

TAX-EXEMPT FOUNDATIONS

THURSDAY, NOVEMBER 20, 1952

HOUSE OF REPRESENTATIVES,
SELECT COMMITTEE TO INVESTIGATE TAX-EXEMPT
FOUNDATIONS AND COMPARABLE ORGANIZATIONS,
Washington, D. C.

The select committee met, pursuant to recess, at 10:15 a. m., in room 1301, New House Office Building, Hon. Brooks Hays presiding.

Present: Representatives Hays (presiding), O'Toole, Forand, Cox (chairman), and Goodwin.

Also present: Harold M. Keele, general counsel to the committee.

Mr. HAYS. The committee will be in session.

We are happy to have as our first witness this morning Dr. Frederick Middlebush, president of the University of Missouri.

Mr. KEELE. Dr. Middlebush, we have asked you to come here today to discuss with the committee the impact of the foundations on education. We would like for you to go ahead in your own way and discuss that general subject, if you will. I think perhaps if I may interrupt you one moment, it would be of interest to the committee and for the record, if you would tell us something of your experience in the field of education, and something of the training you have had, Dr. Middlebush.

STATEMENT OF DR. FREDERICK MIDDLEBUSH, PRESIDENT OF THE UNIVERSITY OF MISSOURI

Mr. MIDDLEBUSH. I was born and raised in Michigan, graduated from the University of Michigan in 1913, having before that time taught—and I am very proud of this record—1 year in a country school, 1 year in the city school system.

After graduating from the University of Michigan, I taught for 7 years at Knox College at Galesburg, Ill.

Do you want me to go back to the beginning?

Mr. HAYS. Please.

Mr. MIDDLEBUSH. I was born and raised in the State of Michigan, graduated from the University of Michigan in 1913, took my doctor's degree in 1915. Previously I had taught 1 year in a rural public school, 1 year in a city school system.

Then, in 1915, I started my collegiate teaching career at Knox College at Galesburg, Ill., a small privately endowed college, and it was there, by the way, that I had my first contact with the foundations, which I will go back to in just a moment.

In 1922 I went to the University of Missouri as an associate professor of political science. In 1925 I became dean of the school of

business in public administration, and in 1935 president of the University of Missouri. That is my formal educational career.

Mr. KEELE. My notes here show that you have had considerable experience serving on various boards, and I believe you have been on the board of trustees of the Carnegie Foundation.

Mr. MIDDLEBUSH. Since 1937 I have been a member of the board of the Carnegie Foundation for the Advancement of Teaching. That is one of the divisions of the Carnegie organizations, as you well know.

Mr. KEELE. You have acted as vice chairman of that board, have you not, since 1951?

Mr. MIDDLEBUSH. That is right.

Mr. KEELE. And I notice also that you have been on the Commission for the Financing of Higher Education.

Mr. MIDDLEBUSH. That is right.

Mr. KEELE. And you are, or were, on the executive committee of the Association of Land Grant Colleges and Universities; is that right?

Mr. MIDDLEBUSH. I was on that. I have completed my term of service.

Mr. KEELE. And various other boards connected with education of one form or another.

Mr. MIDDLEBUSH. I have served as president of the Association of State Universities and the president of the Association of American Universities. I have just concluded that period of service.

Mr. KEELE. All right. With that you can go ahead, if you will.

Mr. MIDDLEBUSH. If I may, members of the committee and Mr. Keele, I would like to go back to my teaching experience at **Knox** College.

As I say, that was my first contact with this very interesting organization that we have in America of educational foundations. **Knox** College was an affiliate, in a way, as many institutions became during the twentieth century, of the Carnegie Foundation for the Advancement of Teaching in that members of the faculty of that institution were eligible under the insurance or annuity plan that Mr. Carnegie set up as the principal function of the Carnegie Foundation for the Advancement of Teaching.

And it just so happens that I think I am one of the youngest men in the country eligible under the old Carnegie retirement plan. I started teaching in September 1915 when the plan was closed to new members in November of 1915.

Since that time my contact with the foundations has been pretty largely on the receiving end, being a member of an institutional staff that was on the receiving end of certain types of grants, research grants and grants for the advancement of the specialized educational programs of the institutions with which I have been connected.

Well, in fact, that is entirely related to the program of my own university, the University of Missouri.

I want to say at the outset that I would not set myself up for one moment as an expert on foundations, and after reading in some of the press accounts the statistics that have been submitted to this committee, I am certain that you appreciate the fact that it would only be a superman who could be an expert on the number of organizations that have been set forth here as organized foundations.

I want to make very clear that any direct contact I have is with the Carnegie Foundation for the Advancement of Teaching, to some extent with the Carnegie Corp., which, by the way, is a partner rather than a dominating directing force of the other divisions of the foundation set-up that Mr. Carnegie provided for, and I have had some small contact with the Rockefeller Foundation, and in a purely consultative capacity with the Commonwealth Fund.

I would like to touch on that for just a moment a little later, because it, in a way, bears testimony to one of the services that the foundations render higher education.

As I look back over some 20 years of experience with these organizations—and I want to remind you again I am speaking only specifically of those I have mentioned—I am impressed with the fact that these foundations have rendered a variety of services to education and not just at the ivory-tower level, if I may use that expression, of research and collegiate and university level of operations.

These foundations have been very much interested in the public-school level of education, and I want to cite one or two examples in these cases to give positive proof of that interest.

I want to take up various examples of services that these foundations have rendered. I don't want to go further into the annuities, unless you desire, because as I understand it, President Wriston of Brown University, who I believe is on the schedule of witnesses for tomorrow, will go into that in greater detail, and it would be more or less duplication if I took that up, if that meets with your approval.

Mr. KEELE. That is quite acceptable.

Mr. MIDDLEBUSH. I want to emphasize at the very outset—and I am giving wholly my own opinion—that I think one of the outstanding services that these foundations to which I have referred—and this may also be true of many of the others, but one of the outstanding services they render to higher education—is to take a certain element of risk out of educational experimentation.

I don't know how much of this point has been made before the committee previously, but certainly in the whole field of public education and higher education, it is recognized that if you stand still you lose ground. You must constantly be exploring in your fields of development in order to maintain an active going organization which is of maximum service to society, of course, which is its mission.

Now, as I look back over the work on my own campus, I am very much impressed that when a problem of future educational development comes before the administrative staff in the faculty groups concerned with that specific problem, you immediately run into the question, at least in my type of institution, which is a land-grant institution, State-supported also, with very little endowment, you run into the question of budget.

Can we afford to take out of our regular operating budget, say, \$50,000 to commit ourselves over a 5-year program for a special limited type of exploration, of experimentation, if you will, not being certain when you start out whether the end result is going to be so satisfactory that it can be incorporated legitimately into a regular part of your university's program of teaching of research and service to the people of the State and the people of the Nation?

Now, it is right at that point in my opinion where these foundations have come in as partners with us to undertake what I call the financial

element of risk from the educator, and they do that in this form. I want to give you a concrete case in point.

They say, "We will set up, as the Carnegie Foundation did for the University of Missouri 3 years ago, the sum of \$50,000 for a 5-year period for your staff to make a careful study of what can be done to improve the quality of college teaching in the college of arts and sciences."

Now, there is nothing very dramatic about that. That may not seem too important, but for those of us on the firing line, that is of tremendous importance, and especially for this reason.

In this postwar period, as you all know immediately following the close of World War II, all of our colleges and especially our large universities, were deluged with the returning GI's. The enrollments in my own institution doubled over the high point that it had reached immediately before the war.

In our law school, for example, which got down to a low enrollment of 17 students during the war, and we still kept the law school open, we went up to 175 students within one semester.

Now, obviously the impact of that on the educational program of the university was terrific. We literally had to go into the highways and byways to recruit staff members to take on this extra load. We have over 40 teachers giving full time to the simple job of teaching freshmen English, and the saying around the campus was this: Are you certain that all the instructors know how to speak good English, to begin with.

Now, as the enrollment declined following the termination of the GI program, inevitably many of those staff members remained on the faculty. As younger men, they had possibly not too good background preparation for top-flight positions on the staff, but they show a great promise. Some of our administrative officers were strongly of the opinion that the university could render a great service to this whole group of young teachers on our own faculty, in the privately endowed colleges of the State—this was not just a University of Missouri program—the State colleges, teacher colleges; we have three other universities in the State.

If we could set up in the State an experimental program in developing an on-the-job, so to speak, training program in good methods of teaching, just as simple as that, that could be of tremendous service to the students in our own campus and in these other institutions.

The Carnegie Corp., through the Carnegie Foundation, made a grant to us of \$50,000 over a 5-year period to finance that program. We, I think, would not have considered for one moment setting up for one part of the university that much of an extension in our budget which was not covered—the activity itself was not covered in the regular budget that we presented to the legislature, and so on.

It was a new field. We are now in our third year in that experimental program, and we now know that our own staff would not permit us to drop it, and I am sure that the associated colleges and universities in the State of Missouri would look with great disfavor upon the termination of this program at the end of the grant.

In other words, it has already proved to be so successful that in some form or other we will find the funds, now that we have two more years to do our planning, to carry this program forward. And that.

by the way, you can easily see there the constructive service that the foundation rendered in this respect.

There is another byproduct of that that I want to mention, because I think that this is extremely important. I am speaking here personally, but it so happens that most of my life has been devoted to public education, State university, but I have a very strong conviction that in every State of the Union higher education, all of the different parts of it, are part of one united whole.

I am very much bothered when I hear people emphasize public education and private education on the other hand. I think that is a misuse of terms. It would be more correct to say publicly supported education and privately supported education. But in my book all education is public in that it is there for the service of the people of the respective States and the Nation.

And we must never forget that public service—and I am sure the privately endowed institutions appreciate their obligation there as much as those of us who are connected with publicly supported institutions. This experience that I have outlined here at some length has given my university, as a State university, the opportunity for some leadership in working cooperatively at an effective operating level with the other institutions of the State, irrespective of their form of organization or support. That in my book is a very important additional byproduct.

There is another example that I want to give of these grants of a risk nature. A few years ago some of my colleagues became very much interested in the possibility of salvaging for future generations historical records of persons in public life, of business organizations, railroad companies, of salvaging those records and maintaining them in a manuscript collection as source material for future research in the economic, political, social life of that area.

As you know, that material, it is very, very easy for it to disappear, and once it is gone, it is gone and society is the loser.

We took up with the Rockefeller Foundation the idea of establishing at the university a center, not only for the State of Missouri, but for the Southwest area to some extent, a center for the collection of important manuscript collections that could be housed in fireproof quarters in the university library, and that would become the center of study, research work in those fields.

The Rockefeller Foundation gave us a modest grant. When you stop to think of the magnitude of the project, it is a very, very small grant. The initial grant was \$15,000.

We employed a person to go into the field to gather these records in the attics, basements, and so on, and now for the last 5 or 6 years the university itself has been carrying that.

We have it incorporated in our budget. We had time to do it. We see the importance of it. We have now, for example, the papers of the Governors of Missouri, the last half-dozen of them which we have succeeded in getting. As a matter of fact, Mr. Truman's papers as chairman of the Senate Investigating Committee while he was in the Senate, have been deposited with the University of Missouri as a part of this collection.

We have a number of files of papers of various industries, important source material, for example, in the history of the fur trade in the St.

Louis area, that type of thing, of river traffic, steamboat captains' log books, and so forth.

Here again nothing very exciting about that, but unless progress is made in salvaging and protecting that type of material at the time, then it is gone. Just yesterday there was a third program presented. I attended yesterday the annual meeting of the Carnegie Foundation for the Advancement of Teaching, which is made up pretty largely of the members of the boards of the universities and college presidents, and we had a report before the board meeting of the work of a special division of educational inquiry in the South, a project that had been set up in connection with the Carnegie Corp.

I believe \$750,000 was set up 5 years ago to help finance this project. It is a program of grants-in-aid to college professors, especially in certain southern institutions.

A substantial number, staff members, in something over 40 colleges have participated in these grants. Now what were those grants for and why were they given?

The grants specifically were for the purpose of encouraging faculty members, an outstanding faculty member in a small college, where he was somewhat isolated from the companionship of men in other institutions in his field, to stimulate him to carry on an active program of research in his own field.

And why should the foundation be interested in stimulating a faculty man in a small college and make it possible for him to get material together for the writing of articles, keep his research interests alive? For one very, very good reason, and it is a very simple one.

In the judgment of all of us—and I am sure this would be true of university and college faculties generally, they would be in accord with this—the job of teaching students in the end flows from the type of individual whose mind is active in the field of research work in his own field.

Now that does not mean that it is the great scholar who is devoting all of his time entirely to research that is the great teacher. The great teacher must have some time to keep alive in his own field. Otherwise you are going to dry up to some extent, in our opinion, his effectiveness as a teacher.

This program has been in effect—I think it has been going on now for 4 years.

We had a report to the Board yesterday by President Lowry, of Wooster, Ohio. I can't give you that report because it was given verbatim. There will be a published statement on it.

But I want to emphasize, gentlemen, as much as I can the impression that that report left with me: that apparently it is one of the most stimulating things that has happened to the staff of some 40 colleges and universities in this area, and given many of them, in their own words, a new lease on life as academic people.

I could go further into the plan of organization of it. It is a great cooperative project. There is not very much money that is assigned to each individual. There may be enough to permit him to take the summer off from summer-school teaching so that he has some free time, to give him possibly an extra hundred dollars to come to Washington to do some extra work in the Library of Congress, that type of thing, but the very fact that those men realize that other people are

interested in them and interested in their problems has made this, I think, a very, very significant experiment.

Now before I leave this phase of my presentation, I want to say that there are some disadvantages to these risk grants that I think we must all recognize, and I am sure the foundations themselves, especially these to which I have referred, would recognize those.

I want to emphasize just one, and to me it is one of the outstanding handicaps. You may find that an institution that is receiving one of these risk grants, especially if it is a sizable sum, that the foundation has provided funds that have permitted the institution to get so far into a program that it finds it is not desirable to drop it, it would like to continue it, and yet the funds involved are so great that it can't get the supplementary funds from other sources at the end of the grant made by the foundation to carry it on.

These are inciting grants; they are accelerating grants. You might in some instances—I think this has actually happened, though I can't document this, but I am certain in many cases the institution has developed a program up to a certain point, the foundation steps out at the end of its 5-year period and then the institution has quite a struggle finding enough funds to carry the program forward.

Personally, I think the answer to that, gentlemen, is that the grant to begin with was initiated by the institution, and I think there is a heavy responsibility on the administrators of these institutions and upon members of the faculty to make certain that that point has been covered insofar as possible in advance of the request of the grant.

If the foundation were imposing the grant on the institution and stimulating the institution to overextend itself, then that would be another matter. That, to me, is the other side, the one element of risk in this.

Now as I look back over the work of these foundations, and again in the field of my own experience in my own institution, there is a great service that has been rendered through the years in the conduct of special studies in the field of education by the foundations themselves.

Ordinarily these agencies are not, at least the ones I have some connection with, operating agencies. They turn the funds over and somebody else does the operation, usually the receiving institution and its staff members.

But some years ago the Carnegie Foundation became impressed with the rather tragic straits that we had fallen into in the whole field of medical education, and the Foundation set up within its own organization a plan for an investigation, a very thorough investigation, of the whole problem of medical education in the United States.

That in the field of higher education, in the professional schools, among the professional schools, I think, is one of the most famous documents in our educational history, and here it is. This is known probably to your research staff and some of you as the Flexner report, Dr. A. Flexner, who spark-plugged this study. It is entitled, "Medical Education in the United States and Canada."

The survey was made in 1910. I am not an expert in the field of medical education, but I think I know enough about what has been going on in past years in the field of education to recognize that this document right here constitutes one of the greatest factors in re-

forming and modernizing our whole system of medical education as one of our bodies, one of the greatest in my book, of professional education.

Mr. KEELE. That constituted a landmark, did it not, Mr. Middlebush?

Mr. MIDDLEBUSH. This is a landmark, I think, beyond any question. It marked a complete transformation, for one thing, in the procedure of educating medical students.

It spotlighted what is known—this is a short-cut to the answer to it—as the clinical method of teaching as a part of the training of the doctor.

In other words, the total training of a doctor could not be carried forward by a lecture-textbook type of approach with some work in the laboratory in the basic sciences, and then turning loose on society the individual as a trained doctor.

They put on top of that, as the result of the work of Mr. Flexner, a top 2 years, his third and fourth years, where they took the student, the prospective doctor, the future doctor, actually took him to the bedside of the sick person, and they taught him medicine and medical practice in a very, very practical way. That is the clinical part and that is accepted now as just a must in the field of medical education.

Mr. KEELE. Well, isn't the enviable position of medical education in this country attributable in large part to the effect of that report, the practice that has followed?

Mr. MIDDLEBUSH. Correct, I think beyond any question.

Mr. KEELE. And it reversed the pivotal points in medical education from Europe to this country, as I understand it.

Mr. MIDDLEBUSH. That is right. Mr. Flexner, by the way, is still living, still active, eighty-some years old.

I may say that there are some of us connected with the foundations that wish that he were a bit younger so we could have him go back and have him after 42 years take another look at medical education. Possibly in that 42-year period there have been some developments that it might be well to have a person with his background and competence scrutinize.

Personally, I would be especially appreciative if anybody could go into the whole physical field of medical education and make a Flexner report on that and tell us how we are actually going to carry the terrific costs of operating first-rate medical schools in order to maintain them at the level that Dr. Flexner helped place them in this country.

Here you have a program of higher education that by all means must not stand still, and it costs a terrific amount of money. This is aside, but in my book that is the most crucial problem in the whole field of financing higher education today, financing our medical schools.

Another special study—you may want to rule this out as coming within the field of education, but I would argue that—in 1923 there was another special study made of another very important problem, and it is an important problem in higher medicine today, in my judgment. That is the whole system of American intercollegiate athletics.

Here is the famous 1929 report of the Carnegie Foundation, the survey on the status of intercollegiate athletics in the colleges and universities of the country, and in this document you have pointed up the problems that we are confronted with in 1952 in the field of inter-

collegiate athletics. It almost seems as though the persons on this problem twenty-some years ago could see a vision of where we are today.

This is the famous report of the Carnegie Foundation on American collegiate athletics. It is a pretty good source book, and possibly here again it might be well to have, with some of the things going on in the field of intercollegiate athletics, another look at exactly the right place they occupy or should occupy in our system of collegiate and university education.

Mr. KEELE. I was just going to say, Dr. Middlebush, going back to the Flexner report, from what I have read I would gather that that report became a very controversial matter at the time it was made.

Mr. MIDDLEBUSH. I believe so.

Mr. KEELE. And it did result, as I understand it, in the closing of a number of medical schools which did not meet the requirements that were then established; isn't that correct?

Mr. MIDDLEBUSH. I could speak with real feeling on that, if I may, for just a moment. It closed the 4-year school in my own university.

The University of Missouri had a 4-year medical school up until the time this report came out. After this report, the last 2 years' work was given up, and since that time until this year we have conducted the basic science part of the program, the first 2 years, and I would like to put in the record here, because it does tie in directly with this report, Mr. Keele, that just within the last 6 months the General Assembly of the State of Missouri has appropriated, started the appropriation of substantial sums of money for the construction of a teaching hospital and a new medical school center which will enable us to conduct the full 4-year program. So we are right in the period of completing that cycle.

Mr. KEELE. Well, you could speak, then, with first-hand knowledge and very feelingly, I should think, about the effect of the closing of those schools, of certain schools.

I take it that in the end it did not prove a net loss to the medical profession or to medicine generally, but proved a benefit, is that not right?

Mr. MIDDLEBUSH. I think there is no question of that.

Mr. KEELE. In other words, some of the schools which perhaps were turning out candidates whose patients were candidates for the cemetery, shall we say, were eliminated, and the instruction passed into those schools which were able to afford the high efficiency in the instruction that was required.

Mr. MIDDLEBUSH. I do want to say, though, again for the record that not all of the graduates of these schools that were reduced as a result of this program—I go back to my own institution—not all of those graduates turned out to be poor doctors.

Now that is the other side. That is something interesting. In other words, there is a certain type of individual that apparently can surmount the handicaps of a bad education and he still becomes an outstanding lawyer or a doctor. But, certainly, we wouldn't want to build our educational program around that idea, I should hope.

There is one other service that I want to just mention in passing, the aid that some of the foundations—the Carnegie and the Rockefeller Foundations, I believe, are joined in this—give in the development of a regional educational project in the South.

I will not go into the details of that, but that is just in process of development, a very interesting project, attempting to determine how successfully a number of States in a given area can cooperate in development of certain types of professional schools.

Let's take a school of medicine, as a joint project across State lines. Now, as I say, that is in a developing stage and it is being watched with a great deal of interest by boards of trustees of colleges and universities, and especially many of the governing boards of our State universities.

I have spoken so far of matters of interest primarily to those of us in the field of higher education. I would like to just list—and there could be many other examples listed—a service that is rendered at the public-school level.

Right after the war, I believe in 1949 or 1950, there was a very substantial grant, some \$750,000, made by the foundations of which I am speaking, for the creation and the conduct of the work of a national citizens commission for the public schools. It was headed by a very famous journalist, Mr. Roy Larson. That commission is still in existence.

Now I am not too familiar with the detailed work of that commission. I have met with Mr. Larson in various meetings. They had a large meeting of this group, sponsored by this group, in the city of St. Louis some months ago, but the purpose of this commission was to call to the attention of the American people in a very, very pointed way the critical situation in this postwar period that we were developing in the support or lack of support of the public schools of our Nation, especially in view of the tremendous increased load they were going to have to carry soon. As a matter of fact, we are already in it as a result of the increased birth rate.

Now I think that this is a very constructive program in a way of public education in how much we have at stake in a well-maintained, well-housed adequate public-school program.

One could go on without end, of course, in citing examples of the work of the foundations. I cite the number that I have given here because they happen to rank high in my book of values, and I think they also are quite typical—and I am using them here as typical examples—of the constructive work of these specific foundations.

Mr. KEELE. Dr. Middlebush, hasn't it been said, correctly or incorrectly, I leave that to you, that the establishment, for instance, of Stanford University on the Pacific coast in and of itself did much to raise the level of the college education in that area, and that the same was true, perhaps, of the University of Chicago in the Middle West, and today with Emory University and in the past with Vanderbilt University, all of which were the recipients of very large sums of foundation aid? Would you say that generally was a correct statement?

Mr. MIDDLEBUSH. I would. There might be some difference of opinion with our friends over at Berkeley on the question of Stanford, but I think we would have to discount that.

I think that the advantage that flows from that is this: It gets back to the point that I made earlier in my statement of the value of the privately supported institution over here working hand-in-hand with the publicly supported institution. It enriches our whole system of education.

And, obviously, institutions of that type simply cannot thrive without strong support by those who are in the position to give. As a matter of fact, those institutions are in an extremely crucial position today financially.

Mr. KEELE. I take it from what you have said that there is some question as to the advisability of an institution supported from public funds taking the risk of initiating these private or pilot experiments, whereas the foundations are able to do that.

Mr. MIDDLEBUSH. Right.

Mr. KEELE. I assume from what you have said that the greatest value the foundations have given or afforded education was the ability to lead these experiments, finance these experiments, pilot projects, or pathfinding projects.

Mr. MIDDLEBUSH. Right.

Mr. KEELE. And without that, I assume, we would be far behind the mark we have presently attained.

Mr. MIDDLEBUSH. Many of these programs would not have been undertaken, couldn't possibly have been undertaken.

Mr. KEELE. Wouldn't you say, on the whole, that the contribution which the foundations have made to education in this country was massive rather than slight in its effect?

Mr. MIDDLEBUSH. I think before answering that question I would like to put a limitation on the term itself. I go back again here to these numbers.

Obviously not all of those foundations, I assume—I am not familiar with it—not all of those have participated in the thing that we are talking about here today, but these outstanding foundations have been devoting their funds to the development of education.

The word "massive" might be a little bit too strong a word. I would say that it was highly important in a supplementary form.

In the case of Stanford, of course, the initiation of Stanford University came through the direct grant of a very wealthy man, Mr. Leland Stanford; incidentally setting up an endowment at that time that was larger than the endowment of Harvard University. Stanford in those early years had a larger endowment than Harvard University itself. And that came through the action of a single individual.

Mr. KEELE. What, so far as you know, have the smaller and newer foundations done in the field of education, Dr. Middlebush? And I am talking now about those foundations which would not fall within a classification we arbitrarily make there as to size, such as the Carnegie and Rockefeller Foundations, but the smaller foundations. Are they making any contributions, foundations with less, let's say, than \$10,000,000 in assets?

Mr. MIDDLEBUSH. I am not competent to speak on that because I have no contact; I don't recall that I have ever come in contact directly with the work of any foundation of that type—I was thinking as you were asking the question of possibly the Commonwealth Fund, but, of course, that is still not small—much smaller than these other organizations.

There is an organization that is, I think, making a tremendous contribution because it is limiting very directly its field. It has a special interest in the field of medical education and hospital development, which is one of the spotlighted problems.

I think where the smaller foundation has very rigidly limited the type of thing that it is going to support, then it could register it at a pretty high point, even though the fund within the foundation is not as large as these goliaths that we are talking about.

Mr. KEELE. Hasn't there been a shift in the method of making grants by the larger foundations—from simply giving universities large sums of money to be used as that university may choose—to making grants for specific purposes or projects?

Mr. MIDDLEBUSH. Correct.

Mr. KEELE. Would you just tell us a little of that.

Mr. MIDDLEBUSH. Well, I go back again to my days at Old Siwash at Knox College. That time it was traditional among the foundations, the first place you went when you started an endowment campaign was to one of the larger foundations, like the Rockefeller General Education Board. You would get a commitment from them that they would give you \$1 million, provided the board of trustees of the college would raise another \$1 million. That was for the general endowment of the institution.

Now I think it is true that that type of foundation support across the board is a much smaller item in our picture today as compared with these special grants that you have referred to.

I should say that in the main, at least in my own contact, in the contact of my own institution with the work of the foundation, with the foundation as a financing body, all of it has been at the point of special grants for a very specific purpose, for a project that is very carefully outlined. And, by the way, once that grant is made, the responsibility for carrying on the project at least in all of our experience, has been wholly within the institution itself.

Mr. KEELE. That was going to be my next question.

One of the questions that has arisen in the minds of the staff and the committee is to what extent the foundations attempted to control the work done once the grant was made.

Mr. MIDDLEBUSH. I am again speaking within my own experience with these groups. I should say no control in the sense of arbitrary administrative control. They have been available, members of the staff have been available, for advice and consultation.

Take in this project that I referred to, the grants-in-aid program to these southern institutions, these members of the faculty in their research programs. The foundation staff I am certain has been of considerable help in a consultative capacity to those institutions and individuals.

But I think you would find when you have the responsible heads of these foundations before you that there has been a change in the overall policy, the basic policy of the operation of the foundation.

There was a time in the early days when I started out in my educational career—going back that far is longer than I like to remember—when there was something of a control going on. I was told by the president of one of our Midwestern institutions, just within a week or 10 days of a grant that was offered his university, but also that was accompanied with a very strong recommendation that Mr. So-and-so be appointed dean to operate that program; and the institution refused the grant.

I don't think one of those foundations would dream of doing that sort of thing today. Certainly every educational institution ought to resist it if they did.

Mr. KEELE. In other words, the foundations are more interested in what you set out to accomplish rather than how you do it. Once the grant is made, automatically that is left to the institution?

Mr. MIDDLEBUSH. That is correct.

Mr. KEELE. If that were not the case, the center of gravity would be passing beyond the confines of the institution itself and its work; wouldn't it?

Mr. MIDDLEBUSH. Correct, and I think that that could not be tolerated in a private-supported institution any more than it could in a publicly supported institution. Obviously it couldn't be tolerated for a moment in a publicly supported institution.

Mr. KEELE. Dr. Middlebush, to what extent is the Government subsidy being made to college and universities taking the place of the foundation assistance which has been given in the past?

It seems to me I have heard Dr. Wriston talk rather fluently on the subject of Government subsidies for various projects that the Government is interested in.

Mr. MIDDLEBUSH. It would be very difficult to make a definitive answer to that. It is having a sizable impact, I think especially in the field of research under research contracts.

And now with the establishment of a new organization, a new foundation under the direction of the Government itself, the National Science Foundation, and I happen to be a member of the board of directors of that newly organized body, and I can see in the development of that organization a fund-allocating organization that is certainly going to, I won't say run counter and eliminate the desirability of having funds from the foundation, but it is going to operate in precisely the same fields.

The National Science Foundation is making two types of grants; grants for research, specialized research, which is what our foundations have done, and fellowship grants.

Mr. KEELE. Then are the grants given the colleges and universities for special projects by the Government all funneled through the National Foundation?

Mr. MIDDLEBUSH. No.

Mr. KEELE. Or do not the various departments of Government, perhaps the Air Force or the Office of Defense, give certain grants for specific projects?

Mr. MIDDLEBUSH. Correct. There is the proviso though that the National Science Foundation is supposed to become ultimately I presume the catalytic agent in Government-sponsored, Government-financed research. It is supposed to be a clearinghouse.

Mr. KEELE. And a coordinating agency?

Mr. MIDDLEBUSH. And a coordinating agency. In fact it is also supposed to be in the position to take over the responsibility for administering some of the funds that have hitherto been administered by some of the armed-service programs.

Mr. KEELE. In your opinion is there as great need for the support of the foundations at the present time and in the foreseeable future as there was in the past?

Mr. MIDDLEBUSH. Yes, I think in some respects there is even a greater need because higher education—and I am looking at it purely from the view of the institutions of higher learning—in my judgment, public or private, is confronted with a crisis situation in the field of finance, of its total program being financed at an adequate level where it can return to society the type of service that is being expected of it.

As a matter of fact, just yesterday the Commission on Financing Higher Education, a group of 12 men, made a 3-year study which was released to the press today, published a report on the future financing of higher education. It is a study of exactly the point you raised: How crucial is our present situation in financing higher education and how can we find additional sources of income for these various types of institutions.

From the standpoint of a president of a State university, I want to make crystal-clear that the problem isn't solely a problem for the private-endowed institutions. I think it is also a problem for our State-supported institutions.

Mr. FORAND. Would you say then, Doctor, that that is the reason why all of the schools and colleges seem to be so eager to get contracts from this national research institution or foundation?

Mr. MIDDLEBUSH. No. The total amount of money available from the foundation of course is not large enough. It is really a drop in the bucket of the programs of these educational institutions.

I think what you say might be true of a lot of the other types of Government contracts, that they are far more ambitious dollar-wise than the National Science Foundation.

Mr. FORAND. I understand that there are quite a large number of requests being made by schools and colleges for these types of funds.

Mr. MIDDLEBUSH. That's right. The ceiling, of course, placed on the appropriations in the act, as you know, for the National Science Foundation is \$15 million, and our appropriation I believe is a little less than three and three-quarter million for the past year, and the applications for fellowships on the one hand and grants-in-aid of special-research projects on the other, well, I don't know, but the National Science Foundation people can quickly answer that question, but the number of applications is many times more than the number actually awarded, which bears out the point you have made.

Mr. FORAND. I have a couple of other questions on another subject. Would you, Doctor, for the benefit of the committee explain to us step by step how your institution for instance makes its application for a grant from one of the foundations and how that grant comes to you, whether it is direct or whether it is through channels or something like that. I think that would be very interesting.

Mr. MIDDLEBUSH. I will be glad to. Starting within the institution, let's begin with the interested professor down in the department. That is getting down to the grass roots.

He would talk over in my institution—and institutions would vary in this, but we believe in allotting organization of administrative responsibility, which is not always easy to maintain, as you well understand, but he would take this up with his dean, the dean of his college within the university, and possibly with the graduate school, research council, and we would get an agreement within the institution itself on the desirability of a request being made for X number of dollars for this type of project.

In my institution we have definite board regulations governing that procedure, and they are initialed along the way, so it is not just some one individual getting an idea on his own and being able to go to Washington or Chicago or wherever it might be to get some funds for that. It is cleared through channels within the institution itself.

Not infrequently the application then which is worked out in detail is taken to the foundation offices by one of the interested parties—it might be the dean—and submitted in a personal conference. As a matter of fact he may have talked it over with a representative of the foundation before the application is actually formulated in order to determine whether that would fall within the scope of the grants being made by that particular foundation during that year.

Now within the foundation itself the only organization I can speak of is the one with which I am directly familiar, and that is the Carnegie Foundation. That would be cleared then through the officers of the foundation.

A substantial grant, this one that I spoke of, of \$750,000 for some 40 colleges and universities in the South was discussed very fully in a meeting of the board of trustees of the foundation.

I think every member of the board who was in attendance became thoroughly familiar before a grant was seriously considered, with the nature of the problem that these people were attempting to get solved, and how they planned to solve it. They got the funds.

I would not want to commit myself on the exact time, but as I recall, that went over for possibly three or four meetings, better than a year that that was under study within the foundation itself. Then the grant was actually made by the officers of the foundation, with the approval of the governing board of the foundation itself.

Now you understand you may well have other types of foundations with which I am not familiar that have quite a different procedure, but that is the procedure here, and I assume that that is rather typical procedure. At least I should think it would be.

Mr. FORAND. In other words, the funds go directly from the foundation to the school or college.

Mr. MIDDLEBUSH. Right. Now when the governing board of the foundation has approved the grant, it has been cleared, then the money goes directly—in my own case it comes directly to the treasurer of the university. We set up an agency account on our books for it, and it is operated exactly as any other budgetary item in the total university structure with the funds to that account.

Now it may not all be sent at once, you understand. There may be successive checks sent if it is over a period of time.

Mr. FORAND. But even if it does come in small parts, it still comes direct?

Mr. MIDDLEBUSH. That's right, and it comes directly under all of the governing machinery of my own institution, including our own board regulations on how any dollars can be spent.

Mr. FORAND. Thank you very much, Doctor.

Mr. O'TOOLE. Does the school after it has received the grant have to send back to the foundation an itemized statement as to how the money was expended?

Mr. MIDDLEBUSH. I can't answer that. That is an item of business office procedure. I presume I should be able to answer that.

We do make reports to them, but now whether it is an itemized account, that I can't answer. I don't believe it is.

We would have our own records because you see we are confronted with a responsibility when the money gets into our treasury, and we would have the itemized account. I don't believe that we file those itemized accounts with the foundation. Now it may be that we do.

Mr. O'TOOLE. That is all.

Mr. HAYS. Mr. Goodwin.

Mr. GOODWIN. Mr. Middlebush, I was interested in what you said about there being no control after the grant is made, no control by the foundation.

Is it not a fact that if that be true, as I have no doubt it is, it would have a pretty heavy responsibility upon the foundations to make certain before the grants are made about what is likely to take place thereafter? In other words, the responsibility to make sure that the funds are going to be used for purposes which are in the interest of all our people. That I take it would be a fair assumption.

Mr. MIDDLEBUSH. Well, certainly I take it that you mean by that that it must have complete confidence in the integrity in the institution to which it is making the grant, and that the funds are going to be handled in such a way that the purposes for which they were granted are in this plan that was submitted and will be held to and that the funds will be administered efficiently.

Mr. GOODWIN. Yes. In other words, from the very fact that foundations operate as they do in providing the distribution of private funds for purposes which possibly otherwise might be used through public funds where there is a definite method of fixing responsibility for improper use, foundations not being responsible to the public as public officials would be if the funds were public funds, have an even greater responsibility; have they not?

Mr. MIDDLEBUSH. Indeed.

Mr. GOODWIN. To make certain that these moneys are put where they are going to be spent for the benefit of the people of America.

Mr. MIDDLEBUSH. In other words, if my institution accepts \$50,000 from a foundation for a specific piece of work everybody is agreed on, we are responsible to the public as well as to the foundation to see that that purpose is held to.

Mr. GOODWIN. That is true, but you never can get back at the foundation which granted the funds. Suppose you had a very broad policy of Federal aid. We are talking about education, so let's say a very broad policy of Federal aid to education, and tremendous sums of money, public funds, to be sure, are used for the purpose of expanding education, with the idea of proper inculcation of information to be used for the next generations coming on.

If it should happen that that policy is not carried out wisely, if it strays off into fields which are doubtful, having in mind the future of our people, the Government is responsible to the people and the people may at the next election recall that Government.

If a foundation probably in an equally powerful position places these large sums of money for use for educational purposes and something goes wrong, somewhere somebody who is responsible for proper administration acts in a way which irresponsible Government would not act, you have got no way to get back at the foundation.

Therefore, it comes to this question: If that premise is correct, then is there not a tremendous responsibility upon these foundations to make sure by every step they take in selection of personnel, in machinery set up for determining whether or not the grant shall be given, a very heavy duty and responsibility which they have to assume?

Mr. MIDDLEBUSH. I should say, Mr. Goodwin, that there is a very heavy responsibility in both cases there, the granting institution as well as the receiving institution. I am thinking of it in terms of my own organization. We can't be relieved of responsibility.

Mr. GOODWIN. I merely did not want to emphasize one over the other excepting that this committee is here studying, not the University of Missouri or other educational institutions; we are here to study foundations.

Mr. MIDDLEBUSH. That is right.

Mr. HAYS. Dr. Middlebush, I assume your reference to Mr. Larson's organization means you think that you regard it as a helpful and significant movement.

Mr. MIDDLEBUSH. I certainly do. I think that could easily become one of the great saving forces to our public schools, and they, after all, are the bottom on which all of our work in education rests.

Mr. HAYS. And that is receiving substantial help from the Carnegie Foundation.

Mr. MIDDLEBUSH. Yes. I checked on that. I was told yesterday afternoon that the original grant was \$750,000.

Mr. HAYS. Do you run into any problem of tax-exemption, since there is an element of legislation, perhaps, or at least propaganda—I don't use that word prejudicially.

Mr. MIDDLEBUSH. Well, I don't see how—I am afraid I can't answer your question; I don't quite see how that could come in. I am not familiar with the internal administration of that project.

Now who is actually administering it below Mr. Larson's organization, I am not familiar with that machinery. I believe they have it divided up among the States, State commissions under the national commission. Now whether they grant them funds or not, I am not familiar with that part of the machinery.

Mr. HAYS. Its purpose is to inform the American people about the condition of their public schools.

Mr. MIDDLEBUSH. That is right.

Mr. HAYS. Trends, good and bad.

Mr. MIDDLEBUSH. That is right, and encourage self-study within the community.

Mr. HAYS. And to acquaint them with the relationship of the schools to the institutions, of democratic life.

Mr. MIDDLEBUSH. Right.

Mr. HAYS. I am glad to have that for reference. I think it provides one of the most hopeful things we have seen.

Mr. MIDDLEBUSH. I have some material here that explains more in detail the program that, if you don't have it, I can leave for your research staff if you would care to have it.

Mr. HAYS. I would be glad if you can do that. Talk to Mr. Keele about it, please. What is the official name of the organization? We see it constantly but I have forgotten.

Mr. MIDDLEBUSH. It is the National Science Commission for the Public Schools, headquarters in New York City.

I have here a description of it, the press release of it, and then I also have an account of one of these regional meetings that was held recently in the city of St. Louis, which shows how it works.

This I received just yesterday through Mr. Larson's organization, and it shows how this works at the State level. Here is a document which I am perfectly free to leave with you for your files. I borrowed it, but this explains the work in great detail. You might already have it.

Mr. HAYS. Now, if subversive elements have managed to get into any situation locally in the public school system, would not this be a very valuable weapon in combating it at the very place it needs to be combated and has to be combated, if it is an effective resistance?

Mr. MIDDLEBUSH. Yes; I should say so. I haven't had too much time to study these documents, but the weight of the evidence in the approach here is all on the other side.

Mr. HAYS. Their purposes are broad enough to include combating subversiveness at the local level, wouldn't you think? From what I have seen of their literature—

Mr. MIDDLEBUSH. It may well be. I am not competent to answer that question directly. I can't imagine an organization like this putting on a tremendous drive for the support of public schools and not being somewhat concerned about the problem that you have raised.

Mr. HAYS. I am just thinking about the service they can render that the Federal Government cannot render, for example, by reason of our basic philosophy.

Mr. MIDDLEBUSH. That's right.

Mr. HAYS. If the people are jealous of anything, it is the control of their public school system.

Mr. MIDDLEBUSH. That's right.

Mr. HAYS. At the same time the agencies of the Federal Government, of course, are concerned about any infiltrations.

Mr. MIDDLEBUSH. Correct.

Mr. HAYS. And so we have here a problem of meeting a threat, but meeting it in the American way.

Mr. MIDDLEBUSH. Correct.

Mr. HAYS. That is the reason I invited some further comments on that case. Mr. Keele, do you have any other questions?

Mr. KEELE. I have a question or two I should like to ask. What part, if any, do those organizations which we refer to, perhaps erroneously, as operating agencies, such as the Social Science Research Council and the American Council of Learned Societies, what part do they play in the granting of funds or the direction of grants of funds from the foundations, Dr. Middlebush?

Mr. MIDDLEBUSH. Well, again I am not familiar first-hand with the work of those organizations, so I am not speaking as one who has had that direct contact, but my understanding is that they form a channel through which operating funds can be put out by the foundations themselves.

Mr. KEELE. But I was thinking of the fact that you traced for Mr. Forand a method by which a grant was made, let us say, to your own institution where you formulated the plan at, let us say, the professor or instructor level, and then moved on to the various echelons until it was presented to the foundation.

I was wondering, do you go directly to the foundations?

Mr. MIDDLEBUSH. We go directly to the foundation.

Mr. KEELE. And have you ever had occasion to make appeal to these various societies?

Mr. MIDDLEBUSH. No.

Mr. KEELE. I think that is all I have.

Mr. HAYS. Dr. Middlebush, the committee is certainly indebted to you for a fine statement. Oh, Mr. O'Toole has another question.

Mr. O'TOOLE. Doctor, there was some talk of subversion. Isn't there a great difference in the minds of many men as to what constitutes a subversive matter? That is, we all don't agree on a common yardstick as to what is subversive and what is not subversive.

Mr. MIDDLEBUSH. I suspect that is true.

Mr. O'TOOLE. Well, in these foundations, who is to judge what is subversive and what is not subversive?

In other words, one group could have a plan of action that they think is intensely patriotic, intensely democratic, whereas another group might think it was completely subversive. Isn't that true?

Mr. MIDDLEBUSH. Now you are applying that to the procedure in the making of a grant, and if that point were involved, who would be responsible for making that part of the decision. I should say that would be the officers of the foundations.

It depends on what their own procedure is in making the grant, and there are many variations in that. Or if the grants are of major amounts, they have to clear it through their board, their governing board. Then it seems to me the trustees themselves must assume some responsibility for that.

Mr. O'TOOLE. That is all.

Mr. HAYS. Thank you, Dr. Middlebush.

Mr. KEELE. Dean Myers, please. Dean Myers, would you please state your name and your business or occupation?

**STATEMENT OF WILLIAM I. MYERS, DEAN, NEW YORK STATE
COLLEGE OF AGRICULTURE, CORNELL UNIVERSITY**

Mr. MYERS. My name is William I. Myers. I am dean of the New York State College of Agriculture at Cornell University.

Mr. KEELE. Dr. Myers, will you tell us just a bit about your training and experience, before we go further?

Mr. MYERS. I was born on a farm in New York State. I graduated from the college of agriculture which I serve in 1914. I obtained my doctor's degree in 1918, and I have been a member of the staff of the college of agriculture since that time.

I was absent on leave for about 5 years to serve the Federal Government in the Farm Credit Administration from 1933 to 1938.

Mr. KEELE. Dr. Myers, you are a trustee of the Rockefeller Foundation?

Mr. MYERS. Yes, sir.

Mr. KEELE. And of the General Education Board, I believe?

Mr. MYERS. Yes, sir.

Mr. KEELE. And also of the Carnegie Institution of Washington?

Mr. MYERS. That is correct.

Mr. KEELE. I believe you are also a director of the Mutual Life Insurance Co of New York?

Mr. MYERS. Yes, sir. They call them trustees, but it is the same thing.

Mr. KEELE. And also a director and chairman of the Federal Reserve Bank of New York?

Mr. MYERS. I am deputy chairman of the Federal Reserve Bank of New York, and a director.

Mr. KEELE. You are also a director of Continental Can Co., are you not?

Mr. MYERS. Yes, sir.

Mr. KEELE. And of the L. C. Smith & Corona Typewriter Co.?

Mr. MYERS. Yes, sir.

Mr. KEELE. And of several other corporations which are industrial corporations?

Mr. MYERS. That is correct.

Mr. KEELE. We are particularly anxious to have you discuss with the committee, Dean Myers, the part the foundations have played in the field of the social sciences, and I think it might be helpful if you name and define the social sciences for us at the very beginning, because there seems to be a good deal of confusion in the minds of the public, and perhaps in the minds of this staff as to the area or field of those sciences.

Mr. MYERS. The name "social science" is a handle applied by human beings to an area of human knowledge. The subject or the name "social science" is intended to cover or is used to cover those studies which have as their center man in his relation to other men as individuals, as groups, or as nations.

Perhaps the name "social science" might be made clear by indicating its relation to other branches of knowledge, the natural or physical sciences which relate to the physical world, the medical sciences which are self-explanatory, the humanities which deal with art, literature, with the things of the spirit, and the social sciences which are concerned with the studies of man as an individual, as groups, and as nations.

Now within that broad area of the social sciences, there are a number of different fields. Economics is widely known as a subject which considers the ways in which man obtains the goods and services that are used in making a living.

A second one is psychology, which studies man's mental organization, his mental processes, and his aptitudes.

A third field that is commonly included in the social sciences is sociology and anthropology that studies the relationship of man as groups as well as the culture and the physical characteristics of human races over the face of the world.

Another one is political science or government, which studies governmental organizations and processes at all levels from local to national.

Another one is demography or population studies, which considers the laws that control the growth, the decline, and the migration of populations.

History is also usually included because it attempts to interpret the behavior of men over time, how we got to be what we are out of the developments of the past.

Statistics is sometimes included, but I think of it as a method of study that is used not only in the social sciences but in other sciences.

With these half-dozen commonly accepted fields of course each one

subdivides into many subfields. Economics covers a very broad area and includes many subfields. Agricultural economics in which I obtained some training is one of those.

Money and banking, marketing, sociology and every other one of those subjects that I have enumerated divides into many subfields, but that is the general area that I think is commonly included in the social sciences, and the general subjects that are considered by each of them.

Mr. KEELE. Would you point out for us some of the differences between the social and physical sciences? You have touched on it, I think, but I think you might amplify that a bit if you would.

Mr. MYERS. One of the most commonly heard remarks is that man's knowledge and mastery of the physical universe have outrun his understanding of his fellow man.

Civilization may be threatened with destruction by the atomic bomb because the inventions that were made possible by research in the physical sciences have not been matched by corresponding developments in the social sciences that would limit its use to constructive purposes.

Now, the physical sciences and the social sciences use many of the same basic disciplines. They use the same logic, they seek the same objectives of provable knowledge that can be passed on to others.

Furthermore, there isn't any exact line of demarcation between these different areas, but there is a zone of overlap, and men are constantly going across from one field to another.

For example, modern medical practice includes in addition to the medical sciences a consideration of sociology and of psychology in order to attack the causes of many kinds of illness, both mental illness and physical illness. Well, that is just a general discussion of the broad relationships.

I have put down five points of difference which seem to me to be significant between the social sciences and the physical sciences, and I would think the most noteworthy is the relatively higher rate of achievement in the physical sciences.

The present high development of research in the physical sciences represents the accumulation of several centuries of research, while the beginnings of precise research in the social sciences were made only a few decades ago. Their lag is due largely to the fact that it is more difficult to study human relations than physical problems.

In the physical sciences, the biological sciences, we can study problems in the laboratory or on sample plots and we can vary the causes and attempt to discover the results. In the social sciences it is usually not possible to use experimental methods to isolate each casual factor and to determine its effects. So that, as I see it, the development of the social sciences was delayed until statistical methods could be developed which were appropriate tools for scientific research in these fields.

We have to go out and study social problems, social science, where it exists in the lives and operations of men in society; so that the lag is due in the first instance to the complexity of the problems and to the difficulty of getting methods for scientific research in these fields.

I think there is a second point, and that is that the controversial aspects of many social problems contributed to delay in the development of the social sciences.

Now, scientists are frequently in disagreement in any field on the borderline of what is known, that is in the growing edge of the science, both its physical sciences and the social sciences. The problem arises because in the social sciences problems often result in widespread and heated controversies, because the general public has preconceived opinions or prejudices about them which differ from the suggestions, the solutions suggested by research.

Scientists might differ as to whether we had an expanding or contracting universe, but it wouldn't arouse a very violent public controversy, but in the social sciences every human being is a self-appointed expert, and when the social scientist studies problems of child development and education, parents and other human beings are apt to argue with the findings of science because they may not be in harmony with their preconceived ideas.

If one is seriously ill, he would not question the advice of his doctor even though doctors might disagree among themselves as to the best way of treating that particular malady, but in the social sciences, human beings have no hesitation whatever in tangling with the experts.

Science reduces controversy by substituting facts and principles for speculative theories. But this scientific research is a very slow painstaking process, and it has been particularly so in the social sciences. We need great care in suggesting action based on social science research, because it is not a substitute for common sense. It is merely an additional tool for recent judgment.

Predicting trends in the social sciences is more like forecasting the weather than predicting the results in physics and chemistry, because there are so many unknown factors. Even such a matter as predicting the future growth of population in the United States is subject to a wide margin of error because of variations in the rate of increase that have prevailed in recent decades.

I think a third important difference is the fact that most colleges and universities have been unable to finance research which is necessary for the growth and development of these social sciences. At least until recently with the development of atomic energy relatively simple cheap laboratory equipment could be used for research in chemistry and physics, and such expenditures have been accepted by custom.

And when a member of a college staff, a professor, had time from his classes, he could go to his laboratory and could add to the total knowledge of his science by his individual research. That unfortunately is not true in the social sciences, because funds were not available for this type of research. It was new.

Substantial funds were required annually for traveling expenses to study the problems where they existed, and for clerical salaries to analyze the results.

I mentioned three points there. There are a couple of others. One of these is the result, perhaps, of the first three. I think it is a fair statement that we have a growing number of social scientists in the United States today, but many question whether we have a real social science as the word "science" is commonly understood.

A scientist is a man who applies scientific methods to the study of problems no matter where they are found. A scientist tries to obtain knowledge by observation or experimentation or both with a high degree of objectivity.

He is not trying to prove something, he is trying to find out something, and his studies should be susceptible to repetition by others under similar conditions, so that they could prove or disprove or modify his conclusions.

As he proceeds, he constructs hypotheses as to what probably are the facts of the case, and then he tests those hypotheses, and where the data are sufficient, he tries to formulate theories that are consistent with the data to promote knowledge of the field.

In this sense, in spite of the short history, there are substantial numbers of competent social scientists, although they are pitifully few in relation to the number, the complexity, and the importance of the problems to be studied.

Now, on the other hand, a science is usually considered to be a substantial body of knowledge that has been validated by tests accepted by competent fellow scientists. In general it is interconnected and self-consistent, and it is integrated over the whole by theories accepted by most scientists, and it is associated with an active group of scientists who use it.

While great progress has been made in recent decades, the social sciences cannot be said to fully meet these tests. They can be met only by greater numbers of competent social scientists working over a period of time.

One might say that in the development of social science research, we have a few islands of facts that have been determined, but we don't have a large area of consistent proven knowledge as is true in the older physical sciences that have been developed over a longer period of time.

And last among the list of differences would be in the number of professional workers that follows, I think, as a natural course. The number of professional workers in the social sciences is far below the number working in the older long established physical sciences. According to the most recent figures, the total membership of seven national professional societies including these social sciences was less than two-thirds of the membership of the American Chemical Society alone. They are new, their numbers of scientists are still relatively small.

Mr. KEELE. Dean Myers, would you cite some examples for us of the contributions dealing with social science which have been made with the assistance and support of foundations?

Mr. MYERS. Well, manifestly it would weary the committee and it would be impossible for me to give a comprehensive list. I have put down on my notes 10 examples of which several are in economics and some are in other fields included in the social sciences.

No. 1 is my list is an example in regard to national income. The size of the national income of the United States and its distribution to various recipients to wage and salary earners, to investors and to business proprietors is a landmark, I think, in the social sciences.

These studies were started and carried on by the National Bureau of Economic Research, and they substituted facts for theories and opinions. Trends of national income are closely followed by business firms, by investors, by officers of labor unions, and by Government officials.

These studies also show what part of the gross national product goes to consumers, what is taken by Government, and what is used by business firms to augment their inventories or their factories.

This information is not only important in peacetime, but it was enormously helpful to our Government in mobilizing our economic resources during World War II.

It was possible on the basis of these economic data to judge with a considerable degree of accuracy what part of our national effort could be devoted to the war program without breaking down our civilian operations. It is constantly used in analyzing current developments and judging economic outlook.

Now after the National Bureau, which is supported largely by foundations, had worked out the methods and established the value of these income data, they were taken over by the Department of Commerce and they have been continued by that agency ever since.

The man in the street probably reads and has some knowledge at least in general terms of our gross national product, of our national income. The newspapers carry stories from time to time in regard to current trends.

Of course there is no time when all parts of our economy are equally prosperous. Some industries are depressed, some are in good shape. The national income figures give an authoritative picture of the progress of our total economy, and I think they have very great significance on that account.

Mr. KEELE. I take it this is one of those instances where the risk capital of the foundations permitted a pilot project of this kind which has now been adopted by the Government?

Mr. MYERS. That's right. It paid off.

There is another very good one I think somewhat related to it in the matter of fluctuations in income and employment, what we commonly call cycles. The Employment Act of 1946 was passed by Congress, and as the discussions during the recent campaign pointing to economic instability are one of the most important problems of these times, the tendency of our economy to booms and depressions.

Although theories of the business cycle were relatively embarrassingly numerous, no one had determined which of these theories conformed to the facts until these studies were undertaken by the National Bureau of Economic Research.

These studies on business cycles have greatly expanded the range of scientific knowledge of a very practical and important subject. It is now possible for businessmen and for Government officials to begin to make forecasts and to devise policies that are based on scientific research.

We know, for example, that as our national income fluctuates, our imports increase with national income and decline when it goes down. We know that investment expenditures fluctuate more violently than expenditures by consumers for goods used in living.

We know as a result of these studies that mild depressions are dominated by a decline of inventories, while severe depressions are dominated by a decline in capital investments, and those basic landmarks are extremely useful in knowing what we have at the present time and some judgment on what is going to happen in the future.

A third point or a project that I think has paid very large dividends is one on the national trends of production and productivity. In

1934, the National Bureau of Economic Research brought out a comprehensive survey of production trends of the United States since 1870.

This was followed by detailed scientific research of the trends in output, in employment, and in productivity, in agriculture, in mining, in manufacturing, in electric power, in transportation, and in service industries which showed the physical growth of the Nation for the first time.

These findings are a unique record of national economic performance and show very clearly that the Nation's rising standard of living depends on increasing productivity. They have been widely used in business as well as in Government, and provide the basis for ECA policies to raise the productivity and thereby the living standards of Europe.

I think it is impossible to overestimate the importance of this basic information that shows a very simple fact, that rising standards of living of the United States as a nation are due to rising production per worker in all phases of our economy; that this information is the best defense against efforts of pressure groups to get a bigger piece of the national pie at the expense of some other group, by pointing out that the only way we can improve our standard of living is by efforts which will increase the productivity of workers in agriculture, in industry, and in other types of business activity.

Mr. KEELE. Dean Myers, it would seem to me that those three items, or examples, that you have mentioned here, really constitute a study of the capitalistic system.

Mr. MYERS. That's right.

Mr. KEELE. In operation.

Mr. MYERS. That is correct.

Mr. KEELE. The charge has been made at various times to the staff and to the committee that the foundations, or there was some question—let me put it that way—as to whether or not the foundations were not supporting projects of study which tended to undermine or weaken the capitalistic system.

It would seem to me that the statement you have made here would support the theory that rather they have lent their assistance, at least in these instances, to studies which gave attention to the capitalistic system or our present system, shall we say.

Mr. MYERS. I believe that is true, sir; that knowledge of our present system and how to make it work better are both very important in meeting the competition of any other system or any other ideology, and that these studies directed at our present economic system have been productive both in explaining how it works and perhaps in helping to enable the leaders in business and industry and Government to make it work better.

Mr. KEELE. We only know how to make it work better if we know how it works.

Mr. MYERS. That is right, and substituting facts for theories.

Mr. HAYS. Dean Myers, will it be convenient for you to come back after lunch to complete your statement?

Mr. MYERS. Certainly.

Mr. HAYS. The committee will be in recess until 1:30.

(Whereupon, at 12 noon, the select committee recessed, to resume at 1:30 p. m., of the same day.)

AFTERNOON SESSION

STATEMENT OF WILLIAM I. MYERS—Resumed

Mr. HAYS. The committee will be in order.

Dean Myers, will you pick up where you left off. Perhaps Mr. Keele has a question.

Mr. KEELE. I think you were giving examples, Dean Myers, of instances where the foundations had rendered substantial support to the area of social science, and I believe you had covered three instances of them, all of which, as I recall, stemmed from the National Bureau of Economic Research; is that right?

Mr. MYERS. Yes, sir.

Mr. KEELE. Would you continue and give us the more important other instances that you know about.

Mr. MYERS. I will be glad to, Mr. Keele.

A fourth one that I shall just mention and not discuss, is the historical and statistical studies of financial and credit markets.

We all recall the great speculative boom that ended in 1929 with disastrous consequences to the whole economy, and the years of the great depression.

The National Bureau has been making some research studies to clarify the causes and consequences of this speculative boom, not only in common stocks but in mortgages and foreign bonds, and bonds of domestic corporations which participated in that debacle, and as a result of the studies that have been made, very comprehensive studies, we have expanded our knowledge of credit statistics and the factors affecting losses on all kinds of loans.

That, I believe, and understanding of what happened in that speculative boom and in the subsequent depression, is another example of ways in which we might avoid a recurrence, or at least, minimize the possibility of a similar disaster in the future.

Mr. KEELE. Might I say there, Dean Myers, or might I ask, isn't that another instance of an objective study being made of the so-called capitalistic or free enterprise system under which we operate?

Mr. MYERS. Precisely.

Mr. KEELE. And these studies, I take it—the question itself has some implication in it—were objective studies not made to prove or disprove the errors or the mistakes in our system, but merely to understand them; isn't that right?

Mr. MYERS. They were made for the purpose of finding out what happened, as nearly as possible why it happened, all to the end that by understanding our economic system better we can hope to avoid similar disasters in the future.

Another and a fifth very important point, a way in which the social sciences, through foundation grants, have contributed to public welfare, is in the matter of aptitude testing and personnel selection.

Probably the most significant practical contribution of scientific psychology has been the development of methods of measuring the aptitudes of human beings. We began in the First World War in a very elementary way with the "Army alpha" test of draftees, and as a result of continued research, much of which was aided by foundations, we are now making use of aptitude tests in every field of human activity.

From the time our children enter elementary school they receive various forms of tests of aptitudes to select groups which can be taught more effectively. In going from high school to college, we have a national system of aptitude tests that is recognized as one of the good measures of determining the capacity or the chances for success of applicants in college.

We give our young people tests to the end that we can guide them into vocations in which they seem to have the best chance for success, for which they have particular aptitudes. We use these tests in business in selecting employees of various sorts. We give them different types of tests.

We also do it in Government. Every day in the operation of every business and almost every governmental department and almost all types of educational institutions we are using these aptitude tests that have become a part of our everyday life. And the term "I. Q." is known by the lay public as one of the measures of accomplishment by these tests.

Perhaps the biggest job that has ever been put before any group using aptitude tests was in the Second World War, when we not only had many more men to select, but we had a more complicated selection problem because of the requirements of special skills for mechanized and airborne war.

The rapidity with which the Armed Forces was expanded and their effectiveness as a team depended to a really important extent on a selection and classification program to put these men in positions where their skills and aptitudes were most needed.

Considering the millions of men and women involved and the many types of specialized training that were required, I think a really very important job was done that again contributed to the welfare of the Nation in time of war.

Another and a different type of way in which the social sciences have contributed to public welfare is in the matter of questioning and interviewing techniques. An important part of social science research consists of quick and accurate collection and analysis of information that is needed for policy-making and executive decisions in business, in Government, and in education.

Now, some of these facts for social science research come from records, some come from direct observation, but many come from asking people about themselves and their opinions, their experiences, their beliefs, and their intentions.

Since the accuracy and validity of the findings of such questioning depends on the method used, a great deal of research has gone into the refinement of interviewing and questioning methods. And the technical knowledge developed by research involves the wording of questions so that they will not contribute to bias, how they select samples of people to represent larger groups, within known limits of accuracy, and the methods of analyzing the answers that are obtained.

Once a good technique is developed by research, it soon finds its way into business and Government applications, as we have seen in market research, in personnel work and other applications. Here again the application of these techniques is the pay-off, but you don't get the application except by support of basic research to which foundations have contributed greatly.

And these techniques of questioning are used in a wide variety of applications. A very common everyday example is market research on consumer preferences.

No modern firm would think of introducing a new product or of improving an old one without a careful study of consumer preferences in regard to the gadget or the machine that they intended to present to the market.

Another very comprehensive example is the census which provides an enormous amount of indispensable information for agriculture, for business, and for Government. The census is staffed by social scientists who have been trained in the use and analysis of these questioning methods.

The Federal Reserve Board carries on studies, or rather has a private research organization carrying on studies, one each year, that obtains from a cross section of the people information about family earnings and their expenditures and their savings and their plans for future spending that could be obtained in no other way. This information is used by the Federal Reserve Board as one of the guides to credit policy and it is widely used by Government and by other business in planning their operations.

Another important area is in the use made by questioning techniques by the Army during the last World War.

The Research Branch of the Information and Education Division of the Army, with the help of competent social scientists, used these questioning techniques to obtain information on many problems, such as morale of the soldiers, mental breakdown, those soldiers who were progressing toward mental breakdown, the control of venereal disease, and their postwar educational plans.

The most widely known contribution of this type of research was that underlying the point system of discharge during demobilization. The point system was developed as the result of studies made of the attitude of the soldiers in regard to the relative weight of different factors in determining who would be demobilized first.

Another example that is perhaps particularly in our minds right now in public-opinion polls. During the campaign many private polling organizations presented from week to week the results of their studies of what samples of the population thought they were going to do in regard to the election that was coming up.

Another example in this list is what I have called area studies. The leadership of the United States in world affairs makes it very important for this country and especially for the officers of Government to have available for use when they need it detailed information about remote and obscure areas of the world, and trained men with command of this knowledge.

These resources were mobilized for military purposes during the Second World War. For example, a group of social scientists helped the armed services to develop in a short time a handbook on the Pacific islands that gave information about the geographical and the political and the cultural characteristics of the people who were living on Okinawa and the other Japanese mandated islands, and this information was used for military purposes and later for civilian administration.

The area studies contributed also to the development of studies of Japanese morale, and it is interesting to note that in 1945 in May as the result of careful studies, prediction was made of the early collapse of the Japanese war effort, in spite of the commonly held opinion that the Japanese would fight to the last man.

Since the war, foundations have assisted and are assisting a number of universities to develop special competence in various areas of the world that we need to know about and which are not adequately covered elsewhere.

These area programs on Russia, on the Far East, on southeastern Asia, on the Near East, on Latin America, and so on, are a very important part of the information that is needed by the Government. These centers are used for the training of officers, employees of the State Department, and of the Department of Defense, so that they will be better informed on the areas of the world with which they will be concerned.

I would like to mention about two other points in which I think social sciences have made important contributions. One of those is in the general heading of contributing to better human relations in industry.

Modern practice in industrial management has been redirected as a result of some studies that were made by the Harvard Business School in the early thirties. These were originally directed at a study of industrial fatigue, but the researchers discovered that productive efficiency depended not only on physical conditions and the size of the pay check, but also on human relations. And as a result social scientists are being widely used by business in increasing productivity per worker through improved industrial management.

Another area, ninth in my list, in which they have contributed is that of public administration. For example, the Public Administration Clearinghouse was established and has been largely supported by foundations in Chicago. It provides headquarters and assistance for many different organizations, the Council of State Governments, the American Municipal Association, the Municipal Finance Officers Association, and many other similar organizations of State and local officials.

The clearinghouse—and these national organizations have State and local officials—has made many valuable contributions in strengthening State and local government over the entire country by making it possible for these officials to employ experts to study common problems and to unite for common action. It has furnished the center at which national organizations of State and local officials could work out better methods of local and State government.

The Hoover Commission on the Reorganization of the Executive Branch of Government employed organizations such as the Council of State Governments and other experts, trained in public administration and the related fields, in its studies of the reorganization of the National Government for more efficient operation.

Many departments of the National Government and of State governments are employing management consultants, men trained in public administration, in order to provide better service at lower cost through these governmental units.

And last in my list is that of mental health. Modern medicine is paying increasing attention to the social and psychological factors that

affect mental and physical health. It is not only a matter of the human being as an animal, but his welfare and his health, both mental and physical, depend upon his surroundings and in part upon his attitudes.

So that research into the many obscure causes of mental ill-health is now being carried on across a broad front of medical and social sciences. This is one of our most important problems, as is shown by the fact that the number of patients in mental hospitals increased from 481,000 in 1940 to 564,000 in 1949, and it is still increasing.

We need to make use of all scientific research that will contribute to a solution of that problem and to the curing of those who have physical or mental ill health.

I could go on from there and give many others, but those I think are some of the more important ways in which the social sciences have contributed to national welfare through aid given largely by foundations.

Mr. KEELE. Dean Myers, would you indicate to us something along the lines of the number of foundations which have been aiding and assisting the social sciences, and also something of the extent to which they have given assistance?

Mr. MYERS. Well, as far as we can determine, major support of social-science research comes from a relatively small number of foundations.

Among these, the most important are the Ford Foundation, which is a newcomer in the field, the Rockefeller Foundation, the Carnegie Corp., the Twentieth Century Fund, the Commonwealth Fund, the Wenner Gren Foundation, the Grant Foundation, the Field Foundation, the Millbank Memorial Fund, Russell Sage Foundation, Maurice and Laura Falk Foundation.

Perhaps a dozen or so such names would include most of the sources of foundation support for research in the social science while as I understand it the total number of foundations exceeds a thousand, so that the number that are aiding the social sciences again perhaps for some of the reasons I have given is very small.

We have no reliable figures on the total amount of financial support of social-science research given by foundations, but it seems clear that it is a very small, one might almost say insignificant, part of the total expenditures of such organizations. We have figures on some of the major foundations, but we have no way, unless it is obtained through the answers to questionnaires provided to this committee, to get at the total expenditures.

Mr. KEELE. I was going to say we may be able to furnish some information on that when we finish processing the questionnaires.

Will you tell us whether you feel that foundation support is a continuing need for research in the social-science field, and also something of how that support operates or how the foundations support the social sciences.

Mr. MYERS. Well, I would say that the history of research in the social sciences and in other fields has shown that business and Government will support applied research that is of importance to them after its value has been demonstrated.

Foundations in my judgment play a critical role in the development of new fields and in continuing to support basic research in the established fields. At the same time the problem of wise investment of funds to promote public welfare by foundations is much more difficult

than the investment for profit in a business corporation because of the fact that we have a lack of accurate measures of success.

In a modest way I have had an opportunity to participate in the deliberations of boards of directors of business corporations and of two or three foundations. It is much easier for the directors and officers of a business corporation to decide how to invest money profitably than it is for the trustees of a foundation to decide how to invest money wisely for the public welfare.

When you are considering a business investment, you have estimates of costs and profits, you have balance sheets, income statements, you have measures that report accurately the results of both the forecasts and later the results of the investment.

In the case of foundations, you have no quantitative measures which accurately determine the results of an investment. It has to be the best judgment of the officers and of the trustees both in the selection of fields and in the selection of individuals and organizations which are aided.

That is especially true in the aspect in which I think the work of foundations is perhaps most significant. That is the aspect of pioneering.

Foundation funds might be considered as venture capital to assist in developing the social sciences and other new fields by aid in scientific research. We know that similar aid has been given and is being given to the physical and medical sciences over many years and it has assisted them in their development and stimulated broad support of applied research by Government and business.

These pioneering studies are particularly difficult to evaluate. A large part of social-science-research products consists of reliable methods for quick and accurate collection and analysis of information needed by Government and by business.

For example, the invention and perfection of the "life table" was essential to the growth of the life-insurance business. We know that for any one individual the expectation of life is unknown, but the development of life tables based on the known mortality of large groups has given us a method by which life-insurance companies operate and extend life protection to the citizens of the country. Of course a similar principle is used in other types of insurance, fire insurance, health insurance, and so on. Once you work out a good technique by basic research, it finds its way into business and Government.

Again I remind you that these techniques, these applications, are the pay-off, but you don't get these practical results except by support of basic research, and in supporting basic research in the social sciences, foundations have typically left complete responsibility for planning and execution to the person or institution receiving the funds. In this way they have established essential conditions for free unbiased scientific inquiry.

As soon as the scientific basis has been determined, your business schools, colleges of agriculture such as the one I am associated with, business firms, Government use the applied techniques developed through basic research, but the use of social science in agriculture, in business, in Government, is limited by the development of the basic science on which these applications rest.

Another way in which the foundations have greatly aided, the first being pioneering, and one that I think is extremely important, is to

strengthen teaching in the social sciences in colleges and universities by aiding promising men to carry on scientific research which can't be financed by college funds. This aid serves the double purpose of improving instruction because of better trained teachers, and of strengthening the field of science.

A third way in which the foundations assist the social sciences is by scholarships and fellowships to increase the supply of trained scientists for colleges, for Government, for business.

Scarcity of trained scientists that are really competent is a severe handicap to the development of the social sciences. Over about 25 years the Social Science Research Council has given about a thousand fellowships and scholarships in the social sciences. These have been of enormous importance but many more are needed to meet the expanding needs for trained men in business and Government as well as in the colleges.

Those are the ways as I see it in which the foundations have made contributions that would not be made or have not been made by any other agency in the development of these new fields.

MR. KEELE. We come back again to the theme that has been mentioned here by almost every witness, namely that the characteristic contribution of the foundations is their assistance in pioneering on the perimeter of knowledge.

MR. MYERS. That's right. And then in continuing the basic research after the pioneering is over, because your business firms, Government, similar organizations will carry on the applied research, but some institution is needed which will finance the basic research on which further growth depends.

I would like to mention another, a fourth area in which I think foundation support has been very important, and I have referred to that previously indirectly. That is the National Bureau of Economic Research.

This national research organization in the field of economics, financed largely by foundations, is the most important organization of its kind in the world. It has been the most important single factor in replacing economic theories with facts.

That organization has carried on pioneering research that I have referred to such as studies of national income, of business cycles, of national production, and then after carrying on these pioneering researches and establishing their value, the bureau has allowed the routine operations of these studies to be transferred to Government so as to release its resources for future pioneering.

For example, the bureau's estimates of national income, capital formation, and consumer spending have been taken over and continued by the Department of Commerce. Its measures of physical output and productivity of manufacturers have been taken over by the Bureau of the Census; its developed estimates of residential construction by the Bureau of Labor Statistics; its estimates of the volume of consumer credit by the Federal Reserve Board. It has freed its organization of the responsibility of routine so that it could continue pioneering work.

Finally it has stimulated economic research and the improvement of teaching in the social sciences in colleges and universities.

The bureau maintains a very small but very competent permanent staff and draws largely on colleges and on business firms and Government for men for temporary periods who are especially qualified for a given study. Over about three decades of operations several hundred men and women from universities, Government and business have obtained invaluable research experience in this way.

After the job was completed they have gone back to their regular vocation, occupation, and were better and more competent teachers or research workers on that account.

Mr. KEELE. I am going to return again to the theme which I touched on before, and that is the fact that we have reiterated so many times in letters and in interviews the charge that the social sciences with the support of the foundations have pursued lines of study which tend to undermine or weaken the capitalistic or free-enterprise system or what we might largely term the American way of life.

Dean Myers, you as an educator, as an economist, as a director of some of the foundations and as a director of some nationally known companies seem to me to be in a position to answer this question with much more understanding than the average person.

In your opinion have the social sciences with the support of the foundations shown any tendency to angle their studies in such manner as to undermine the American way of life as typified by the capitalistic system and free enterprise?

Mr. MYERS. In my judgment the result of their work has been very strongly in the strengthening of the American system of free enterprise.

The CHAIRMAN. Are you prepared to defend that assertion?

Mr. MYERS. Yes, sir. I would say that the studies of how our economy works, the studies of our national income, our markets, our productivity, to find out what has happened and why it happened is of the greatest value in understanding our economy and in helping all people not only to understand it but to make it work better.

Mr. KEELE. The areas on which you have touched seem to me to support the theory that you have just stated, namely that these studies have been directed primarily to an understanding and thereby a strengthening of our existing system. Would you say that that is typical of the work that has been done?

Mr. MYERS. I think that is typical, and I think that the basic reason for it seems to me to be this: The greatest contribution made by social sciences to our national welfare by the aid of foundations has been substituting fact and principles that can be demonstrated by scientific studies for opinions.

The best answer to argument is facts, and what we have needed in the social sciences is more facts, more study of facts, so we will have a more comprehensive body of scientific knowledge.

We have pretty well gotten rid of witch doctors in this country in medicine. We still have a few witch doctors in the fields of the social sciences.

I mean by that everybody is a self-appointed expert. We still have many gaps in the sciences that need to be filled before it can measure up in over-all comprehensiveness to the established long-developed physical natural medical sciences. But as far as it has gone, and to the extent that it has gone, research in the social sciences has substituted facts and sound principles based on facts for speculative theories.

I would like to make just one or two other points, with your permission. Another very important agency in the social sciences that has been aided by foundations is the Social Science Research Council to which you referred this morning. This is a cooperative organization to stimulate and help organize scientific research in the social sciences.

It also selects the most promising young men for scholarships and fellowships, using funds provided by foundations. The membership of the council is made up of the professional societies of the social sciences, and its directors are drawn from men in these professions working in universities, business, and government. In other words, it is a cooperative organization largely of professors of social science that helps to coordinate their efforts to develop programs of research.

It has been effective not only in giving fellowships to train more promising men but in helping individual professors to get aid of foundations in carrying on scientific research.

Without going into any large number, the Brookings Institution here in Washington has been aided largely by foundation grants and it makes many important research studies especially for the National Government.

The Food Research Institute at Stanford University has received many foundation grants for its scientific studies of food problems.

In addition to these, the foundations finance large numbers of research projects to be carried on by some of the most promising workers on the staffs of colleges and universities. This important part of their activities serves a threefold purpose.

It builds the scientific structure of the social sciences; it improves the content of the teaching and the qualifications of the teachers; and it helps to train more competent men for these fields.

What we need, Mr. Chairman, in the social sciences, in my judgment, is more scientific research so that we can push the boundaries of known knowledge back further, and further eliminate speculative theories as guides in thinking and in action, both public and private.

Mr. KEELE. Dean Myers, one of the charges which we have had repeatedly made to us is that the foundations working through shall we say the Social Science Research Council or the American Council of Learned Societies or any other groups through which they do work tend to a sort of self-perpetuation.

The term I believe has been used by a number of critics is that of intellectual in-breeding, the thought being that the same men over the years or the same group of men holding much the same ideas get control of the apparatus by which these grants are made or are allocated, and that it tends to freeze out those of a different opinion or a different school of thought. Do you think that charge is fairly made or at least can be substantiated, or do you differ with it?

Mr. MYERS. I do not think the charge is accurate. Again I should have explained previously I am not an expert in these fields. My experience has been directly in two or three foundations, and as an agricultural economist and a worker in the field of agriculture.

It happens that at my institution my college has been the recipient of very insignificant grants because we have reasonably adequate support from public funds for research in education and agriculture.

However, as a person, a dean of an agricultural college, I recognize our dependence in agriculture on further development of the basic sciences on which all of agriculture rests, so that we can get support for

carrying on reasonably adequate programs to improve the production of crops and animals, to improve the fertility of the soil, to improve the well-being of farm people, but we cannot get public funds for basic research.

We still depend for the continuation of agricultural progress on basic research in the physical sciences, in the social sciences, and in the humanities for the best progress in agriculture in an applied field, and I think that is a fair sample of applied education.

Mr. KEELE. Would you cite by example what you referred to as the basic research on which agriculture bases its progress?

Mr. MYERS. Well, one of the very important developments in agriculture in the past 20 or 30 years has been the development of new and better varieties of plants, all kinds of crops. Hybrid corn is an example, improved varieties of wheat and oats and of cotton and of potatoes.

Well, those developments in the field of plant breeding would not have been possible without basic research in genetics, in botany that increased the knowledge on which the plant breeders work, so that as we move ahead to develop still better plants that are not only productive, that have desirable nutrients, that are resistant to disease and insects, we are continually dependent upon the further growth of the basic sciences on which we represent the application.

I am fairly familiar with the field of agricultural economics and of marketing. Well, agricultural economics is the applied economics to agriculture. And in marketing we are studying the marketing to try to improve the marketing of many farm products.

The development of those applied social sciences depends to an important extent on further scientific research in basic economics, and in fundamental economic studies, such as the ones I have referred to, and others.

It is just as true in the social sciences as it is in the physical sciences, and I think it is also true in the medical sciences that we depend on continually growing phases of basic knowledge developed through basic research.

Mr. KEELE. And the money for that is not available, you say, from the public funds in the amounts necessary?

Mr. MYERS. Very limited amounts. We can get funds in the business schools and in the colleges of agriculture for applied research. It is from foundations that the principal funds come for carrying on basic fundamental research, things that have no immediate application.

Mr. KEELE. I think I have stated probably the negative side of the criticism that has been made most frequently. Let me put it in the positive.

I should say that of the charges that have come in to the staff of the committee, the greatest numbers and the criticisms are directed primarily along the lines that the social sciences with the support of the foundations have tended to encourage socialism rather than the system of free enterprise or capitalism under which we are presently operating or did operate, if that is a more correct term.

In your opinion, is that charge substantiated by the facts?

Mr. MYERS. I do not think it is, sir. In my opinion, the basic studies made by the National Bureau, those on national income, those on business cycles and those on production and productivity that show how our economy works that have indicated the relationship, the

basic relationship between productivity per worker and national standard of living, have been among the most important factors in keeping our economy on an even keel and giving wide recognition to the fact that if we want to have a rising standard of living, all groups must be organized so as to produce more per worker so that we will have more to divide.

One can make comparisons that would be odious between the philosophy of this country, which recognizes that the only way you can have a higher standard of living is to produce more, and some countries of the Old World where they have not had that philosophy of life, they have been dividing scarcities. Well, I don't want to attribute too much to one organization. Let's say it is part of the genius of the people of America and a new country, but I believe that the studies show the close relationship between increasing productivity and improving standards of living which have been very important factors in wise public policies.

As I made the point this morning, in preventing selfish pressure groups from getting success in trying to get a bigger piece of the pie at someone else's expense, instead of recognizing if they want more pie, the productive way is to produce more, and then with fair methods of distribution they would get more. I believe that the basic economic studies have been very important in giving wide recognition in this country to that rather basic fundamental thing which I think underlies in part our free economy.

Mr. KEELE. I gather from what you have said today that if we were to try to simplify the matter and place it in capsular form, we could say that the chief beneficiaries as regards groups of the work of the social scientist and social science has been, one, the Government, and two, business enterprises who have applied the knowledge that has been gained through your research. Is that correct?

Mr. MYERS. I don't know that it is one and two.

Mr. KEELE. I don't know in which order.

Mr. MYERS. I don't either, but certainly business generally, including agriculture and Government, have both been important beneficiaries, and with them, of course, the Nation.

Mr. KEELE. But those two agencies or groups are the ones who have seized upon the work done and applied the research to their problems to a greater extent than any other groups, I gather.

Mr. MYERS. That is correct.

The CHAIRMAN. Mr. Hays, I shall pass the opportunity to question Dean Myers, but I would not like it understood that I am accepting as facts in the case the statements that he has made, because this committee is obligated to these distinguished people like Dean Myers for coming here of their own accord in response to invitations, to give the committee their best thought on some phase of the question which the committee is dealing with.

I shall want before we go much further in the hearing to test out questions which have been raised by the questions that counsel asked Dean Myers, as regards the behavior of foundations. In other words, in their being creatures of the capitalistic system, have they not in their operations undertaken to bring the system into disrepute, and has there not been developed a socialistic leaning on the part of most of the foundations that have entered into the formulation of the poli-

cies they have made and under which they have carried on. I believe that is all right now.

Mr. KEELE. I assume, Dean Myers, that was the expression of your view.

Mr. MYERS. That is correct.

Mr. KEELE. There may be those who would differ. I suppose each man is entitled to his own view, but I was particularly interested in asking that of you because of the fact of your wide experience both in business corporations and in serving on the boards of the foundations and also because of your interest in and work in the social sciences.

Are there any other questions?

Mr. GOODWIN. No questions.

Mr. KEELE. I would like to express to Dean Myers our appreciation of the staff, and I am sure of the committee, for the assistance he has given us, aside from appearing here because he has been most cooperative and helpful in advising us.

Mr. MYERS. May I thank you for the opportunity and just say this: That the best answer to any speculative theory is further scientific research in the field of the social sciences.

Mr. HAYS. Thank you very much, Dean Myers.

(The prepared statement submitted by Mr. Myers reads in full as follows:)

STATEMENT OF WILLIAM L. MYERS, DEAN, NEW YORK STATE COLLEGE OF AGRICULTURE,
CORNELL UNIVERSITY

WHAT THE SOCIAL SCIENCES ARE

The social sciences involve the study of man in relation to other men as individuals, groups, and nations. The major commonly recognized fields of the social sciences are:

1. Economics considers ways in which man obtains goods and services in making a living.
2. Psychology studies man's mental organization, his mental process, and his aptitudes.
3. Sociology and anthropology study the relations of men as groups as well as the culture and physical characteristics of human races.
4. Political science or government studies governmental organization and processes at all levels.
5. Demography or population studies consider the laws that control the growth, decline, and migration of population.
6. History interprets the behavior of man over time.

Each of these fields includes a very broad area. Economics, for example, with which I am more familiar than the other social sciences, includes, among other studies, those of money and banking, business and labor organizations and management, public finance, international trade and finance, marketing, land economics, national income and wealth, and economics of transportation. Many of these areas may in turn be subdivided further in terms of professional specialists who teach in a large university, who do research, and who work with businesses and a variety of other groups and organizations having a direct interest in their activity. In the college of agriculture at Cornell, for example, agricultural marketing is divided into marketing dairy products, marketing fruits and vegetables, and marketing poultry, eggs, and livestock. The other fields of social science have also been divided and subdivided into increasingly numerous lines of specialization as knowledge in these fields has expanded.

This growth has been paralleled by even greater expansion in the physical and biological sciences and by the increasing specialization of occupation in every walk of daily life.

SOME DIFFERENCES BETWEEN THE SOCIAL AND PHYSICAL SCIENCES

There is no hard and fast line between the social sciences and the physical and biological sciences. Modern medicine, for example, increasingly pays attention to social and psychological factors which affect both mental and physical health. The trend is clearly indicated by the development of a whole new field of psychosomatic medicine. Research into the obscure causes of mental illness is now being prosecuted across a broad front of biological and social sciences.

Nevertheless, man's knowledge and mastery of the physical universe have outrun his understanding of his fellow man. Civilization may be threatened with destruction by the atomic bomb, because the inventions made possible by research in the physical sciences have not been matched by corresponding developments in the social sciences that would limit their use to constructive purposes. At the same time, new and more intricate military devices, developed as a result of progress in the physical and biological sciences, are necessary for our defense, but are not most effective unless men can be selected, organized, and trained to make the best use of them. Technical progress in industry is being accompanied by growing attention to how to hire, train, and persuade men to increase production. Personnel work in industrial corporations uses increasingly the research of psychologists, sociologists, economists, and industrial engineers for this purpose.

The physical and social sciences use many of the same basic disciplines, the same logic and seek the same objectives of provable knowledge that can be passed on to others. Furthermore, there is, as already indicated, no exact line of demarcation, but a zone of overlap between them. There are, nevertheless, essential differences.

One of the important differences between the social and natural sciences lies in their historical development. Men have been developing the principles of physical science by the use of scientific methods for several centuries. The first substantial, precise scientific work in the fields now included in the social sciences, on the other hand, began only a few decades ago. This lag is due largely to the fact that it is more difficult to study human relations than physical problems. In the social sciences it is usually not possible to employ experimental methods to determine what causes bring about what effects. Laboratories and field plots can be used to develop better varieties of seed corn in the science of plant genetics. It is obviously impossible to segregate in this way individuals or groups of people to study the great majority of problems of human behavior. This makes it necessary for the social scientist to observe what people are doing around him either by direct observation, by asking people about themselves or by searching in the records of the past. The necessity of leaving the office and laboratory to study most problems of social science delayed development until statistical methods were devised which proved to be appropriate tools for scientific research in these fields.

It seems likely also that the controversial aspects of many social problems have contributed to delaying the progress of the social sciences. Arguments among scientists are always found on the growing edge of every science, physical and biological as well as social. However, arguments about social-science problems often result in widespread and heated controversies because the general public is deeply interested in them and the suggested solutions may differ from its preconceived opinions and prejudices.

In many areas of social science, such as child development and education, for example, most people consider themselves experts. On the other hand, progress in the medical sciences has been such that few people are, for example, inclined to substitute their own opinions for those of a physician when they are seriously ill, even though medical scientists may argue among themselves concerning appropriate treatment for the disease.

Science reduces controversy by substituting facts for speculative theories, but scientific research is a slow and painstaking process especially in the social sciences. Great care is needed in suggesting action based upon such research. Social science is not a substitute for common sense, but an additional tool for reasoned judgment. Predicting trends in the social sciences is more like forecasting the weather, with all the variables involved, than predicting results in physics or chemistry.

Another difference in the development of the social and physical sciences is that most colleges and universities have been unable to finance research which is necessary for the growth and development of social science. Until rather recently, relatively simple, cheap laboratory equipment could be used for re-

search in chemistry and physics, and such expenditures had been accepted by custom. On the other hand, funds were not available for social-science research because it was new and because substantial annual grants were required both for travel expense to study the problem where it existed and for clerical salaries to analyze the results.

Another important comparison between the social and physical sciences lies in the fact that we have social scientists today but many question whether we have a real social science. A scientist is a man who applies scientific methods to the study of problems. In the word of Chester I. Barnard, formerly president of the Rockefeller Foundation, the scientist tries to obtain knowledge by observation or experiment or both, with a high degree of objectivity. His methods of study and presentation of results are such that others can, if they choose, repeat the procedure under similar conditions. The scientist constructs and tests hypotheses for this purpose. Where the data are sufficient, he tries to formulate theories consistent with the data to promote knowledge of the field. In this sense, in spite of the short history of social science, there are substantial numbers of competent social scientists although they are pitifully few in relation to the number, complexity, and paramount importance of the problems to be studied.

Science, on the other hand, according to the same author, is a substantial body of knowledge, validated by criteria accepted by a group of competent scientists. In general this knowledge is interconnected and self-consistent. It is integrated by theories accepted by most scientists and it is associated with an active group of scientists who use it. While great progress has been made, the social sciences cannot yet be said to meet these tests fully. We have competent social scientists but greater numbers are needed, working over a period of time, if the social sciences are to become genuine science in the sense indicated.

Another important difference between the social and physical sciences is that, as would be expected, the number of professional workers in the social sciences is far below the number working in the older, longer established physical sciences. According to the most recent figures, the total membership of seven professional societies in the social sciences was less than two-thirds the membership of the American Chemical Society alone.

SOME CONTRIBUTIONS MADE BY THE SOCIAL SCIENCES WITH FOUNDATION SUPPORT

One way to judge the usefulness of the foundations in the social sciences is to examine results of research they have sponsored. I should like to indicate some of the work that has been done which I believe to be outstanding. This is not to say that all foundation-sponsored work has been equally useful or that the foundation officers themselves would not be the first to admit that mistakes have been made. A baseball player who hits in one-third of this times at bat is considered to have a high batting average. Dun & Bradstreet compile an impressive record of mistakes in the form of business failures.

But let me mention a few of the successes. The merits and the very valuable accomplishments of the foundations should be recognized. It is impossible, in the time available, to attempt a clear summary of all the valuable research and other activities aided by the foundations, and I can only cite a few outstanding examples.

1. *Studies of the size of the national income of the United States and its distribution to wage and salary earners, investors, and business proprietors made by the National Bureau of Economic Research.*—These studies substituted facts for theories and opinions. Before the National Bureau published its basic studies of the national income, even trained economists often had fanciful ideas about how the national income is distributed. In the absence of dependable information, it was impossible to discriminate intelligently among the many conflicting theories. All this has changed in a single generation. Hardly a day now passes without some mention in the public press of some actual or impending change in the national income or in the gross national product. National income accounts are now followed closely by business firm, private investors, trade-union officials, and governmental agencies. Even laymen have some understanding of these technical matters. No one need guess any longer about the size of the national income, its rate of growth, or its distribution among the principal economic groups or regions of our country. Likewise, one can now tell with substantial accuracy what part of the gross national product passes into the hands of consumers, what part is taken by the Government, and what part is used by business firms to augment their inventories or their instruments of production. Information of this type prove enormously helpful to our Government in mobiliz-

ing economic resources during World War II, and it is constantly used nowadays by business managers and Government officials in analyzing current developments and judging the economic outlook. After the research methods had been worked out and the value of these studies established by the Bureau, they were taken over by the Department of Commerce and have been continued by that agency.

2. *Studies of fluctuations in incomes and employment.*—The Employment Act of 1946 and discussions during the recent Presidential campaign point to economic instability as one of the paramount problems of our times. Although theories of business cycles were embarrassingly numerous, no one had taken the trouble to determine which of these theories best conformed to the facts of experience until studies were undertaken with foundation support by the National Bureau of Economic Research. In the studies, the basic scientific need, therefore, was to ascertain what actually happens within our economy during booms and depressions, and thus bring the test of experience to bear on the theories that keep clamoring for public attention. The Bureau's factual researches on business cycles, which are reported in numerous treatises and monographs, have greatly expanded the range of scientific knowledge of this very practical subject. For example, the Bureau has established that our imports fluctuate in close harmony with the national income while our exports do not; that investment expenditure fluctuates over a much wider range than consumer spending; that inventory investment is by far the most volatile type of investment outlay; that short and mild depressions are dominated by declines in inventory investment while long and severe depressions are dominated by declines in fixed capital investment; that aggregate business profits reach a cyclical peak at about the same time as national income, but that the proportion of business firms experiencing rising profits begins to decline about 6 to 12 months before aggregate profits and national income reach their peak. Equipped with numerous factual findings of this character, economists can face the speculations of a Marx or a Keynes with something better than their own speculations. Not only that, they can begin to frame forecasts and to devise policies that rest on a scientific distillation of experience.

3. *Studies of national trends of production and productivity.*—In 1934, with foundation financial support, the National Bureau of Economic Research brought out a comprehensive survey of production trends in the United States since 1870. This was followed by detailed scientific research of the trends in output, employment, and productivity in agriculture, mining, manufacturers, electric power, transportation, and service industries which showed physical growth of the Nation for the first time. These studies indicated, among other things, how large the gain in output had been, and how sensitive efficiency has been to changing economic circumstances, such as unemployment, inflation, the existence of war, and the availability of capital. They have also provided basic information on the growth of merchandising, the service trades, and governmental functions—a range of activities which had previously been neglected in economic literature, although they have expanded much more rapidly than the commodity-producing industries and already embrace a good half of the economic activity of the American people. The Bureau's findings concerning production, employment, and productivity have been widely used because they are a unique record of economic performance and because they show very closely that the Nation's rising standard of living depends on increasing productivity. The policies of the ECA, directed toward raising the productivity of European industry and thus the living standards of Western Europe have derived much of their authority from these American data, for which there was not until very recently any European counterpart.

4. *Historical and statistical studies of financial and credit markets.*—The National Bureau with foundation support has conducted investigations of the performance of the financial system. The boom in common stocks during the 1920's and its aftermath are notorious, but speculation was by no means confined to common stocks. It extended to lending on farm and urban mortgages, purchase of foreign government bonds, and to other types of credit. To clarify these and related experiences, the National Bureau has made extensive historical and statistical studies of the financial and credit markets. The first of these studies was devoted to the practices of financial institutions engaged in consumer financing, particularly consumer installment financing. Subsequent investigations have dealt with the financial institutions, including Federal and federally sponsored agencies, involved in the financing of business, agriculture, construction, and trading in real estate. These studies were built up from new primary materials, and they have vastly expanded our knowledge of credit

standards and of the factors affecting losses on consumer loans, business loans, and mortgages. A comprehensive study of the experience of investors in domestic corporate bonds since 1900, and another study of experience with foreign government bonds issued during the 1920's, have rounded out this series of financial investigations. The results of these studies are widely used by all types of financial institutions.

5. *Aptitude testing and personnel selection.*—A most significant contribution of scientific psychology has been the development of methods of measuring human aptitudes, emerging partly as a result of the work of such leaders as Thurstone, Terman, and Thorndike who received substantial financial assistance from the foundations for their studies. From the "Army alpha" test of draftees during World War I, steady progress has been made by scientific research so that a great variety of aptitude tests is in daily use in innumerable activities.

Such tests are employed in the field of education from the time the child begins school through college entrance and college and including, among other applications, vocational guidance. Many businesses test employees for many different kinds of work through the application of these methods. Government—Federal, State, and local—employs them widely in selecting employees for different kinds of work.

World War II presented a much more complicated selection problem than World War I, not only because of the larger number of men involved, but also because of the requirements for special skills for mechanized and airborne war. The rapidity with which the Armed Forces were expanded and their effectiveness as a team, depended to an important extent on a selection and classification program to put men in positions where their skills and aptitudes were most needed. Considering the difficulties involved, a really remarkable job was done.

6. *Questioning and interviewing methods.*—Some of the facts used in social science research come from records. Some come from direct observation, but many come from asking people about themselves, their opinions, experiences, beliefs, expectations, and intentions. Since the accuracy and validity of the findings depend on the method used, much research effort has gone into the refinement of interviewing and questioning methods toward which foundation support has contributed. The technical knowledge developed by research includes the wording of questions; how to select samples of people to represent larger groups within known degrees of accuracy; and methods of analyzing the answers that are obtained. These techniques are being used in a wide variety of applications. The foundations made important contributions to their development. Among the numerous applications of questioning and interviewing methods are those employed in market research on consumer preferences. The census provides indispensable information for agriculture, other business, and Government. The Census Bureau is staffed by social scientists trained in the use and analysis of questioning methods.

The Survey Research Center of the University of Michigan, which has received extensive foundation support, makes an annual survey of an accurate cross section of the population for the Federal Reserve Board in order to obtain information about family earnings, expenditures, savings, and plans for future spending that can be obtained in no other way. This information is used by the Board as one guide to decisions on credit policy. It is also widely used by other Government agencies and by business.

The Research Branch of the Information and Education Division of the Army, staffed by competent social scientists, used these techniques during World War II to obtain authoritative information on many problems, such as morale, mental breakdown, venereal disease control, and postwar educational plans of soldiers. The most widely known contribution of this agency was the research underlying the "point system" of discharge of servicemen during demobilization.

7. *Area studies.*—World developments make it important for the United States to have available for use when needed, detailed information about remote and obscure areas of the world, and trained men with command of this knowledge. These resources were mobilized for military purposes during World War II.

Area studies involve investigation of countries or regions of the world and the bringing together of knowledge representing the contributions of many fields of social science. Foundation support has been given widely to encourage the development of such work.

Among the applications of the knowledge developed from such studies was the supplying of information by social scientists to the Navy during World War II for quick preparation of detailed handbooks on Okinawa and the Japanese

mandated islands covering their geographic, political, social, and cultural characteristics for background for military purposes and later civilian administration.

In the Overseas Intelligence Branch of the Office of War Intelligence, anthropologists coordinated the evaluation of intelligence data on Japanese morale, relating incoming reports to a background of studies of the Japanese people. Contrary to common belief in the invulnerable fighting spirit of the Japanese, the social scientists were able to point out vulnerable places in Japanese military and civilian morale. A report written in May 1945 predicted the early collapse of the whole Japanese war effort both in the armed forces and at home.

Area studies since the war receiving foundation support include those on Russia, the Far East, Southeastern Asia, the Near East, Latin America, and others.

8. *Human relations in industry.*—Businessmen recognize increasingly that the productivity of the industrial workers is more than a matter of size of pay check. Modern practice in industrial management has been redirected in part as a result of studies done by Mayo and associates of the Harvard Business School during the early 1930's at the Hawthorn plant of Western Electric Co. with foundation financing. Initially directed at industrial fatigue, these researchers discovered that productive efficiency depended on the human relations as well as physical conditions and mechanization. In recent years, social sciences have been widely used in business in increasing productivity through improved practices in industrial management.

9. *Public administration.*—The Public Administration Clearing House at Chicago and many of the organizations established there, such as the Council of State Governments and affiliated organizations, the American Municipal Association, and the Municipal Finance Officers Association, have received substantial foundation support. The financing of this work from the early 1930's gave new vigor to many of these organizations. It has resulted in a valuable contribution to strengthening State and local government over the United States by making it more easily possible for officials from these governments to consider their common problems, to look to a staff of experts for advice, to improve their operations, and to unite for common action. One activity of one of these organizations—the Municipal Finance Officers Association—may be mentioned. As a result of its initiative and work, studies were made and reports prepared on governmental accounting, debt administration, local revenue and tax administration, and budget and pension administration. Publications on municipal accounting were prepared for use by municipal officials at a time when there was virtually no guidance available from other sources. Membership in this association grew from about 100 in the early 1930's to 1,000 in recent years. The Council of State Governments has performed major service for State governments through activities so well known to this committee that citing them would be repetitious.

The Hoover Commission in its studies of organization of the executive branch of the Federal Government employed organizations such as the Council of State Governments and experts elsewhere, trained in public administration and its related aspects. The organization of departments of government for more efficient public service, whether in the Federal Government or State and local, owes much to the studies of men trained in public administration and who have served on the staffs of legislative committees and executive agencies. Some of the pioneering work in this field as a science has received support from foundations.

10. *Mental health.*—Research on mental disease has become increasingly concerned with the social and physical factors which produce mental disease and those which may prevent such illness.

Social scientists aided by the foundations, have contributed to new approaches through studies of the family and the community to show what conditions produce healthy personality and what produce disordered behavior. A current problem in this area includes one supported by substantial foundation grants to help determine to what degree social conditions contribute to mental disorder. Another current study financed by foundations includes one at Harvard to explore what preventive mental-health measures are most effective at the community level.

New techniques have been developed through research for quick and economical identification of mentally disturbed individuals. An example is the neuropsychiatric screening adjunct developed for the Army by sociologists and psychologists during World War II. This test was officially adopted for use at all

induction stations beginning in 1944 to try to screen out men mentally unfit for effective Army service.

The urgency of the problems of mental health is partly indicated by the fact that the number of patients in mental hospitals increased from 481,000 in 1940 to 564,000 in 1949. In New York State, the State's mental hospitals and schools are by far the largest single items of operating expense of the State government.

11. Other studies supported by foundations and dealing with problems of current practical importance include investigation of the effects of different kinds of retirement upon older people; an inquiry into community resources available for aged persons; investigation of what happens when American methods and technologies are introduced in underdeveloped agricultural regions. The latter problem requires understanding if we are to avoid doing more harm than good in our efforts to meet threats of aggression by technical and economic aid abroad.

NUMBER OF FOUNDATIONS AIDING SOCIAL SCIENCES AND EXTENT OF THEIR FINANCIAL SUPPORT

Major support of social-science research comes from a relatively small number of foundations. Among them, the most important are: Ford Foundation, Rockefeller Foundation, Carnegie Corp., Twentieth Century Fund, Commonwealth Fund, Wenner Gren Foundation, Grant Foundation, Field Foundation, Millbank Memorial Fund, Russell Sage Foundation, and Maurice and Laura Faulk Foundation. A dozen or so such names would include most of the sources of foundation support for research in the social sciences, while the total number of foundations exceeds 1,000.

There are no reliable figures available on the total amount of financial support of social-science research given by foundations, but it seems clear that it is a very small part of the total expenditures of such organizations.

NEED FOR FOUNDATION SUPPORT FOR SOCIAL-SCIENCE RESEARCH

The history of research has shown that business and government will support applied research of importance to them after its value has been demonstrated. Foundations play a critical role in the development of promising new fields and in continuing to support basic research in established fields. At the same time, the problems of wise investment of funds to promote the public welfare is much more difficult than investment for profit in a business corporation because of the lack of accurate measures of success.

Pioneering investigations are supported by foundation funds which serve as venture capital assisting in developing social sciences and other new fields through supporting scientific research. Similar aid given to the physical and medical sciences over many years has assisted in their development and stimulated broader support by government and business. Underlying the progress of social scientists working with immediate and practical problems has been basic research often having little apparent relation to things of every-day concern, just as in the science of physics, theoretical studies formed the basis for later development of atomic energy. A large portion of social-science products consists of reliable and valid methods for quick and accurate collection and analysis of information needed for policy making and administration in business, education, government, and other organized social functions. Thus, the invention and perfection of the "life table" was essential to the growth of the life-insurance business. Similarly, mathematical statisticians working on theoretical problems have made possible great advances in psychological testing and in the measurement of such seemingly elusive things as morale or employee satisfaction. A good technique developed in the universities tends to find its way into market research, personnel work, and other practical applications. The application is the payoff but we do not get the useful end-items except by support of basic theoretical and developmental research. In giving financial support foundations typically have left complete responsibility for detailed planning, execution, and interpretation of research to the person or institution receiving the funds. In so doing, they have established essential conditions under which free and unbiased scientific inquiry can be pursued.

The foundations have strengthened the teaching of social sciences in colleges and universities by aiding promising men to carry on scientific research which cannot be financed by college funds. This aid serves the double purpose of improving instruction and strengthening the field of science. Through foundation support college teachers have had opportunity to study problems in their field.

Aside from resulting additions to the knowledge of the science, it helps teaching to lose some of its more undesirable ivory tower aspects.

The foundations, through their scholarship and fellowship programs, have done much to increase the supply of trained and competent scientists for colleges, government, and business. Scarcity of competent trained scientists is a severe handicap to the development of the social sciences. While the 1,000 fellowships and scholarships granted through the Social Science Research Council over the last quarter century have been of enormous importance, many more are needed to meet the expanding needs for trained men. Without foundation assistance the situation would be much worse than it now is.

The foundations have been largely responsible through the capital they have made available for the existence of a number of noteworthy institutions and organizations in the fields of the social sciences.

A major beneficiary of foundation grants for economic study has been the National Bureau of Economic Research, which was organized in 1920 by a small group of men—among them Wesley Mitchell, noted economist; Malcolm Rorty, the industrialist; and Edwin F. Gay, first dean of the Harvard Business School—as an agency for the scientific investigation of economic problems. It was the view of these men that the studies of such an agency would establish wide areas of economic fact accepted by students, businessmen, and legislators, and thus reduce or narrow the field of controversy over economic issues and policies.

In studying the workings of our economic organization the National Bureau has concentrated on fundamental and continuing problems rather than the shifting issues of the day. The bureau pursues no single or particular theory in its studies. Instead of asking "what might happen" or pronouncing judgment on "what should happen," the bureau seeks to ascertain "what did happen," "what is happening," "why," and "what do the facts signify". In other words, the bureau has followed the well-tried methods of the older sciences, which have reached their present dependability by substituting on an ever-widening scale facts for opinions and tested generalizations for theoretical conjectures.

This national-research organization, financed largely by foundations, is the most important organization of its kind in the world. In addition to carrying on its basic research on national income, business cycles, physical output, efficiency, and the machinery of credit, the National Bureau has made studies of the labor market, the capital requirements of industry, and the finances of the Federal Government. Over the years the bureau has drawn on hundreds of men and women from universities, departments of government, and business firms for participation in its investigations. The results of these investigations have become imbedded in the work of private and governmental agencies. For example, the bureau's estimates of national income, capital formation, and consumer spending have been taken over and continued by the Department of Commerce; its measures of the physical output and productivity of manufacturers, by the Bureau of the Census; its estimates of residential construction, by the Bureau of Labor Statistics; its estimates of the volume of consumer debt, by the Federal Reserve Board. In these ways, as well as through the media of its research and its publications, the National Bureau has had a wide influence on the training of economists, the teaching of economics, and the programs of other research institutions, notably the universities.

To a very significant degree the National Bureau's accomplishments in the sphere of economic research have been made possible by the foundation grants. Approximately half of the bureau's budget, in some years considerably more than that, has been met from Rockefeller grants. These grants have covered in advance periods varying from 3 to 10 years, and they have carried no restrictions as to the subject or method of investigation. With unrestricted and assured funds at its disposal, the bureau has been able to plan its program over a term of years. It has felt free to pioneer in hitherto unexplored fields and to take whatever time was needed to permit its studies to mature. It has been able to resist the temptation of accepting funds for studies of transient problems. Most important of all, it has been able to plan its program so that successive studies may build upon, add to, and enrich earlier investigations. Without the aid of the Rockefeller Foundation, the National Bureau would have found it much more difficult, and might have found it impossible, to pursue the course along which scientific knowledge cumulates.

Another organization, a major part of the activities of which has been made possible by foundation support, is the Social Science Research Council. This body is a cooperative organization to stimulate and help organize scientific research in the social sciences. It also selects the most promising young men

for scholarships and fellowships using funds provided by foundations. The membership of the council is made up of the professional societies of the social sciences, and its directors are drawn from men in these professions working in universities, business and government.

The Brookings Institution has been aided largely by foundation grants and, as is well known, makes many important research studies.

The Food Research Institute at Stanford University has received many foundation grants and has made major contributions to the study of the economics of food production and distribution.

The various foundations have also financed innumerable projects which have been carried on by some of the most promising research workers on the staffs of colleges and universities. This important phase of foundation activities serves a threefold purpose. It increases the scope of scientific information. It improves the content of social-science instruction in colleges and universities. It helps to train larger numbers of competent men for these fields.

Mr. KEELE. Dr. Bush.

Mr. HAYS. Dr. Bush, the committee welcomes you, sir. We appreciate your presence here, and we will be very happy to hear your presentation.

STATEMENT OF VANNEVAR BUSH, PRESIDENT OF THE CARNEGIE INSTITUTION OF WASHINGTON AND TRUSTEE OF THE CARNEGIE CORP. OF NEW YORK

Dr. BUSH. I am very happy to be with you, Mr. Chairman. Perhaps I ought to identify myself first, Mr. Keele.

Mr. KEELE. Well, I think for the record perhaps it is well. Most of us here know who you are all right, but perhaps we ought to have it for the record.

Dr. BUSH. I am president of the Carnegie Institution of Washington. I am a trustee of the Carnegie Corp. of New York.

And may I make a correction here of a statement which Mr. Hollis made, I am sure inadvertently, for he stated that my institution is a subsidiary of the Carnegie Corp. of New York.

Mr. KEELE. We were informed that you probably would catch that error and remark on it today.

Dr. BUSH. As a matter of fact, the Carnegie organizations are very independent. I sit on the corporation board, but the president of the corporation does not sit on my board, so if there is any subsidiary relationship, it would seem to be in the other direction.

I am also a member of the governing body of three educational institutions—John Hopkins University, Tufts College, Massachusetts Institute of Technology. I am also a regent of Smithsonian Institution and am on one or two commercial boards.

Mr. KEELE. Because of your experience and abilities, we have asked you to come here today, Dr. Bush, to advise us as to your views of the contributions and the impact, if I may use that term again, of the foundations upon the physical sciences or natural sciences.

Dean Myers has been talking about what the foundations have done in the area of social sciences. Yesterday General Simmons, dean of the School of Public Health at Harvard, discussed with us what they had done in the field of medicine and public health.

We have had Dr. Middlebush here telling us something of what they have done in education. Now we would like to hear from you what they have done, if anything, in the field of the physical sciences or natural sciences. I don't want to ask a leading question, of course.

Dr. BUSH. If I were to expound on that completely, of course, I would take much more time than this committee has available. However, I will attempt to pick one or two instances that seem to me to be particularly significant.

Let me take first one that touches on Dean Myers' testimony. Back in 1908 a scientist of Cold Spring Harbor stationed at my institution developed the theory of hybrid corn. What he did was to work out the genetics relationships of that exceedingly complex plant to grow pure lines, to find that on crossing them there was enormous hybrid vigor.

He published all of this, but there was a pause of some 10 years before anything was done about it practically, and then it was picked up industrially, there were in fact founded some rather substantial fortunes on the basis of the development of hybrid corn in this country, some of which you may have heard about.

But hybrid corn came into practice for the benefit of this country, and I understand today that the value of hybrid corn represented by the excess production that was available over what would be available if we were using the old methods amounts to some \$3,000,000,000 a year.

This is a case of where a foundation was well in advance of the art, studying very basic and fundamental things before there was practical realization.

Let me take another example, and it is almost impossible to separate the purely scientific affairs in the field of the natural sciences from their commercial, their political, their social implications.

I think one of the greatest things that was ever done by the foundations in this country was to give us the seeds of a really effective system of medical training with the result that we have in this country a strong system of medicine.

Back in 1908 we had a chaotic system in this country of medical education. There were one hundred fifty or so medical institutions, most of them operated on a commercial basis and for a profit, most of them without any facilities except a few classrooms, most of them with their instructors merely practicing physicians from the region in which they were located. They were training students that they took in almost with no entrance requirements.

As a result of that, we had in this country four or five times as many physicians as there were, for example, in Germany for the same population.

Our medical system of education was in a very sorry state. The Carnegie Foundation for the Advancement of Teaching got Doctor Flexner to study the medical schools, and he published a very thoroughgoing analysis of the difficulties. He pointed out that we had one strong medical school at Johns Hopkins University, and he advocated a system of higher standards and of better support.

Following his publication, there was strong support of medical schools in various places by the foundations, and not only by the foundations, but by individuals, such individuals as Rosenwald, Harkins, Eastman, who made great contributions to medical schools.

We have today a very strong system of medical schools in this country.

You were speaking a moment ago, gentlemen, about whether the foundations in this country had had an influence which trended toward socialism. Without attempting to treat that whole subject, may I point out to you that here was a trend which was in exactly the opposite direction.

We have today in this country a very strong medical system. It is by no means perfect, but it is a system of which we can in general be proud.

In England today we have a socialized system of medicine. We have no need for that in this country, and one of the reasons that we are in the place where we can avoid that expedient is because of the work of the foundations in the early days of medicine.

Now, might I turn to just two more. I won't take too much time. We had experience only a few days ago of an announcement by the Atomic Energy Commission that there was a thermo-nuclear explosion at Eniwetok. In the early thirties there were very few people in this country who felt that the pursuit of the study of nucleonics, of the inner actions of the atom, was of any more than academic interest; that that study could ever be of importance, practically or in terms of national defense.

There were many fine pieces of work done on that subject, but let me single out one.

One of the earliest pioneers was Ernest Lawrence. In the early thirties he built a cyclotron at the University of California. His first support for so doing came from the Research Corporation in New York, a foundation which was founded by Frederick Cotrell, which was then headed by a man of great vision, Howard Poillon, and he gave to Ernest Lawrence his first report at the time when Ernest Lawrence was not widely known, nor was it recognized that he could be such an important leader as he later proved to be.

Other foundations joined him, with the result that this country was far ahead of the rest of the world in that type of equipment when the time came when atomic energy matters became of great and serious importance to the Nation.

But let me turn to just one more, for while we are talking about natural sciences and physical sciences, we are not necessarily talking about practical things entirely. There are other aspects to our national life than the growing of corn effectively, or even medical practice, or even the defense of the Nation by means of mortal weapons.

We have a cultural life in this country, and it is important that we should further that, and the foundations have been in the forefront of that effort.

When I was a boy there was very little basic scientific research in this country. There was very little fundamental science. Today we are moving toward the position where we will lead the world in fundamental research in every scientific field.

Very early in 1928 one of the Rockefeller boards contributed \$6,000,000 to build the Hale telescope, a 200-inch telescope, which stands on Mount Palomar. That was a pioneering venture requiring a great deal of courage. It took many years to build that instrument, and required some of the finest scientific work that could be gathered together in the country to make it a success.

It is today a success, and it is operating well, and we have as a result in this country the finest astronomical equipment in the world by far.

I think that it is important that we should have those things, for looking at the stars has more significance than the mere determination of what keeps the sun hot, with its possible relationship to thermonuclear explosions. It has a deeper and more profound significance.

So, as I look at the work of foundations in the natural sciences, the physical sciences, I could give you more examples where I think they have done some very fine and essential pioneering.

Mr. KEELE. Dr. Bush, in your opinion, is the need of foundation support as great today as it has been in the past?

Dr. BUSH. I have a strong feeling on that, Mr. Keele, which I would like to express with some care. It has been stated many times that since the National Government, the Federal Government, is stepping in to support work in the physical sciences very strongly, there is less need for private funds in that area. I think the exact contrary is true.

Today the Federal Government is putting into research in the physical sciences, in sciences generally, somewhere in the neighborhood of \$350,000,000 a year.

The entire endowment of my institution amounts to only \$55,000,000. Of this great sum, some \$7,000,000 are going into what is called basic research.

Now, definitions of basic research differ widely, and I think if I were to apply my own definition I would find that the amount of funds going by reason of acts of the Federal Government into really fundamental research, is much less than that, but it is a very significant sum.

Nevertheless, as the Federal Government moves into the support of science in this country, as was indeed necessary, and which I advocated, I feel that the need of private funds, with their complete freedom, their ability to pioneer, their ability to take a chance, their opportunity to set standards, is more than it used to be when it acted alone, or substantially alone.

The CHAIRMAN. Do I understand you to say, Dr. Bush, that there is an increasing need, as you understand it, for foundations? In other words, their services are more needed than heretofore, and that the public good demands that their activities increase rather than diminish?

Dr. BUSH. I hope, Mr. Cox, very much, indeed, that it will increase.

The CHAIRMAN. Under our tax system, private colleges and universities will gradually starve to death unless they can find support from the foundations. Of course, this sort of mixing of the Government and religion, the state and religion, you understand, with regard to education, will prevent the Federal Government for a long time from giving governmental support or tendering governmental aid to the private institutions and, therefore, they are virtually compelled to look to the foundations for the lifeblood which they must have if they wish to live.

Now, as opposed to this one benefit in a situation like that existing, if it does exist, the private institutions will find themselves in this helpless position, that is, insofar as resources to carry on are concerned, and having to look to the foundations, they lose to some considerable extent their independence, and gradually become obedient, not to what the foundations might demand, but what they might imagine the foundations would like.

In your experience—and you have had very broad experience, and you are one of the world's great men—but in your experience is there any disposition on the part of the foundations to so condition their grants as might affect the independence of the beneficiary?

Dr. BUSH. If there is, Mr. Cox, I have never seen it, but I would like to answer your question at some length, for I have had a good deal to do with some aspects of this subject.

During the war, when I was Director of the Office of Scientific Research and Development, nearly all or the great part of the scientific effort of this country in the physical sciences was supported by my agency, and was answerable to my agency, under contract.

We had the scientific institutions and the universities linked into the war effort for the development of weapons and for the development of war medicine.

Toward the end of the war, President Roosevelt called on me for a report on the postwar status of scientific research in this country. My office made a rather careful report.

Out of that, and out of other factors, came in the postwar era a very extensive Federal support of science in this country, and thus indirectly support of the universities and of the research institutions, for many of them today are carrying on a considerable portion of their graduate research, research that is carried on in connection with their graduate instruction, on the basis of contracts and grants from the Federal Government.

Now, that was necessary because science in this country had outgrown the scope of the prewar world when it was supported almost entirely by private funds, except for the research, of course, in industry. But academic research and research in the colleges and universities had increased in amount, in scope, to an extent where Federal support was absolutely necessary if we were to maintain in a postwar world our position in science which was essential to our growth and also to our safety.

So that I have advocated strong Federal support in that manner. I have also advocated the creation of the National Science Foundation which, I hope, is going to exert a profound influence upon the relationships between the Government and the universities in this regard. But I did so reluctantly. I did so reluctantly because I do not believe in a Federal Government that does everything that it can possibly do, leaving the remainder for private initiative.

I believe very strongly indeed in the system of private initiative which has made this country great. I believe in the type of philanthropy which has made the foundations possible, and I would much prefer, if it were possible, to see the entire burden carried by private benefactions and by private action, because I believe that the nearer that we come to having the Federal Government grow indefinitely, controlling everything, supporting everything, the nearer we come to a socialistic state, which I would much deplore.

So I am in the position where I believe very strongly that private philanthropy, the action of foundations, is essential to our health, and more essential as Federal support has increased and at the same time, I have believed that Federal support was necessary on a large scale for our national health, and I am very glad that it has been instituted, and might I say just one more word.

There is a great danger when the Federal Government gives \$350 million in contracts to nonprofit institutions in 1 year, danger of the very type that you mentioned a moment ago, that the universities might come under the control of bureaucrats, of agencies of the Federal Government.

I would fear that control far more than I would fear any control by the private foundations, and I think at all hazards we must avoid in this country any system under which our scientific effort is under the control of Government to such an extent that it becomes stifled and routed into mediocre channels.

Since the war the men who have governed our grants, our contracts of the Federal Government, the universities, have acted very wisely indeed, in my opinion. We have avoided to a very considerable extent the hazards that are always present when there is great Government subsidy. I believe they have done an excellent job, and I hope they will keep it up.

MR. KEELE. Dr. Bush, I take it from that that you feel that the foundation assistance will tend to offset to some extent the influence of the Government subsidies, and that it is needed to help offset it?

DR. BUSH. I think it is needed not so much to offset but to supplement, to supplement and to make it possible, for work to go ahead if it has merit, and if it can secure the support of men to science, of understanding, whether or not the Federal Government sees fit to support it.

MR. KEELE. But if there is assistance from the foundations it will tend, will it not, to prevent a tendency to, shall we say, domination by the Government through the great subsidies they are making.

DR. BUSH. Quite right; and when we have both in the field, I think we are in an excellent position.

I have appeared several times since the end of the war informally here in the Congress to discuss the problem of cancer research for which there is, as you know, a great deal of Federal support, and also a great deal of private activity, such as the American Cancer Society.

I have always urged that the Federal Government should not overdo its support in that field for, I think, we have an exceedingly healthy situation at the present time where about half of the burden is being carried by the Federal Government, and the other half of it by private funds.

Under those circumstances, there is not the slightest chance, I feel sure, that a really good lead in cancer research, one that can secure the endorsement of men who understand the field, will go without adequate support.

MR. KEELE. Dr. Bush, it has been suggested here that the advent of the Government into the physical sciences or natural sciences, by their expenditures, and so forth, might have a tendency to crowd the activities of the foundations out of that field and into the social sciences. I wonder if you would tell us whether or not that assumption is correct.

DR. BUSH. I do not think there is anything in it, Mr. Keele. My institution is engaged in the natural sciences; we do work in astronomy, biology, physics, chemistry.

Since the end of the war we are working alongside of a large number of institutions who are receiving support even for their fundamental research directly from the Federal Government. There is not the

slightest difficulty in my institution to find things worth working on. There always are many more things that are worth investigating than can be possibly followed by any single group.

Mr. KEELE. You have got a constantly enlarging horizon, have you not, in the physical sciences alone?

Dr. BUSH. Every time that an important scientific discovery is made, it opens up the area for more research, and usually an important discovery makes way for work of much larger magnitude than was involved in the original discovery.

Mr. KEELE. I am thinking back to a very pleasant talk I had with you 2 weeks ago through our discussion with reference to the possibility of legislation, Federal legislation, or the desirability, I should say, of Federal legislation, which might require foundations to make accurate and complete reporting of their activities. Yesterday Mr. Emerson Andrews of the Russell Sage Foundation or, perhaps, the day before yesterday, read the answer of the Russell Sage Foundation to that portion of our questionnaire dealing with that, and it was suggested in that answer that such reporting would be desirable in order to afford anyone who was interested in learning exactly what the foundations are doing.

Would you give us your views on that subject?

Dr. BUSH. May I take just a moment before I do so to say that I read the statements of Dr. Hollis and Mr. Andrews, and I think this committee is fortunate in having before it as fine two statements of the foundation movement as I have read; they are excellent.

Certainly, when a foundation receives the privilege of tax exemption, it undertakes an obligation to the public. Certainly, any tax-exempt foundation should so conduct its affairs that they will be for the benefit of the general public.

Now, I believe that all foundations that are tax-exempt should operate in a goldfish bowl, that they should operate entirely in the open, that they should make complete reports, financial reports, and reports as to the nature of their grants, and so on.

I believe more than that, that if there are some parts of the foundation movement which are not for the benefit of this public, and for the benefit of the system in which we have great faith, that the mere fact of opening up to the scrutiny of the public and to the scrutiny of the Congress the operations of those institutions would in itself be a great corrective. In fact, I think it might well prove to be such a corrective that no other corrective would be necessary.

I would urge—and let me say that this is already done by every organization that I have contact with in the foundation field or the education field, of course—that if there is further action along that line, that it be taken with some care not to give great burdens unnecessarily.

We have in this country a multiplication of paper work. We have naturally, inevitably, and unavoidably, as life becomes more complicated, more things that business has to fill out, more reports to make, and so on, until it has become quite a burden upon all of us.

I think we, therefore, whenever we consider any action of this sort, should take great care that the regulations that are made are not more burdensome than are necessary for their intended purpose, and I believe that if the foundations are called upon to produce their financial statements, to produce their records of what money they have given

away, and where, that you will have accomplished most of the purposes without embarrassment.

I recognize well enough that this might be embarrassing to some foundations; for example, a foundation that is set up by an individual to continue his personal philanthropies, it would be embarrassing to advertise the amount of money that he has in this foundation, which may cause him to be descended upon by a host of people seeking aid, and it may cause some clerical work, but I think that is an embarrassment which has to be taken for the sake of having an open book generally.

So my recommendation to you gentlemen is that we ought to have the foundations in this country opening their affairs to the extent that those foundations which have taken the leadership, have always opened their affairs.

The CHAIRMAN. It is apparently the disposition of this committee to let the distinguished gentleman pass without undertaking to cross-examine him, thinking that was the polite thing to do.

It is perfectly apparent to me that if I had taken that attitude it would have rendered a great disservice because the little question that I propounded has brought forth a very fine statement from you which was not as a supplement to the original statement, but I think, like the statement made by someone else who appeared here, was that you were a representative of a subsidiary of one of the big Carnegie institutions.

Dr. BUSH. Mr. Cox, I have appeared before so many congressional committees that you certainly should not feel that you would embarrass me by close questions. I will be very glad to answer anything that you have in your mind.

The CHAIRMAN. I think we ought to ask you questions because it gives you an opportunity to rise and shine.

Dr. BUSH. I have got one more point I would like to put in, Mr. Keele, if I may.

Mr. KEELE. Yes, surely.

Dr. BUSH. It will not take but just a moment.

There is another aspect of the foundation movement that I think we are likely to lose sight of when we look so closely at the practical results, and that is an entirely different angle.

We have in this country an altruistic urge; we have it to an extent that, I believe, does not exist anywhere else in the world. It is a fine thing that we have colleges in this country supported by their loyal alumni; it is a fine thing that we have men of great wealth willing to devote their money to public benefit through foundations, and more than that, willing to do so not as an extension of their own ideas as to what is worth while, but by putting it in the hands of representative groups of trustees to utilize their own judgment.

This altruistic urge thus expressed is one of the finest things that there is in this country. It shows itself in the Community Chest, it shows itself by the action of the Congress in coming to the support of the aged, it shows itself in many ways.

I hope, as this committee proceeds, that it will feel that in looking for the abuses, and eliminating them, it also has an opportunity to look at the salutary aspects of this entire movement when it is in good order.

The CHAIRMAN. Let me ask you there, do you not sense that in this thing of reaching a right conclusion as a result of this investigation, that there is a responsibility, first, on the committee, and then on the foundations, that they might easily and properly work together in the interest of cleaning up any bad spots that might exist?

Dr. BUSH. Mr. Cox, I think this inquiry is going to be of great benefit. I think it already has been of great benefit by causing a large number of men to think about this problem deeply, and to try to get it into good order.

I think before you are through you will have accomplished a very fine piece of work if you do no more than to cause many people to think.

May. I say one word on a matter that you asked Mr. Myers which, I think, goes to the heart of the problem? My institution does not give many grants. We used to give quite a few, but with the decrease of income on endowment, we do not give many today.

When we do make a grant, our primary objective is to see that it goes into the hands of a sound scholar. If he is a scholar who will approach his affairs objectively, if he is a man who can analyze, who has the scientific standing and recognition because he has analyzed, well, then he should be given his support, and no control should be exerted over him.

I have that same feeling in regard to grants by foundations, generally. They should be very sure, just as sure as they can be, that where they place support that it goes into the hands of sound objective scholars. That, I know, is a thing that has been given great thought and given great care in the foundations with which I have been associated.

It is an exceedingly difficult thing to do at all times. There are bound to be slips, and those slips, I think, should be promptly corrected, for we do not want support in this country of any man who is approaching a problem except on the basis of the facts and the logic of the case. We do not want any man who is approaching a problem with a preconceived notion of what he might find out. That is not a great problem in science, for in science we always have tests as to whether there is a sound scholar before us.

It is much more difficult in the social sciences, but in the social sciences, even alone, it is impossible to avoid occasionally making an error. I think it is far better to have wide support than to be too limited.

Mr. FORAND. Dr. Bush, does the Carnegie Foundation make its grant direct to the individual concerned or to some group or how is the money passed on?

Dr. BUSH. We make very few grants today, but when we make a grant, we make it for a specific purpose, and for the support of the work of a specific individual, for our grants and all in the scientific field, and they are made to supplement the work that we are doing in our own laboratories. For administrative purposes we make the grant to the man's institution, but under the conditions that it will be used to support his work.

Mr. FORAND. They keep an account, of course, that you can look at any time?

Dr. BUSH. Oh, yes.

Mr. HAYS. Do you have any other questions?

The CHAIRMAN. No.

Mr. HAYS. Mr. Goodwin?

Mr. GOODWIN. No questions.

Mr. HAYS. Dr. Bush, how much do we know about the type of research being done by the Communist countries?

Dr. BUSH. Not so much as I wish we did, Mr. Hays. There is not any doubt that Russia has enormously expanded its scientific training and its scientific effort. What we do not know is the caliber of that effort. Of course, we can judge somewhat by some results.

Russia produced an atomic bomb at the lower limit of the time estimates that had been given as necessary for that purpose.

Russia has produced jet aircraft that are excellent, and that means that Russia, in its engineering and, to a certain extent in its applied science, is certainly today able to produce competent men and keep them at work and in an effective fashion, otherwise they could not produce those results.

Now, whether Russia, similarly, can break new ground, that I do not yet know. I know that they are making an enormous effort, that they have enormous regard for the physical sciences, that they are putting great emphasis upon it; but as to the caliber of the work, we have no way to judge.

Mr. HAYS. I suppose that there is nothing like the foundation system in Russia?

Dr. BUSH. No. There is about as thorough a regimentation of science as you could possibly have, and that is one of the things that we have to lean on.

In Russia, if one has a new genetic theory, and it does not accord with the ideas of Mr. Lysenko, who happened to have the nod of the proper commissars, then he had better suppress his ideas for if he brings them into the open he will be promptly reviled and ridiculed and removed from his position. He must follow the party line even in science. He must, in fact, subordinate all of his judgments on facts to what is thought in the Kremlin.

Now, great science never prospers under those circumstances. Great science only prospers in freedom, in the competition in the free and open market, if you will, between the ideas of independent men where the judgment is the judgment of their peers and the judgment of time.

When there is an artificial repression of ideas in the field of science we do not any longer have science.

I am very happy personally that Russia has that system, and I hope it is going to be a great impediment to them.

Mr. HAYS. Do any of the captive countries have or did they have, before they went behind the iron curtain, anything like our foundation system of philanthropy?

Dr. BUSH. I do not know of any such system in any of the iron-curtain countries; no.

Mr. HAYS. I read somewhere the opinion that one reason for the downfall or the collapse of the Nazi system was the government following exactly the same policy, that Hitler had bottled up research when at a certain crucial stage of the war it might have given them an advantage.

Dr. BUSH. There is not any doubt that one of the greatest mistakes that Hitler ever made was when he took control of the German universities, and when, by one perfectly terrible act, he removed all of the Jewish scientists from their efforts. He thereby made a sacrifice in the practical matter of winning the war, which was beyond estimate, and its results were shown in many ways.

This country, I am proud to say, ran rings around the Nazi hierarchy in the development of new weapons. Now, that was applied research. It was not fundamental research. This country has also taken its place at the head of fundamental science where Germany once held that position, and Hitler destroyed it, and he destroyed one of the greatest assets of the state, and the result was that we had a radar that was better than theirs; we had proximity fuses which turned the tide of war at the Battle of the Bulge, and he did not, and we had an atomic bomb when his group were miles behind us in the race.

One thing, I think, that we can learn from that is this: Entirely apart from its cultural aspects, it is very dangerous indeed for a country to neglect any aspect of fundamental science. The fundamental science of 25 years ago in the field of atomic energy was regarded as entirely academic, and it proved to be of enormous importance.

No man can say what fundamental things will be of great importance in the future. We need to be general in our support of fundamental science wherever it is found, and that applies, gentlemen, not only in the field that I am talking about, but in science, generally.

I have confined my remarks to the physical sciences because I know something about them, but don't think that I have anything but sympathy for the good work in the social sciences. One exemplification of that is that I am a member of the board of trustees of the Carnegie Corp., and our principal effort is in the social sciences.

Mr. KEELE. Dr. Bush, I am sure you have had occasion to observe what other countries are doing, particularly the countries of Western Europe. Is there any comparable organization or group of organizations; I should say, is there any group of organizations which are comparable in the countries of Western Europe to our great foundations in this country?

Dr. BUSH. Certainly not to any similar extent; and even in Great Britain they do not have this movement on the basis that we have.

As you know, Britain supports its universities directly out of tax funds. It does so through a committee on university grants, and it has done so with great skill, in my opinion. It has done so very well, so that in one sense they have gone much further than we have for our Federal Government support of universities is only indirect.

But the foundation movement, in my opinion, is primarily a manifestation of the point of view of the people of this country; it has grown out of our industrial life and our way of doing things quite naturally.

Mr. KEELE. How is the function, then, that is discharged by the foundations in this country supplied in those Western European countries, or is it supplied?

Dr. BUSH. Well, I fear that today it is not supplied to the extent that it should be.

Let me turn back a bit. When I was younger, some of the finest fundamental science was being done in France, in Germany, in Eng-

land. This country was not in the forefront in most fields of fundamental science. We have always in this country been very good indeed at the applications of science, with gadgetry, making things work. That is in our blood in this country.

We have not similarly had an aptitude for fundamental research and fundamental science. We are developing it, we are supporting it, but many years ago we leaned upon Europe for our fundamental science, and fundamental science there was carried out in their great universities.

Those great universities still go on, they are still carrying on fine work, and we still should have good relations, I hope, with them as they proceed, and good interchange throughout the free world.

But there is not there the same situation that we have here where the direct work of those universities can be supplemented by the foundations, not to nearly the same extent.

Britain has not only its fund for direct support of the universities but it also has a fund for scientific research, which is in some ways comparable to our foundation, but it is tax money that was used through a general committee.

Mr. KEELE. To that extent, I should think it gives us an advantage, then, to the extent that we have foundation support which they lack.

Dr. BUSH. I think it gives us a very important advantage.

Mr. KEELE. And they account to some extent for the rapid increase and progress we have made.

Dr. BUSH. I think so. I believe that we are today obviously making progress in applied science, in the engineering aspects, but I think we are today making excellent progress in every field of fundamental science, and that is due to several things. Before the last war it was due to the existence of the foundations more than to any other single element.

Today it is due to many things: First, Federal support; second, the foundations, and, more than anything else, a growing realization among the American people that it is important that it should be on a sound basis.

Mr. KEELE. In other words, the initial impetus was given by the foundations. Now the Government and other agencies are picking up.

Dr. BUSH. The initial impetus was given by the foundations. The enormous impetus given during the war when atomic fission, long an academic subject, became of great practical importance, convinced many people that it was worth while in a very practical sense to be utterly alert in fundamental science.

The CHAIRMAN. Doctor Bush, I will not ask you a question unless it is agreeable to you, but I am wondering if Heidelberg still stands at the head of the class of the great universities of the world or if as a result of the war or misfortune it has lost that place?

Dr. BUSH. Its position was utterly destroyed by Hitler. I can tell you a little story about Heidelberg if the committee wants to take a moment.

The CHAIRMAN. I have three grandchildren that I have registered there. I have not been able to get one of them off, but I am still insistent.

Dr. BUSH. Toward the end of the war when our troops were moved into Heidelberg, there was with those troops a team of scientists that was intent on finding out where the Germans stood in regard to the

development of the atomic bomb. We were very anxious to know the last facts at that moment. So there was a combined military and scientific team that moved in, and the scientists at Heidelberg, who were still there, were seized, and they were put in internment in England, and they thought they were being seized because the United States needed them so badly for its atomic-energy development.

When they were not used at all, they wondered that the Americans were so obtuse that they did not understand how they could be of great use to them, and then the atomic bomb went off out in the Pacific and the news was reported to them, and they would not believe it.

Once they were finally forced to believe it, they said that the Americans had probably dropped an entire atomic pile.

Well, inasmuch as an atomic pile weighed a thousand tons or more, that was a little out of line, but the point is that those scientists, once among the foremost scientists of the world, had not only lost the atomic race, but they had been so far behind that they just could not conceive that anyone could have carried it through to success.

The CHAIRMAN. That is all.

Mr. HAYS. Do you have anything further?

Mr. KEELE. I have nothing further.

Mr. HAYS. Dr. Bush, the committee wants to thank you for your very interesting and extremely valuable contribution. We are indebted to you, sir, for what you have told us.

I believe that concludes the witnesses for today.

Dr. BUSH. Mr. Chairman, I have been very happy to be with you. I think you are doing a very important work, and if I can be of any aid, I will be happy to do so.

Mr. HAYS. We will call on you, sir.

The committee will be in recess until 10 o'clock tomorrow.

(Whereupon, at 3:15 p. m., the committee took a recess until tomorrow, Friday, November 21, 1952, at 10 a. m.)

