait until our 1936 figures are complete and perhaps we can then add to them another 1000 or 2000. Of the 931 cases, 74 must be excluded because we do not have definite and acceptable information with reference to typing, and in that unknown typed group the case fatality rate was 28.3%. In the remaining 857 cases which were known to be type I (as reported), we had a crude case fatality rate of 18.1%. That is a high figure but it is a crude rate, and includes every patient. It includes all stages of the disease, and all ages. Moreover, just as a matter of interesting comparison with the crude rates, the Massachusetts series showed a very much better rate, running around 12%. We wondered where some of that difference might reside and we found that approximately 22.5% in our type I treated cases were over 50 as compared to about 12% or 13% in the Massachusetts study. We have a small series of what we call controls, consisting of 71 cases for 1936. This year I think we will have a larger number. That series had a case fatality rate of 26.8%.

There is a great need of epidemiological work in the study of pneumonia which has never been adequately done in the past, not because of insufficient interest, but because of insufficient opportunity. Ours, I think, is a unique opportunity to carry on some of that type of work. We have

endeavored to get back to the actual promotional side of the program. It is a fine thing to have serum available, but it has to be put into practical use. The State Medical Society and the Department of Health and other agencies concerned have cooperated greatly in this program. We now have 40 out of 56 upstate county medical societies, either under our auspices or that of the State Medical Society. Five county medical societies have held second meetings to follow up their original meetings.

Six of the 14 nursing districts in New York State have had special institutes on pneumonia, and we are getting numerous reports of independent meetings which various nursing and medical groups are originating, which are not under our direct auspices.

With respect to typing stations and serum distributing stations, the number has been substantially increased in both instances. Typing stations under state approval maintained by a system of rigid standards have been increased from 77 to 112. 28 counties only have county laboratory service, 14 cities have city laboratory service.

We have been particularly interested in the last winter in developing our lay educational program. Let us assume that we have the serum available, adequate typing facilities established and the physicians thoroughly familiar with the use of serum. There remains the important fact that the laymen must be trained to consult the physician in time for serum treatment to be most effective. We have taken that as our cue in education. That is to try to get across the simple point of recognizing the early symptoms of pneumonia and their significance, and have tried to steer clear of the temptation to discuss the prevention of pneumonia.

In Franklin County we carried out an experimental program, in connection with the Home Bureau in New York State, which is a powerful rural organization, comprising some 27,000 members. We undertook to have a series of three study courses on pneumonia with their 12 home bureau groups. The course is planned somewhat as follows. The leaders of these groups met in Franklin County city myself,, our instructing nurse and the district health officer for a full day institute, at which time we went over the entire field, and presented them with detailed mimeographed outlines. They were given a whole morning on the subject of pneumonia, the background material, and secondly, they were given a demonstration of home nursing care in pneumonia, not with the idea of teaching them but rather with the idea of showing them how much they had to learn. Then for the third demonstration, which I hoped would be constructive, I wished them to turn their attention to the analysis of the nursing facilities in their community and an analysis of the laboratory facilities, and to stimulate a community interest. I had a stenographer take notes of these meetings and I have been trying to compose a questionnaire to these ladies to find out whether they had learned anything.

One remaining thing - we have with considerable difficulty finally gotten a system instituted where we can follow the type incidence as it occurs in the various parts of the state. Type I this year has run 24.4% of all our cases, type II-4.3%, type III-16.1%, type V-3%, type VII-5.4%, type VIII-3.8%. Types VI, IX, XIV, XVIII, and XXXII have all been very prevalent but I can't speak of them in terms of percentages..

I haven't spoken of our plans epidemiologically. It is interesting to point out that we have during the past season encountered five specific epidemics. One small one occurred in Letchworth Village, but no typing could

be done there. It is interesting to note, by way of comment, that the general duration of these outbreaks was about one month (I am quoting from memory).

Dr. Armstrong: Our interest in the New York State program was partly, of course, experimental and largely a demonstration one. We hoped to be able to cooperate with other agencies in setting up a program that would result in that state, and in other states, of the arrangement of adequate provision under public auspices for typing, serum therapy, medical, nursing and lay education. I don't know, but from what I read in the papers, perhaps our demonstration in New York State has been completed. You probably noticed last week that the state legislature passed a bill, and Governor Lehman has probably signed it by now, appropriating $400,000 annually, presumably for an educational pneumonia program in New York State. Whether we shall need from that angle to contribute anything further to this work remains a question.

Dr. Rogers: It was not an annual appropriation, but it was implied that it would be annual.

Dr. Armstrong: I suggest that we have lunch and discuss this and any other matters at lunch if you are agreeable. You might look at the charts on the walls, which refer to the exhibit being prepared by Dr. Dublin and Dr. Cecil and myself for the A.M.A. meeting, with the advice and help of Dr. Rogers. At the A.M.A. meeting this will reach a large number of physicians throughout the country, and is similar to exhibit material which is being used by state medical societies, and health agencies in all parts of the United States and Canada. At the A.M.A. meeting, in addition to the exhibit, we have been fortunate in arranging for an adjacent typing booth under Dr. Sullam's supervision, and another room in which talks and lectures will be given by Dr. Rogers, Dr. Heffron, and others, on pneumonia.

(The meeting adjourned at 1:00 P.M. for luncheon)

INFLUENZA-PNEUMONIA COMMISSION

MEETING OF EXECUTIVE COMMITTEE
Afternoon Session - April 23, 1937

* * * *

Present: Dr. Rosenau, Chairman
Dr. Muskenfuss, Secretary
Dr. Frost
Dr. Rivers
Dr. Maxey
Dr. Armstrong
Dr. Dublin
Dr. Christiernin

Dr. [redacted]: Dr. Muskenfuss last year received $5000 to carry on his work. If I remember, that is his recommendation for this year. There is some question about raising it to $10,000.

Dr. [redacted]: With further experience with the present set-up, I would be in a better position to know exactly how much was needed. An accurate estimate at the present time is impossible.

Dr. [redacted]: I would suggest that Dr. Muskenfuss send a definite letter about the first of June, making his specific request, as these questions are taken up at the Welfare Committee meeting of the Board at the June meeting. If by that time Dr. Muskenfuss feels he would like to modify or amplify his program for next year, we would be guided by an expression of opinion of the Commission. In other words, the Commission might now put its approval on such additional activities of Dr. Muskenfuss.

Dr. [redacted]: May we then quote the figure as no less than $5000, with the understanding that a sum not to exceed $10,000 will be considered, if he finds it necessary?

Dr. [redacted] stated that Dr. Felton will cooperate with Dr. Muskenfuss by providing him with antigen for his study.

Dr. Muckenfuss asked the group's opinion about carrying out two studies on the same patients. It was felt desirable to divide them into three groups - one-third to be inoculated against influenza; one-third against pneumonia; one-third to act as a control group.

Dr. Muckenfuss stated that even with the program he had outlined, he could use $10,000 a year. Dr. Francis will work with him.

A Motion was made that Dr. Muckenfuss be given a grant of $10,000 a year for work to be done under his supervision, which motion was carried by the members of the Committee (Dr. Muckenfuss not voting).

DR. FELTON APPROPRIATION

The Committee found his report unusually interesting. Dr. Rosenau felt definitely that way. Dr. Dublin got the feeling that it was sketchy and profuse, but didn't know whether it could be remedied, and asked for recommendations. He appears to be handling many diversified subjects. Dr. Dublin felt that the money could best be used if concentrated on one specific phase of the problem, which in the judgment of the technicians here seemed most promising.

Dr. Armstrong stated that Dr. Felton has been getting money from other sources besides ourselves, from chemical concerns interested in chemotherapy, etc., although ours has been for pneumococcus vaccine, and he pools all the money received. We cannot of course tell him to give them up.

Dr. Rosenau explained that when Dr. Felton talks about his work it seems much more disbursive than it actually is, and that while it gives the impression of not focussing, if you look at Dr. Felton's work for the last 10 or 15 years, he has consistently been seeking the chemical or other

basis of pneumonia. If he compares it with typhoid or with chemotherapeutic agents occasionally, they never take him far afield from the road he is travelling. Unfortunately he doesn't put his best foot forward and doesn't know how to explain his work. Dr. Rosenau thought, however, that Dr. Felton's results justify our support.

Dr. Rivers was in favor of giving him the money. He knew Dr. Felton before he went to Harvard and was associated with him in school. Dr. Rivers felt he ought to be told to do things occasionally. He probably won't pay any attention to them. He ought to be able to duplicate his antigen year by year, and be able to state what is in it. If he is going to use the material on human beings, he ought to be able to reproduce the stuff regularly, and we would like his statements to be backed up by supporting data, and would like to know what grounds he has to believe that he might be able to get a substance that would immunize against all things. It seems unlikely that he would, although this may be probable for one or two of the polysaccharides, or various pneumococci, because some of these substances are allied chemically.

It was suggested that a small sub-group of the committee advise Dr. Felton, but Dr. Rosenau felt that if we wished to support him, we would have to do it the way Dr. Felton wants it done.

Dr. Rivers and other committee members wondered how we could get the most out of the money we are giving to Dr. Felton.

Dr. Dublin asked if there was a chance of our succeeding in having Dr. Felton take an associate - some qualified person, agreeable to him - to work side by side with him.

Dr. Rivers thought this a good idea. (No decision was definitely arrived at by the group.)

Dr. Buchanan had considerable doubt as to the accuracy of the material developed by Dr. Felton when duplicated several times over, for large numbers of injections, and wanted to know whether he should make it himself.

Dr. Armstrong explained that there are several commercial sources of the biological materials originated by Dr. Felton - the Lederle Laboratories being one such source.

Dr. Dublin stated that he would like to see the C.C.C. camp experiment repeated here in the City, as well as among Metropolitan Life and New York Life employees, etc., but we would have to be sure of the reliability of the product.

Dr. Manny expressed the opinion that Lederle or any other commercial company would therefore stand between the product and the public, thereby guaranteeing its safety.

Dr. Armstrong said that we would exercise that caution in advocating its use - refer to it as a standard safe product produced by a biological house. Aside from that he could see no satisfactory way of controlling Dr. Felton's idiosyncrasies, and believed we were justified in giving him the money.

Dr. Rivers made the motion that we give him $10,000, and that he do what he pleases about it. This was approved by the other members of the committee.

DR. BULLOWA GRANT

Dr. Rosenau stated that Dr. Bullowa had asked for $2750, but would like to have amount extended to $5000, as he could do much more if he had a little more money.

Dr. Harvey made the statement that Dr. Bullowa is the only clinician he knew of, being subsidized at the present time. He also receives support from private funds.

Dr. Dublin believed that Dr. Bullowa was one of the hardest working men he knew.

Dr. Armstrong asked whether Dr. Bullowa's work on streptococcus pneumonia is of unique importance?

It was the belief of the group that he was trying to spread his efforts too far. He was primarily a clinician, who depended on Dr. Park. He has some skilled technicians. He goes to the laboratory fairly frequently. He has acquired a good knowledge of the disease, but not a skill.

Dr. Armstrong was of the opinion that Dr. Bullowa's close relationship with Dr. Park, Dr. Muckenfuss, and the Rockefeller Institute served as a focal point for the practical application of some of their experiments.

Regarding the amount to be appropriated, Dr. Armstrong felt that in relation to the other grants, $2750 to Dr. Bullowa seemed about right.

We may be able to pull out of the New York State pneumonia demonstration because of the bill before Governor Lehman (since signed) allotting $400,000 to upstate New York for sera, etc., for pneumonia control, although some special studies might need our particular support.

Dr. Armstrong will talk to Dr. Godfrey about this. If we are able to cut our appropriation down and save $5000, we may be able to give Dr. Muckenfuss more.

Dr. Rosenau expressed the view that Dr. Bullowa was trying out various sera and their clinical effects, but that will be done in the course of time anyway. We are particularly interested in finding out something fundamental in the treatment of these upper respiratory diseases. That is not Dr. Bullowa's field, and we cannot expect anything of that sort to come from him.

Dr. Kerr believed however that this was an important link in following up laboratory findings on humans.

Dr. Muckenfuss pointed out that the new State law will not affect New York City at all; perhaps only indirectly in supplying sera when the local supply is inadequate. Dr. Bullowa's work is independent of the city, and is done entirely on money he has raised.

Dr. Armstrong told the group that Dr. Bullowa is not on the same schedule as the other appropriations, his being on a calendar year basis, coming due in the late fall, and therefore won't arise again, unless we want to make an additional appropriation for the current year, until next fall. It might be best in view of the uncertainties in connection with the State work, to let the matter ride, until we know how much our total will be.

Dr. Dublin asked whether we couldn't approve in principle the appropriation for next year.

Dr. Rivers made the motion, which was agreed to by all the members, that we approve an appropriation to Dr. Bullowa of at least $2750 for next year, the amount to be increased depending upon circumstances that may develop in the fall.

NEW YORK STATE PNEUMONIA APPROPRIATION

Dr. Armstrong raised the question of the Commission's formal endorsement of this appropriation, which we have been asking for the past two years. He stated that we wished to be guided by the advice of the Commission as to what we might do, or whether a practical demonstration along the lines of this campaign is worth while and warranted.

Because of the strong possibility that Governor Lehman* may sign the pneumonia serum bill in the amount of $400,000 for upstate New York, it may not be necessary for us to continue this appropriation, or at any rate we may be able to reduce the amount of our contribution of $20,000. Even if we are able to cut it down by $5000, we might be able to give Dr. Muehrcke more than the $5000 he definitely needs now. It was believed that this New York State program is a practical outgrowth of all the other activities of the Commission.

Dr. Rosenau stated that this gives an opportunity to learn more about the epidemiology of the disease, and therefore is directly in line with our work. Dr. Rosenau therefore raised the proposition that if it was the sense of the group that this appropriation was approved in spirit, its continuation would be recommended and the details would be worked out later. Since there were no votes to the contrary, our participation, if found necessary, was unanimously and enthusiastically supported. In the meantime Dr. Armstrong will consult Dr. Godfrey about future plans, if any.

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*Since this meeting, the Governor has signed the bill.

Dr. Armstrong informed the members of the Commission that we have the approval of our Board of Directors, beginning with our next fiscal year of July 1st, to present a very modest honorarium, amounting to $100 for each member and $300 for the chairman, in recognition of the time spent in these annual meetings, and in giving advice on this program. Dr. Rosenau expressed his gratification and that of the other Commission members, in whose behalf he stated that it had always been a pleasure and satisfaction for the members to come to the meetings. It was of course explained to the new members that over and above this honorarium, we would meet their travelling expenses for attending these meetings. Dr. Rosenau asked the Commission for its opinion as to the frequency with which the Commission might meet. In a general way it was felt that one or two meetings a year, in the fall, midwinter or spring, would be adequte, leaving for the interim other meetings arising out of emergencies. Dr. Rosenau will take up the arrangement for a suitable time in the fall for a possible meeting, through correspondence.

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Dr. Rosenau is planning to go to Washington to see his friends in the Navy, who he believes will be very much impressed if they knew the Army was interested, and might try the experiment in the Navy.

He will also visit Dr. Felton and talk to him along the lines suggested by the Commission. He will be receiving an increased amount this year for new work, out of which it was thought he could use $4000 or $5000 for a good assistant to help keep records straight, etc. These two activities by Dr. Rosenau had the endorsement of the members of the Commission.

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