Interview with Dr. Albert Sabin
June 3, 1976
Side 2; page 1

A And we are now August, September, October 1956. When this question of the type 4 polio virus was developed. I am trying—I would have to search the literature really whether it came out as a result of the studies on Chumokov's type 4 polio virus or whether from other sources that had already been established but at any rate we will have to check that.

Q My suspicion is that Melnick had done some work on aseptic meningitis in Kentucky and had discovered that it is a coxsackey A-7.

A Now wait a minute. The history of the acquisition of knowledge that coxsacki A-7 virus can be the only virus or might be the only virus associated with paralytic disease in man is a very interesting one. The demonstration subsequently and I don't know exactly now in time when tests were carried out with existing strains of coxsacki A-7 which showed that upon intracerebral inoculation in monkeys it produced a paralytic disease although it was mostly transitory. How the whole picture developed and at which stage it became practically established particularly there were cases in Scotland. There was a whole outbreak where coxsacki A-7 was involved. It is an interesting story that coxsacki A-7 of all the other enteral viruses coxsacki and echo, became the virus that was most definitely and frequently associated with paralytic disease in man although never in great numbers. Now whether it was before or after this happened I do not know now. At any rate here is what I wrote to Chumokov and Boraschilivah.
It was always both because they are a team, husband and wife. With three children. And they are two wonderful people. So it was always working together. I wrote to him in October, to them on October 20 and said the following.

Now I should like to let you know a little about the work that I have done with specimens of the AB-4 which was the polio 4 that Dr. Haybull has sent me. Haybull called it AB. I don't know what AB stands for. Number 1. The virus which he obtained. That means Haybull after five terminal dilution purifications in suckling mice which is completely neutralized now by coxsacki A-7 antiserum in confirmation of Sven Gaard's findings. Apparently Sven Gaard either reported officially some in a publication or through the channels of intercommunication was inoculated by me intraspinally in very large doses in three cynamologous monkeys. So obviously there were no other experiments at that time yet of the activity of coxsackye A-7 virus in cynamologous monkeys but at any rate I inoculated the particular one Chumokov's virus after five limiting dilution passages by Haybull (?)

None of these monkeys exhibited any paralysis but I had already shown before in our previous discussion that continuous mouse passages can select for virus that is not paralytogenic in monkeys. None of these exhibited any paralysis but all three showed very definite and wide spread poliolike lesions which I would not be able to differentiate from those produced by some of the attenuated strains of polio virus. So here then is his virus, Chumokov's virus which he calls type 4 submitted to
this passages that should eliminate contaminating polio viruses if it was there and yet even though it didn't produce paralysis, it produced lesions that as I said I wouldn't be able to differentiate from attenuated polio viruses. That means lesions in anterior horn cells of the spinal cord.

Number 2. The monkey kidney tissue culture adapted variant of Chumakov's virus. This is—it was adapted by Haybull which is no longer pathogenic for suckling mice and which yields a titer of ten to the 6.5 TCID₅₀ per ml. That means over 3 million tissue culture infectious doses was inoculated by me intraspinally in maximum doses in three monkeys. So now I was looking for another sort of branch of the Chumakov virus which on intracerebral inoculation produced some lesions but no paralysis and now I am testing the more sensitive routes, the spinal. No paralysis was observed and here you have to keep in mind it has had many passages in tissue culture of mice and here again focal polioliike lesions less extensive than those mentioned above were found on histologic examination. So here now we have monkeys inoculated with very large doses intraspinally and that behave like a very attenuated strain with the properties of polio virus. My own tests on this tissue culture adapted virus showed that it was neutralized by coccsackii A7 antiserum. And also by the convalescent monkey antiserum the 4, type 4 which you gave me when I was in Moscow.

3. I am still trying to think. A paralytogenic infection in monkeys. No. I am still trying. In still trying to obtain a paralytogenic infection in monkeys I obtained
an aliquot of a continrat (?) virus which you brought to Haybell. So actually what he brought to Haybell was cotton rats. A virus grown in cotton rats. As well as some spinal cord suspension from the first monkey which Dr. Haybell inoculated with your material. I want to say an aside here. I think that this material was brought to the United States with the mission which was I think sometime in March when Chumokov, Smoradinsov and Saloviak came. He undoubtedly left this stuff with Dr. Haybell to help decide whether it was or was not a type 4 polio virus so that Haybell had--it was a spinal cord suspension from the first monkey inoculated with human material which Chumokov brought him. Now I obtained these materials. That is the cotton rat material and monkey spinal cord material from Dr. Haybell, from material that Chumokov had brought and both of these materials from cotton rats and from the monkey were inoculated intraspinally into four cynamologous monkeys. No definite paralysis appeared in any of them. But widespread lesions again were present in all. Similar in character to those found with the materials that I described above. I have been informed both by Horstman and Bodian that they have also been unable to produce clinical paralysis in monkeys which they inoculated with the mouse passaged Chumokov-4 virus. Nor do they have any other type 4 material which will produce paralysis in monkeys. So you see we have now a larger group of people involved because it is a fundamental question. In view of these findings I have been unable to get any virus with which to do the projected neutralization tests in monkeys. Accordingly it becomes very
important to know whether or not we still have any of the virus from the spinal cords of the original monkeys which were used for inoculation with the human material. If you do still have it the important question is whether or not this or any other material that you may have of this virus will produce transmissible paralysis in monkeys. After all there is no other polio virus, type 1, 2, or 3 that is pathogenic for monkeys. That is, it would have been pathogenic for man also that fails to produce transmissible paralysis in monkeys except the attenuated strains. I would appreciate it if you could let me know whether or not you have such material. As the matter stands now, my histological observation with the virus purified by terminal dilution in suckling mice by Haybull would indicate the you had in your material a strain of coccusacki A7 virus that is capable of producing poliolike lesions in monkeys.

Aside from the letter now. This must mean by that time others had already established that coccusacki can produce either a nonparalytic type of polio in monkeys or sometimes a very transitory paralysis.

To the best of my knowledge. I then say in my letter. This is the first that any such finding has been made for any coccusacki virus and it would provide evidence of some generic relationship between the coccusacki viruses on the one hand and the polio viruses on the other. This is now an accepted fact. I say this as an aside. Unless your original virus which produced definite paralysis in monkeys can be gotten to produce transmissible paralysis in monkeys, it will not be possible to
test the hypothesis as to whether your original material also contained a polio virus in it. I shall be able to do no more work on it, this unless I can obtain some virus that will produce transmissible paralysis in monkeys. This is where the letter ends.

Q There is no further correspondence that I have found.

A And so the de numont is this. It is true that he had obtained material from a patient with paralysis which on inoculation into monkeys intracerebrally, and into cotton rats, produced paralysis and the immune sera which he had because he never got a second passage either in monkeys because the antisera, however, the convalescent sera which he had obtained from those monkeys that recovered, his monkeys that he inoculated with human material he recovered, that that serum would not neutralize type 1, 2, or 3 but did neutralize coxsacki A7 and that this then emerged as part of a developing picture of the role of coxsacki A7 in some human paralysis which subsequently was documented very well in many countries. I think the greatest documentation came from Scotland where they had sort of outbreak due to coxsacki A7 so the conclusion finally is the type 4 polio virus of Chumakov turned out to be coxsacki A7 and not a mixture of polio and others. It was actually the beginning of what ultimately came to be realized that while practically all. Not practically. The emphasis is on practically but let's say 99% of it, or 98%, whatever the figure may be of the syndrome of paralytic poliomyelitis was caused by polio viruses type 1, 2, or 3, there were still
other viruses in the enteral virus group of which polio virus came to be one along with coxsackievirus and echo viruses. A certain proportion of paralytic poliomyelitis in man usually transitory was caused by nonpolio viruses. And this became terribly important in the subsequent so-called vaccine fatalities. The few vaccine fatalities. Now, in a subsequent study in Cincinnati when I was following up paralytic polio. Paralytic polio mind you is a clinical, pathological designation. It doesn't mean caused by polio virus. This is terribly important.

Q That is very important.

A When I was following up all the cases occurring in the whole city of Cincinnati after vaccination prior to the polio season of something like 180,000 school children and I was testing for virus, there was one case of paralytic polio that occurred in a vaccinated child from whom I isolated echo 6, and this particular paralytic case, and there was no evidence. It was very clean cut of concurrent infection with a polio virus. And this child did not lose his paralysis. There was infantile paralysis. So that while generally speaking that small fraction of paralytic polio in man which is not caused by the polio viruses is as a rule transitory paralysis. It isn't always. So this is part of the interesting history of the evolution of our knowledge about paralytic poliomyelitis with, which has a direct bearing on vaccination and the use of the vaccine and the interpretation of results that follow and to show the infrastructure of knowledge that needs to be developed as part of a campaign for the control of an infectious disease.
Q Now, before we leave the Russian thing, I have one more question to put at this time. You know some years ago there was a wonderful book written by Sir Gavin DeBeall who is a great Darwinian scholar. And he wrote a book on the relation between French and English scientists during the seventeenth and the beginning of the eighteenth century when France and England were at war, and he titled the book in a very interesting way. He says the sciences were never at war. Here, from what you have told me is an extraordinary kind of collaboration between yourself and Soviet scientists.

A Not only myself.

Q But others.

A There were Swedes, Americans,

Q Right. How do the governments react to this collaboration. The cold war is still fairly cold in '56, '57, '58. For example, is it difficult for you to visit the Soviet Union. What does our own government say when you go off with the Sabin vaccine to the Soviet Union.

A Alright. In the first place I would like to comment on the title of Science is Never at War. The statement made in a book, that the sciences--

Q That's right. The sciences.

A The sciences are never at war.

Q Were never at war.

A Were never at war. I would say that it was correct if you say with sciences. But it should be supplemented by the statement that scientists have always been at war. So just as I--
with each other. Within the country, outside of the country. That it is of the very nature of science. And perhaps it has its good and bad aspects because I said I think at one other time that it was wonderful that science's dispassion but nevertheless it is important to realize that scientists are not. And the distinction here is that ultimate decisions that go into the structure of science are not determined by reference to a person, to a, during the period of Soviet geneticists say you had to refer to according to Lisenko. According to--it is not determined by authority. It is determined by reproducability.

So now let me, however, take up the question of scientists collaborating while governments are at total war. In the first place, the United States and the Soviet Union in 1956 already had had diplomatic relations for a long time. So I didn't have to ask anybody's permission whether or not I could go to the Soviet Union. I had my passport. I went to the Soviet Union. On the other hand, the Soviet Union was very careful to check everybody who was coming in. So whether or not I would get a visa to come into the Soviet Union was influenced by the decisions by people in the Soviet Union whether they recommended me to come. Why are you going to the Soviet Union. There were very few tourists still in 1956. The suspicion, the cold war suspicion was very, very great so I had free entry back and forth in the Soviet Union because the Ministry of Health, the Academy of Medical Sciences not just Chumakov along although his institute was in the Academy of Medical Sciences Institute said that they
wanted me to come. The United States didn't object. But I should point out that I was nevertheless tracked by the United States. The Soviets aren't the only one that have a good Secret Service in other countries. The United States is as well known and sometimes it is not understood how the central intelligence agency operates, has operatives in the Soviet Union in a way that I could never understand. At any rate, after I returned from my first trip to the Soviet Union which I said I didn't ask anybody to authorize, I was called in by the State Department and the chief of the Eastern European Division says to me I see his two folders in front of him. He said well we understand that you visited the Soviet Union and spent a whole month there. You went all over. They took you all over the country. And he says, well, we have information on everything you said there. He said you visited these and these towns. Reporters talked to you. Here are the things that you said. How you were impressed with the great suffering that the Soviet Union had undergone during World War II, that the loss of 20 million men, people and the activity that were going, you expressed your admiration all the way and actually those files had everything that I said whether or not it appeared. They had of course clippings from Russian newspapers but also everything that I said anywhere, they had.

Q Did this surprise you?

A It did surprise me. Because it showed that the United States had a very good network of informants in the Soviet Union because in 1956 I visited Leningrad and Moscow and Harcov and
Keyev and Pillisey and Georgia and Becoumey and the Black Sea and I visited lots of places and I was interviewed a great deal. There were not many Americans going to the Soviet Union at the time. So what was I to say. And I said well, if I have said something wrong does that mean that I don't get my passport renewed. When I get a new passport I won't be able to travel again. And to my pleasant surprise they said no. We wanted you to know that we think that all of the things you said were good despite what other people may think. You express sympathy for what the people in the Soviet Union have suffered and what they were trying to do. And we want you to know that we have absolutely no objection to your continuing the collaborative studies about which we spoke. There then ensued a person-to-person interchange without any official treaties, of an activity between my laboratory and lots of other laboratories in the United States with the laboratories in the Soviet Union and I understand it wasn't only in the field of poliomyelitis although that apparently was the first. That went on without any form of treaty. It was only years later when an official exchange, treaty was, came into being spelling out there shall be so many from the United States and so many from the Soviet Union coming visa versa this that and the other because it wasn't very easy for you remember at that time for Communists to come into the United States, the Soviets because it was one way. In other words, this was part of the person to person thing that President Eisenhower at that time was also speaking about. And it became a very useful mode of operation although I must say again you know subsequently in connection with the
work on polio I worked a good deal with Czechoslovakia because they carried out one of the first really excellent tests on about 140,000 children and young. Well it was really children up to age 14. And I had the feeling to be perfectly frank that while again I was given the red carpet treatment there was no question I had the feeling at one time on the way out from Czechoslovakia I had had coverage in the press and in radio that the Czechoslovak intelligence was trying to trap me. Now maybe I am wrong. I will tell you the incident.

I had a full program. I rushed into my hotel. I had twenty minutes to pack and get to the airport when the concierge, the man at the desk says a young man's been waiting for you all the time. He wants to see you. People are very carefully, especially the Czechs who come into these hotels where foreigners are put up. And so I say I am sorry I am in a hurry. Only twenty minutes. What can I do for you. And so he tells me. He says he comes from a little place outside of Prague he read this about me in the newspaper and he would like to talk to me. I said but what about--. He said I am sorry it is very confidential, could I speak privately in your room. Our room was probably bugged too but anyway. So he comes up to the room and he says that he is a student of political science and he had written a thesis exposing the Communist regime of Czechoslovakia and he wondered whether I could help him get it published in the United States outside of Czechoslovakia. So I said look I am here on a very special mission of collaboration. A mission that is non-political.
A mission that is equally important to the well being of children and others in Czechoslovakia as anywhere else. It was something that we benefit by collaboration. And to take out a manuscript that you have prepared critical of the government with whom I have been working. I said this is contrary to my code of ethics. I hope you understand. And instead of stopping right there. And I continue to pack, he continues to insist or to plead and finally he ended up by saying Please, if you can't take the whole book, could you perhaps just take one chapter with you. And I said I am sorry I won't. I had a vision of going into the airport with my baggage which ordinarily they didn't examine. They never examined my baggage in the Soviet Union and not in Czechoslovakia, but this time a Customs agent, very apologetic said well Professor Sabin we know you of course but as a routine we have to open baggage and they open and they find this chapter. And I could see the big play that they would make that here is an American scientist who is being used as a spy etc., etc., etc. I didn't do it. And when I spoke to knowledgable people later I was told that this is a classical trick of counterintelligence trying to set up somebody.

Q Well there was one thing.

A But it did not interfere. What I am saying is that while it had no impact on other policies, the relationship between the scientific colleagues with whom I worked in Czechoslovakia and Hungary, in the Soviet Union, just couldn't be better. From the point of view of unhappy in relationship event with Smoradinsov that I described, my God that sort of thing can happen within a country. That has nothing to do with
it and certainly shouldn't stigmatize the Soviet Union. Except that subsequent to all of this, the Soviet Union. That was a number of years later was producing mass producing polio, oral polio vaccine and was using it as a political weapon in the sense that it happened in 1961 during a terrific epidemic in Japan and then in many other countries. And then a number of years later. Not a number but maybe eight years later or so. Some American doctors brought me a document in English that was published by the Soviet Ministry of Health and distributed to everybody in which they proudly indicated how not only they wiped out polio-myelitis with a live attenuated vaccine that was developed in the Soviet Union by Professors Chumokov and Smoradinsov from which they got the Stalin and Lenin Prize etc., etc. but also that this vaccine was being used in the world at large by them. Their vaccine to help wipe out polio. Well, should I repeat the incident now because it involves the total Soviet--alright.

There was just no question. I read this and I was astonished because it was certainly contrary to my good relations. Of course Brishdonoff was no longer in the Ministry of Public Health. There was quite a different regime. And I was told by others that in countries in South America and many others, this was used as part of the Soviet propaganda. I made Xerox copies of these papers and I sent them to Chumokov, to Professor Timakov, the man who presided at that meeting in 1957 and was now president of the Soviet Academy of Medical Sciences and I think also to Ishdanoff who is now director of the Scientific Institute and no longer a Deputy
Minister of Health and I said can you give me an explanation for this. It certainly is not the way our relationship has been. So. Quite a lot of time went by and I had not reply. No reply from anybody but I received an official letter, a warm personal letter from the president of the Soviet Academy of Medical Sciences, Professor Timakov, Donna Goya Albert

My Dear Albert, you of course know the great esteem that all of the scientists in the Soviet Union and all of the people of the Soviet Union have for the way you have helped us. And helped to bring about he says the—not saying anything about that article. And of course you understand that this is not the way your colleagues feel about you, etc. It perhaps is some mistake in translation. From the Russian because I sent the thing in English. I think that was in 1968 or so or maybe '67 or '68. Early in 1969 there was a meeting of the World Health Organization Meeting in Geneva in which representatives from the different countries came together to analyze the results of mass production on a world scale of this vaccine in different countries and to see what the experience had been and what one could learn. And the new Soviet Deputy Minister for Health, Kumbossa I think was his name, but never mind. Was there to represent the Soviet Union, and by his side was Dr. Borashilivah, Professor Chumokov's wife. And as Chumokov was already not there because I won't go into the reasons he was kicked out for some things that had happened as director of the Institute by that time, he was deprived of the privilege of traveling abroad. I should state for the
record that Professor Chumokov is not Jewish. He was as ardent a Stalinist, Communist who had all of the honor. There were certain factors. But at any rate when the decision was made because he undoubtedly made statements to irritate a lot of people there, he was fired. I learned later some of the detail I don't want to go into from his wife because we walked in Geneva where nobody else could hear us and with tears in her eyes she told me the story. At any rate, since we were discussing at that WHO meeting only the experience with vaccine produced with my strains I couldn't resist the temptation to address a question to the Deputy Minister of the Soviet Union to say Mr. Minister, and he understood. He didn't understand English. He would get the translation because he spoke only in Russian. I said since this is a meeting that is evaluating the experience with production from these particular strains I would like to know whether these particular strains are still being used in the Soviet Union which was the decision of the Soviet Ministry of Health at the end of 1959, the first one in the world to use these strains or whether other strains are being used according to the statement of the brochure appearing under the name of the Minister of Public Health of the Soviet Union that the vaccine used in the Soviet Union is made from strains developed by Professor Chumokov and Smoradinov for which they won the highest prizes of the country. I must say that when I got this, and here are the pages namely from that report, and I sent it to my friends in the Soviet Union to inquire what is happening, I, the only reply I had several months later was from my good friend the president of the
Dr. Albert Sabin; June 3, 1976; side 2; page 17

Soviet Academy of Medical Sciences, Timakov who assured me of esteem, etc., etc. and said there was possibly a mistake in the Russian translation from the original document and that he was very sorry that I should disregard the whole mechanism. Mr. Minister, since I have not seen the original, the Russian document put out by the Ministry of Public Health, could you tell me which strains are really being used now in the Soviet Union and was there a mistake in the translation from the Russian.

I watched his face as he was getting the translation over the earphone and it was getting redder and redder by the minute. And then to his credit he got up to say in Russian, which was being translated, essentially this. Professor Sabin, first of all, let me assure you that the strains of polio virus that are being used to make oral vaccine in the Soviet Union are the ones that you originally sent us there has been no change at all. Secondly, let me assure you that there is no mistake in translation. That is the way it appeared in the Russian document from the Ministry of Health and I apologize because that is not true. Period. Okay. That was 1969. I had not been back to the Soviet Union since 1968, and in 1975 when the Soviet Ministry of Public Health invited a special WHO committee because by that time I had transferred all responsibility for my strains and international control and who should make and who shouldn't and what-not to the World Health Organization. A special committee of which I was only a member. One member. And
the Soviet Union had asked that a WHO mission come to Moscow. This is July, 1975 well earlier but the mission went in '75 to determine whether the vaccine that is being made in the Soviet Union is in accord now with the standards set by the World Health Organization. And they insisted that I be a member of that because when I indicated that I wasn't sure that I could go. I frankly didn't want to go, they insisted. They said no, we want you to bring Professor Sabin with you. Well, I went. We found a totally new building for production of the vaccine, some of the old staff, some new staff. There were a number of things that were not being done in accord with the regulations of WHO and the important thing for the Soviet Union is that they were selling this vaccine at a much higher price than the general market because there were countries that had either no exchange other than rubels in the Soviet order to buy it or countries like Latin America, Brazil, especially. They had lots of rubels and they didn't know what they could get instead, and the question was, can they buy at least biologicals and oral polio vaccine from the Soviet Union. But when the question was asked is it made in accord with International regulations, there was no evidence. I didn't know. Nobody else. So they wanted to have the stand from WHO. It was in their own self interest.

Well we found probably enough vaccine for the whole world in the cold rooms there. But it was not being made in accord with certain regulations and certain requests were made. To see, we promised that will be changed, but requests for testing because I had signed contracts with everybody in the
world that was making vaccine that I would have the right at any time to ask for samples or come and take samples myself and carry out any tests that I wanted to do. I never had signed such a contract in the Soviet Union because it was a verbal, gentleman's agreement between Chumokov and me. But it became a mission now and all the rights that I had, I transferred to the World Health Organization. The World Health Organization asked, was promised but never got it. But, the same man who was in Geneva in 1969 was still Deputy Minister and a very likeable, you know, almost a typical American politician type handsome and just out going and oh, greeted me. And I didn't ask him but I asked the new director of the Institute who replaced Chumokov, a very fine young man who was trained by Chumokov. I said I would appreciate it very much if you could get me the most recent brochure published since 1969 which is a regular brochure that is put out by the Soviet Ministry of Health, the details for status of activities in everything. I would like to see if the change for which Probasso, the Deputy Minister apologized in Geneva has now been removed.

I will get it for you. I will get it for you. I never got it. And as I kept asking for it, as the time was drawing nearer to my departure, I am sorry I haven't gotten it yet. I haven't gotten it yet. Well, I will mail it to you or the next time I see you in Geneva I will bring it with me, and I never got it. So you see this all has a bearing on your question of political relationships and the relationships among scientists working together on common problems. I would say that the early
stage under certain directorship, the Soviet Ministry of Public Health, acted very well, as in the case of the Smoradinsov affair that I described before. The subsequent exploitation of this by the Soviet Union was along Communist lines of cold war propaganda with distortion of the truth. Not in the colleagues because the candy vaccine that was still put out and sold abroad by the Russians would have on each package in Russian my name. Sabin. Well it couldn't be Russian, you see. So, that part I found distasteful. But it did not interfere with the progress of events.

But I will tell you one other anecdote that has a bearing on the relationships among people with common interests. Belonging or being citizens of countries that are practically at war with each other. This happened in 1957. It was the first international congress on medicine, medical sciences in Rumania, in Bucharest. I was invited as the one official representative of the United States, representing the National Academy of Sciences in the United States. And I went as an official U.S. delegate from the--I couldn't have had more wonderful treatment from the Rumanian ambassador when I asked for a visa, he invited me for lunch. He said oh please have lunch with me while your passport is being processed. And then when I arrived in Bucharest I found to my great astonishment that the two official representatives of Communist China at that meeting. Mind you this is 1957 were the two people whom I met in China in 1946, one from Peking and the other from Shanghai whom I hadn't seen for eleven years incidentally, since 1946. Well we had spent so much time in China together
Dr. Albert Sabin; June 3, 1976; side 2; page 21

we became very warm friends and who should be the official representative from the Soviet Academy of Medical Sciences but a man whom I had come to know during my 1956 visit who wanted to know all about the U.S. National Academy of Sciences of which I was a member, just interested to know. There was differences between different academies, so we were very friendly. And always we were together with arms. We always had things to talk about. We were so friendly that pretty soon there was a whispering campaign because there were 48 different countries represented and I learned during the course of these meetings how does it happen that the official delegates from the United States, the Soviet Union and Communist China. Mind you this is '57 before the Soviets and the Communists broke. Are such buddies. They are such friends. I mean they represent countries--this is the worst period of the cold war. And then came the banquet and during the final banquet, everybody had to make a speech. And of course everybody talked about peace. Representatives from every Communist country, peace. I mean, oh, we want peace and sometimes they would say the imperialist war mongering nations. Then it came my turn to speak. And I said that it has come to my attention that various delegates here from different countries were wondering how it happened that the official delegates from Communist China, from the Soviet Union and myself representing the United States were such friends. Always together with arms around each other, talking and involved and I said I think I owe you an obligation. I have an obligation or I am impelled to tell you why that is and how that is because I think it has a
symbolic meaning to it. There is some symbolism to it. And I told them that in 1946 when I was on a mission to China it just so happened that these two delegates and I became very intimate and we spent a lot of time together. They were under the Chang Kai Chek government that was in existence. And they represented--I don't have the name now from the Soviet Union and I were in Moscow last year together. And the reason we are so friendly while our governments apparently are not is that we have a common bond and common interest. And to me the lesson of this is that the ultimate solution for reconciliation among the nations which is necessary for the self interest of all concerned in this world must be to begin to work together on things that are of importance to all. That does not mean to say that suddenly trust which is completely lacking has to be let's say wishfully developed. You don't develop trust by just saying well we've got to do something else. But let us develop trust by choosing things that are of importance to all just the same as these delegates and I have things that are of common interest to all. And when that is done in other fields and there are many such things, then I think ultimately a way will be found to develop these common bridges that is the hope of the world. Period.

So, this is a little vignette. More than a little. It has taken up a lot of space there. Of some of the associated factors that are involved in international collaboration particularly among citizens of countries who are practically at each other's throat. Now as regards another political vignette to round out this thing, during that period you see
of '59 and '60, Yugoslavia was already outside of the Soviet order and was regarded as a renegade by the Soviet satellites and the Soviet government so in polio as in politics, Yugoslavia had decided to have a, its own polio vaccine production. A small country but its own polio vaccine production. And I was invited to come. I supplied them first of all with enough vaccine, about 60,000 doses. They wanted to carry out their own field trial which was carried out in a town that I shall never remember the name. Prabulots. It was a place, a little Detroit. They were making automobiles there. And also they set up in the Institute of Biologics and the Institute of Virology, Government Institute on there. Why I came to see a capable staff for production of the vaccine. And I gave them the strains and they went ahead and made all their own strains. They made their own vaccine and they checked it by themselves and I would go over and double check neural virulence and other things, and it worked very well. And they carried out studies. Of course subsequently Tito got wind of this, that this was done, and not a penny was charged for licenses or anything. And so I was elected a member of the Academy and he gave me a great decoration. He said never had they heard of something like that being done without even a dollar changing hands. Nevertheless to show how politics play a role because Serbia and Slavinia with Zlagrad the capital of Slavinia are always at each other's throats about everything. But just because they decided to have its institute of production in Belgrade they made a decision in Sagrev to make their own polio vaccine from Koprowski's materials with which Poland was playing around because in 1958 the Polish
government invited me and invited Koprowski and Koprowski's got his degree in Warsaw, spoke excellent Polish, etc. and the Polish government decided to go off and use Koprowski's strains. Not only type 2 but type 1 and 3 which on comparative studies in the United States were found to be not acceptable neural virulence. Well, Poland subsequently came up after some very unfortunate experiences and I don't know what finally happened in Sagrev but you see political considerations played a factor, a considerable factor.

There is one other vignette that shows how political consideration played a role. When in 1960 East Germany with a population of about 17 million did a magnificent job, a good discipline, German fashion carried out an excellent immunization of the whole country and polio disappeared. They did in advance of the season. It was just wiped out in one felled swoop, and then in subsequent years in '61, '62 no polio. They continued the vaccination. But in West Germany epidemics continued. So there was a big argument that the Sabin oral polio vaccine was a communist vaccine. You see mass use in other countries had come along later. There was Belgium that came along. The United States, although it approved these strains, there was no general vaccine available until '63 or so or something like that. So West Germany had a number of epidemics and you plot. I still have the curve to show, East Germany polio under control. West Germany, epidemics. But for a number of years they wouldn't do this because it was called a communist vaccine. But finally West Germany also had seen that they were--I mean after all facts are facts. Here are--one side no polio and here is the other
side with some thousands of cases of paralytic polio. And they went into mass, also production and incidentally it was reintroduced by Derring Verker where my former associate, Dr. Hennison who began work with me in 1953 was in charge. And West Germany also very nicely eliminated polio. Politics again. Another place where politics played a role.

One of the first institutes or pharmaceutical houses that were institutes in Europe to begin making the vaccine, the decision being reached at the end of '59 already while the field trials were going on and were going into production, '60 was in Italy. The Sklavo institute in Sienna. They built a magnificent place for production and testing and excellent person in charge. But the Italian government was having vaccine made by six pharmaceutical companies that were making Salk vaccine and the Italian government would not permit its use. As a matter of fact at one point in '61 or '62 I don't know when. They sent an inspector and padlocked the freezing rooms in which the accumulated vaccine production of this Salavo Institute was being kept that it shouldn't get out. And I remember attending sessions with the institute of superior in scienitalle because I went to Italy every year and at one period. I think it was in '61 when the experience of tests in many different countries was already in and what had been achieved, '61 and '62 with the front row occupied by all the functionaries of the Ministry of Public Health, etc. I described what's happened in Italy despite the use of the Salk vaccine that they had been making they just had one epidemic. There were 8000 paralytic cases. And
polio is continuing to occur. And I was kind of tough. I would say that at this stage and mind you this is the stage when the United States was only getting in itself into mass use because the United States didn't get into mass use until late, at the end of '62, '63. I said I almost feel like repeating Amozola's phrase. Jacher
I accuse all of those who have the responsibility of making public health decisions and in whose countries paralytic poliomyelitis continues to cripple thousands every year. With the evidence that is now available of what the live polio virus vaccine can do, I accuse them of being responsible for all subsequent crippling of thousands that will occur that would have been prevented. It was sensational. A little while after that, I think it was six months, maybe a year. A new Minister of Public Health came in, he was a socialist. He immediately by that time there was already mass vaccination in the United States. He immediately organized for mass vaccination in Italy which I think started in December 1963 the vaccine that was available actually there was another institute also in Milan making it during all this period but they weren't very—they weren't doing a good job. And an excellently organized. A superb mass vaccination program occurred beginning December '63 and early '64. And during the next season when usually you would expect thousands of cases there was the most remarkable manifestation of control. That same year Spain decided to go on. I remember being in Madrid in February 1963.
Q Two things are happening. I am running out of tape.

END OF TAPE