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THE HELSINKI FORUM AND EAST-WEST SCIENTIFIC EXCHANGE

JOINT HEARING
BEFORE THE
SUBCOMMITTEE ON
SCIENCE, RESEARCH AND TECHNOLOGY
OF THE
COMMITTEE ON
SCIENCE AND TECHNOLOGY
AND THE
SUBCOMMITTEE ON INTERNATIONAL SECURITY
AND SCIENTIFIC AFFAIRS
OF THE
COMMITTEE ON FOREIGN AFFAIRS
HOUSE OF REPRESENTATIVES
AND THE
COMMISSION ON SECURITY AND
COOPERATION IN EUROPE
NINETY-SIXTH CONGRESS
SECOND SESSION

JANUARY 31, 1980

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(IV)

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THE HELSINKI FORUM AND EAST-WEST SCIENTIFIC EXCHANGE

THURSDAY, JANUARY 31, 1980

HOUSE OF REPRESENTATIVES, COMMITTEE ON SCIENCE AND
TECHNOLOGY, SUBCOMMITTEE ON SCIENCE, RESEARCH
AND TECHNOLOGY, COMMITTEE ON FOREIGN AFFAIRS, SUB-
COMMITTEE ON INTERNATIONAL SECURITY AND SCIENCE
AFFAIRS, COMMISSION ON SECURITY AND COOPERATION IN
EUROPE,

Washington, D.C.

The subcommittee met, pursuant to notice, at 2:15 p.m., in room 2318, Rayburn House Office Building, Hon. George E. Brown, Jr., chairman of the Subcommittee on Science, Research and Technology, presiding.

Mr. BROWN. The hearing will come to order.

This is a joint hearing on the Helsinki Forum. Since the time that it was originally scheduled, the hearing has become much more timely. I have a statement which I would like to read for the record, and I will ask other members up here, and the members of the Commission, to also present short statements.

The hearings this afternoon are sponsored by the Committee on Science and Technology as well as the Committee on Foreign Affairs and the Commission on Security and Cooperation in Europe. We will have additional members, the distinguished chairman of the Foreign Affairs Committee and the distinguished chairman of the Commission on Security and Cooperation in Europe and a subcommittee chairman on foreign affairs here later. But in the interest of time and in order to get some of the preliminaries out of the way, I will start the hearing and present my own statement at this time.

It is a great pleasure to welcome our distinguished witnesses today to review the forthcoming scientific forum in Hamburg, Germany, under the auspices of the 1975 Helsinki Accords on Security and Cooperation in Europe. I would particularly like to thank my colleagues, Chairman Zablocki and Chairman Fascell for their help in getting this hearing organized and for joining me in sponsoring this important examination of U.S. international science policy. I also want to commend my colleague, Dick Ottinger, the chairman of our Energy Development and Applications Subcommittee, for his initial suggestion that this hearing should be held.

The Scientific Forum is not an official representation of the U.S. Government, but is a meeting of scientists from the countries who

are signatories to the Helsinki Final Act. As such, they are discussing the present research and future prospects of specific scientific fields such as the natural sciences, health and medicine, environmental and social sciences. But even more important, the meeting will, and I believe should, emphasize the process of scientific exchange and factors that affect the fruitfulness of joint international scientific efforts. Such problems as the freedom of communication, access to colleagues, as well as their physical security and protection from political persecution are topics which are of great concern to us. I hope that the scientist delegates will see fit to discuss these very important topics. I hope that we shall have the opportunity to hear back from our scientists on their conclusions both as to the scientific substance and science and human rights policy results of this forum.

The multilateral Scientific Forum assumes even greater importance now, for I believe we are at a watershed in international scientific and technological exchange. The forum may unfortunately be one of the few remaining vehicles to lay the ground for future cooperation. This is a time when mankind's need for international development of resources, food, and environmental problems as well as social and political problems such as disarmament have never been greater. However, the climate for fruitful cooperative activity has perhaps seldom been poorer. There is no doubt about it. The invasion of Afghanistan, in direct violation of principles of the Helsinki accords themselves, as well as the exiling and dishonoring of Andrei Sakharov, have rendered scientific cooperation with the Soviet Union extremely difficult. The attempt by the Soviet Government to silence Andrei Sakharov frankly is an event which I find abhorrent to the whole notion of freedom of inquiry and speech. Furthermore, it is in direct violation of many provisions in the Helsinki Final Act.

Our only course is to respond very firmly. For that reason, the day before yesterday, together with my colleague, Cap Hollenbeck, I introduced House Joint Resolution 487. It condemns the Soviet actions and calls for a 1-year halt on the official and nonessential travel by Soviet scientists to this country. It also recommends that Federal agencies as well as professional societies, scientists, and engineers be requested to defer official and nonessential travel to the Soviet Union for 1 year unless otherwise dictated by extraordinary circumstances or individual conscience. Any decision to defer travel to the Soviet Union must, I emphasize, be a matter of individual conscience, for it should not be the policy of the U.S. Government to dictate any ban on communication or to interfere with scientific communication as the Soviet Union has on many occasions. But, I do believe that business cannot go on as usual. Scientists and engineers must seriously examine the wisdom of official scientific exchange at this time. I welcome comments from witnesses here on this resolution and possible improvements.

Similar to our resolution, I note with interest that the Federation of American Scientists has put forward a proposal for scientists to consider a pledge, which they could adopt as individuals, proclaiming their decision to refuse to participate in official bilateral science exchanges with the U.S.S.R. until Sakharov is returned from internal exile. I hope that scientific societies and associations will help us to

make known these initiatives to their members and urge them to inform us of their members' decisions so that we can learn how the scientific community wishes to respond to Sakharov's exile and official disgrace by the Soviet Government.

I would make two final points. First, it is the Soviet Union and not all Eastern European countries who have invaded Afghanistan and who have exiled Andrei Sakharov. It would be a great mistake in my mind if, in reaction to Soviet policies, we were to cut off exchanges with other Eastern European nations whose policies may be very different. A return to the view of a monolithic Soviet bloc, such as we held during the cold war, would be a great mistake. It would inhibit fruitful collaboration with scientists in such liberal Communist nations as Poland.

Second, the moratorium is recommended for only 1 year. It is very important to constantly look for attempts by the Soviet Union to bring about better relationships. We must not lock the gates permanently. For this reason, it will be up to the Soviet Union to show, by their actions, a genuine desire to return to more cooperative and fruitful relationships on all fronts between our two nations. That, as I see it, is the essential question of this hearing. It is the point I have tried to make in this resolution on science exchange. A start may be made back toward better relationships, some steps we cannot foresee yet. Then we would have every reason to broaden our contacts and to expand scientific and technological cooperation with the Soviet Union. I sincerely hope we will not keep going along the ominous path where we appear to be headed today.

In looking for ways to improve relationships, we must also bear one principle in mind which I hope we learned in the long and agonizing Vietnam war. We must always look for face-saving ways for U.S.S.R. to retreat from Afghanistan and to release Dr. Sakharov without humiliation. If we do not bear this fundamental principle of human relations in mind, then we will compound the difficulties which we face in the search for peaceful scientific cooperation at Hamburg and beyond.

I would now like to call on the ranking minority member of the Subcommittee on Science, Research and Technology, Cap Hollenbeck, for any comments he wishes to make.

MR. HOLLENBECK. Thank you, Mr. Chairman.

I commend you and Chairman Zablocki, Chairman Fascell and our colleague, Dick Ottinger for organizing these hearings. At this crucial time in East-West relations, it represents the Congress first attempt to look at where we are going in East-West scientific exchange.

I join my colleague, George Brown, in emphasizing that the scientific forum to be held in Hamburg, Germany, has become all the more important in light of recent events. It is a multilateral forum designed under the auspices of agreements to assure cooperation and security in Europe.

There, we can perhaps bring pressure to bear individually upon those nations who violate the very essence of scientific and technological cooperation; namely, Mr. Chairman, by the arrest and exile of Andrei Sakharov. Andrei Sakharov is not only a great scientist, he has also spoken out long and hard on the human rights of all men and

scientists in particular. He spoke strongly for the tremendous need to pursue every avenue toward more stable and peaceful relationships between the United States and the Soviet Union. His arrest is a direct snub at all attempts to reduce the level of conflict between the East and West. I strongly support the resolution which we introduced with your leadership 2 days ago. That resolution expresses our great displeasure with the actions of the Soviet Government but leaves it up to the Soviets, through genuine attempts to resolve our differences as to whether scientific or technological cooperation can proceed on a broader basis in the future.

Mr. Chairman, you noted that the scientific forum deals not only with the substance of science, but also with the process of scientific exchange and the condition of science and scientists in individual nations. As such, I believe the examination of human rights of scientists should be central to the discussions occurring at the forum. The human rights of scientists have long concerned me. It is not restricted, nor should it be, to just a few well-known names such as Dr. Sakharov.

Human rights violations have occurred to many others and throughout the world. With your permission, as an example of the broader reach of this problem, I would like to introduce into the record a letter we recently wrote to Roman A. Rudenko, Procurator General of the U.S.S.R. This letter concerns the worsening condition of Yuri Orlov and Sergei Kovalev. This letter follows by not quite a year a letter we wrote to the President of the Soviet Academy of Science concerning Orlov urging his release.

Our recent letter which also calls for the release of Andrei Sakharov was signed by eight of our subcommittee members and comes in response to the letters from many of America's distinguished scientists, including 11 Nobel Laureates. They have written us over the past months urging us to communicate our concerns to officials of the Soviet Union with regard to Orlov and other imprisoned scientists. At this point, I am submitting for the record copies of our letter, the letters of American scientists, as well as the letter we wrote last year.

[The material mentioned above follows:]

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January 25, 1980

Mr. Roman A. Rudenko
 Procurator General of the USSR
 Pushkinskaya ulitsa 15a
 Moscow K-19, RSFSR, USSR.

Dear Mr. Rudenko:

On May 24, 1979, we wrote Academician Anatoly Alexandrov, President of your National Academy of Sciences, concerning the imprisonment of Yuri Orlov and Sergei Kovalev. A copy of our letter is enclosed.

Since that time we have read Madame Orlov's testimony that her husband's health and physical condition have deteriorated seriously. More recently it has been reported that Yuri Orlov has been placed in a PKT punishment block. His diet has been greatly reduced and he is in solitary confinement when not working at hard labor.

As a result of Madame Orlov's testimony and the more recent reports of his further confinement, many of our nation's most distinguished scientists have written us expressing their great concern for Orlov as well as for the condition of Anatoly Shcharansky and Sergei Kovalev. Among the signers of these letters, which we enclosed along with a copy of Madame Orlov's testimony, you will no doubt recognize the names of eleven Nobel Laureates and many other world renowned scientists. Some scientific groups such as the Association for Computing Machinery and the 2,400 scientists for Orlov and Shcharansky have gone further. They have chosen, at considerable professional sacrifice, to suspend scientific contact with the Soviet scientists pending the release of their imprisoned colleagues.

We believe that their actions reflect the conclusion which we stated last year to Academician Alexandrov and which we emphasize once again:

"Communication, while vital to the long-run health of science, is not beneficial per se but only if it involves exchange between equals and only if it strengthens research opportunities beyond the immediate exchanges. Acquiescence in the violation of scientists' human rights is unacceptable as a price of scientific exchange."

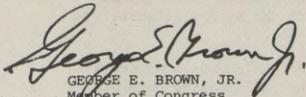
In transmitting these letters we wish to point out that none were in any way solicited by the U.S. government but reflect the conscience of individual scientists and professional groups acting on their own.

As we noted last year and the United States Congress increasingly recognizes the need to include human rights as an essential component of national and international science and technology policy. Conversely, as President Carter stated in his March 19, 1979 message to Congress on "Science and Technology", it is our expectation that "these (science exchange) programs (with the Soviet Union) support and remain compatible with our overall political relationship". Specifically, we recall that in the 1975 Helsinki Accords and associated agreements, the United States and other Western nations recognized the legitimacy of the de facto governments and boundaries in Eastern Europe in exchange for recognition by the Soviet Union and its allies of provisions pertaining to the respect for human rights, as well as cooperation in humanitarian and other fields (including science). We assume that the Soviet Union and other signatories will still honor these reciprocal agreements.

As we write we have just received news of the arrest and internal exile of Andrei Sakharov and his wife, Elena Bonner, to the city of Gorky. As Members of the Committee on Science and Technology, which oversees our nation's science policy and which has responsibility for funding the National Science Foundation, we are concerned for the Sakharovs and for the effect of their arrest on East-West scientific cooperation. Our feelings are shared by many American scientists, some of whom have signed the letters enclosed here concerning Orlov, Shcharansky and Kovalev.

We are also concerned because Andrei Sakharov has been a symbol for those few courageous men and women, in the Soviet Union and in the West, who have spoken out, even at the height of the cold wars, on the need for peace and the elimination of possible nuclear holocaust. Today we join these lonely voices of moderation in searching for a more rational and more humane resolution of the differences now facing our two nations. As a step, which we believe would be of great significance, we appeal to you to do everything in your power to assure the safety and timely release of Yuri Orlov, Anatoly Shcharansky, Sergei Kovalev as well as the Sakharovs. We look forward to receiving your reassurance concerning their situation as the first of many steps required by leaders in both of our countries to reverse the ominous trends occurring today.

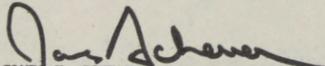
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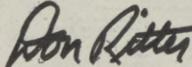


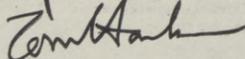
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Member of Congress

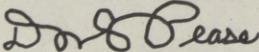


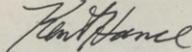
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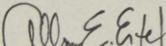

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Enclosures

cc: Dr. Frank Press
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January 29, 1980

His Excellency Anatoliy F. Dobrynin
Ambassador E. and P.
1125 16th Street, N.W.
Washington, D. C. 20036

Dear Mr. Ambassador:

Enclosed for your information is a copy of the letter which we today sent to Roman A. Rudenko, Procurator General of the USSR on behalf of Yuri Orlov, Sergei Kovalev, Anatoly Shcharansky and Andrei Sakharov.

We would greatly appreciate it if you would communicate our concerns together with those of American scientists to your colleagues and appropriate officials.

Sincerely,

GEORGE E. BROWN, JR.
Chairman
Subcommittee on Science,
Research and Technology

HAROLD C. HOLLENBECK
Ranking Minority Member
Subcommittee on Science,
Research and Technology

Enclosure

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COMMITTEE ON SCIENCE AND TECHNOLOGY
 U.S. HOUSE OF REPRESENTATIVES
 SUITE 2121 RAYBURN HOUSE OFFICE BUILDING
 WASHINGTON, D.C. 20515

January 29, 1980

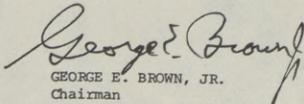
Academician Anatoly P. Alexandrov
 President
 USSR Academy of Sciences
 14 Leninsky Prospect
 Moscow B-71, RSFSR, USSR.

Dear Academician Alexandrov:

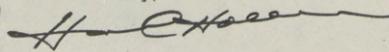
Last May we wrote you concerning the condition of Yuri Orlov and Sergei Kovalev. Since that time many American scientists have written us to express their continued concern for Academician Orlov and other imprisoned Soviet scientists. In response we have today written Mr. Roman A. Rudenko, Procurator General of the USSR to appeal for the release of your colleagues. For your information, we enclose a copy of our letter to Mr. Rudenko as well as the letters we have received from American scientists.

In closing we ask you to do everything in your power to assure for the safety and timely release of Yuri Orlov, Anatoly Shcharansky, Sergei Kovalev and Andrei Sakharov. These men and other scientists have been exiled or imprisoned in direct contradiction to provisions of the Helsinki Final Act; continuance of these violations threatens permanently future US/USSR cooperative research and scientific exchange.

Sincerely,



GEORGE E. BROWN, JR.
 Chairman
 Subcommittee on Science,
 Research and Technology


 HAROLD C. HOLLENBECK
 Ranking Minority Member
 Subcommittee on Science,
 Research and Technology

Enclosure

HARVARD UNIVERSITY

DEPARTMENT OF PHYSICS

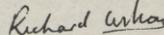
LYMAN LABORATORY OF PHYSICS
CAMBRIDGE, MASSACHUSETTS 02138NOV 5 1979
5 November 1979

The Honorable George E. Brown
Chairman, Subcommittee on Science Research
and Technology
U.S. House of Representatives
U.S. Congress
Washington, DC 20515

Dear Representative Brown,

On May 24 you wrote to Academician Anatoly Alexandrov with an appeal to release Dr. Yuri Fedorovich Orlov from prison in the Urals. We now have a recent letter from Orlov's wife, Irina, of which I enclose a copy and a translation. Orlov is getting weaker and I write to ask if you could renew your appeal to save Orlov's life.

Yours sincerely,



Richard Wilson

RW:dr
Enclosures

P.S. Enclosed are a copy of the letter sent to Rep. Hollenbeck with signatures of others at Harvard along with a typed list of signatories and titles. You should consider those people as signatories of this letter as well.

HARVARD UNIVERSITY

DEPARTMENT OF PHYSICS

LYMAN LABORATORY OF PHYSICS
CAMBRIDGE, MASSACHUSETTS 02138Bill
Z.

5 November 1979

The Honorable H. Hollenbeck
Ranking Minority Member
Subcommittee on Science Research
and Technology
U.S. House of Representatives
U.S. Congress
Washington, DC 20515

Dear Representative Hollenbeck,

On May 24 you wrote to Academician Anatoly Alexandrov with an appeal to release Dr. Yuri Fedorovich Orlov from prison in the Urals. We now have a recent letter from Orlov's wife, Irina, of which I enclose a copy and a translation. Orlov is getting weaker and I write to ask if you could renew your appeal to save Orlov's life.

Yours sincerely,

Richard Wilson

Richard Wilson

RW:dr
Enclosures

Roy Hauken	C. Papaliolini	Norman Ramsey	Prou Nathl.
Man Byers	W. J. Skoepol	Steve Weinberg	Paul Bamberg
John K. Lutz	E. J. Echter	Karl Stromer	L. Yee
James Aronson	M. Tinkham	Samuel J. Lane	Burt Rockwell
Lee S. Brown	S. L. Shostak	Ray F. Schmitz	Paul M. Winter
Howard A. Dwyer	W. T. Hottel	Kevin Cahill	Mark David R. Conner
Maria E. Maschack	William J. Teague	Paul Horgowitz	Robert V. Kline
P. H. Frampton	Matthew D. Hoodman	Edward M. Riefler	FRACouch Inc.
b. G. Lebl	Stephen T. Huxford	A. Sherony	
Edward Witten	David R. Nelson		

List of signatories and titles:

Prof. Richard Wilson, Professor of Physics
 Prof. Roy Glauber, Professor of Physics
 Dr. Mina Ebers, Research Associate in Physics
 Dr. John Losecco, Research Associate in Physics
 Dr. Anne-Marie Lutz, Research Associate in Physics
 Dr. Per Salomonson, Visiting Scholar in Physics
 Prof. Howard Georgi, Associate Professor in Physics
 Dr. Marie Machacek, Lecturer in Physics
 Dr. P.H. Frampton, Visiting Scholar in Physics
 Dr. L. Girandello, Research Fellow in the Division of Applied Physics
 Dr. Edward Witten, Society of Fellows
 Prof. C. Papaliolios, Professor of Physics
 Prof. W.J. Skocpol, Associate Professor of Physics
 Prof. E. Eichten, Assistant Professor of Physics
 Prof. M. Tinkham, Professor of Physics
 Prof. S. Glashow, Professor of Physics, Nobel Laureate in Physics
 Prof. W.T. Vetterling, Assistant Professor of Physics
 Prof. William Tanenbaum, Assistant Professor of Physics
 Dr. Matthew S. Goodman, Research Associate in Physics
 Prof. Stephen Lundeen, Assistant Professor of Physics
 Prof. David Nelson, Associate Professor of Physics
 Prof. Norman Ramsey, Higgins Professor of Physics
 Prof. Steven Weinberg, Professor of Physics, Nobel Laureate in Physics
 Prof. Karl Strauch, Professor of Physics, Chairman, Physics Dept., Harvard Univ.
 Prof. Kenneth Lane, Assistant Professor of Physics
 Prof. Roy Schwitters, Professor of Physics
 Dr. Kevin Cahill, Research Associate in Physics
 Prof. Paul Horowitz, Professor of Physics
 Prof. Edward Purcell, Professor of Physics, Nobel Laureate in Physics
 Dr. A. Aharony, Research Associate in Physics
 Dr. Pran Nath, Visiting Scholar in Physics
 Dr. Paul Bamberg, Director of Science Instruction Development and Lecturer in Physics
 Dr. L. Yu, Visiting Scholar in Physics
 Prof. B. Halperin, Professor of Physics
 Dean Paul Martin, Professor of Physics and Dean, Division of Applied Sciences
 Dr. Mark David Rosen, Post-Doctoral Research Fellow in Physics
 Dr. Robert V. Kline, Fellow in Interdisciplinary Programs in Health
 Dr. E.A.C. Crouch, Research Associate in Physics



Lawrence Berkeley Laboratory

University of California
Berkeley, California 94720
Telephone 415/843-2740

December 13, 1979

The Honorable George E. Brown
U.S. House of Representatives
2342 Rayburn House Office Building
Washington, D.C. 20515

Dear Representative Brown:

We would like to express our appreciation to you and seven other members of the House Subcommittee on Science, Research and Technology for the very fine letter you wrote to the President of the Soviet Academy of Sciences, Academician Anatoly P. Alexandrov, on 24 May 1979 the anniversary of the sentencing of Soviet dissident scientist Yuri Orlov. In your letter, you described most eloquently those concerns we also share, over human rights violations of some of our colleagues in the Soviet Union, as well as the concerns about aspects of scientific exchange which need to be rectified. We hope your action will have a salutary impact.

We have recently learned that two of our imprisoned Soviet colleagues, Yuri Orlov and Anatoly Shcharansky, have become seriously ill as a result of their treatment in prison. We view this development with great alarm. We appeal to you to please write once again, to the appropriate Soviet authorities, asking them to intercede on behalf of Orlov and Shcharansky to gain their release from prison, for humanitarian reasons if nothing else. Should either of these two die in prison, not only would it be a great human tragedy, but it would also have dire consequences for US-USSR scientific relations! Short of this disaster, even the present harsh treatment of our two colleagues is already affecting the attitudes of many American scientists regarding scientific exchanges with the Soviet Union. The situation will get worse as the condition of Orlov and Shcharansky deteriorates.

We hope you will convey these concerns to the Soviet authorities. Thank you again for your efforts on behalf of our colleagues.

Sincerely yours,

Owen Chamberlain
Professor of Physics
and Nobel Laureate
University of California

Charles H. Townes
Professor of Physics
and Nobel Laureate
University of California

Donald A. Glaser
Professor of Physics and Molecular Biology
and Nobel Laureate
University of California



DEPARTMENT OF PHYSICS
CLARK HALL

Cornell University

ITHACA, NEW YORK 14853

November 8, 1979

The Honorable George E. Brown
U.S. House of Representatives
2342 Rayburn House Office Building
Washington, D.C. 20515

Dear Congressman Brown:

We are aware of the letter that you and other members of the Subcommittee on Science, Research, and Technology sent to Academician Alexandrov on May 24, 1979, concerning the status of U.S.-Soviet scientific relations. In our opinion it is very important that Soviet authorities at the highest levels come to recognize that their brutal treatment of certain of our Soviet colleagues is deeply resented by a very significant portion of the U.S. scientific community, and that this has done considerable damage to U.S.-Soviet scientific relations. For that reason we view your past efforts to make the Soviet government aware of this situation as being exceptionally valuable.

Our purpose in writing you now is to draw your attention to a letter from Irina Orlov, dated August 27, 1979, describing her visit of August 21 to her husband Yuri Orlov at Perm Camp No. 37. In brief, Mrs. Orlov found her husband to be suffering grievously from malnutrition and overwork; she expresses grave fears for his long-term health, and even for his life.

We enclose Mrs. Orlov's original letter, together with an English translation, as well as a related document signed by the Moscow Notary Public. For your convenience, we also enclose a synopsis of Mrs. Orlov's letter, and supplementary documentation from a publication by Amnesty International.

These disturbing developments in the Orlov case are becoming known in our scientific community, in part by word of mouth, and in part by articles in the popular and scientific press. Inevitably, this will do further harm to U.S.-Soviet scientific relations. Should Mrs. Orlov's worst fears be realized, the damage to these relations would be very profound.

We would suggest that Mrs. Orlov's communication provides a very natural opening for a new letter to Academician Alexandrov from you and your colleagues. You are in a unique position to discretely warn the Soviet government that a continuation of the policies epitomized by the Orlov case are not only dangerous, but do not serve the self-interest of the Soviet Union.

Yours truly,

Hans A. Bethe

Hans A. Bethe
John Wendell Anderson Professor of
Physics Emeritus

James A. Kruhansl

James A. Kruhansl
Professor of Physics

Edwin E. Salpeter

Edwin E. Salpeter
James Gilbert White Distinguished
Professor in the Physical Sciences

Enclosures

STANFORD UNIVERSITY
STANFORD, CALIFORNIA 94305

DEPARTMENT OF CHEMISTRY

NOV 8 1979

November 8, 1979

The Honorable Harold C. Hollenbeck
Ranking Minority Member
Subcommittee on Science, Research and Technology
Congress of the United States
House of Representatives
Washington, D. C. 20515

Dear Sir:

We have been privileged to receive a copy of the letter that you and other members of the Subcommittee on Science, Research and Technology sent on the twenty-fourth of May of this year to Academician Anatoly P. Alexandrov, President of the Soviet Academy of Sciences, expressing grave concern for the fates of Yuri Orlov, Anatoly Shcharansky, Sergei Kovalev and others now serving harsh prison sentences for their advocacy of human rights. We warmly support the stand you have taken and commend the forcefulness with which you have championed the case for their release.

On August twenty-first Irina Orlov was permitted a brief visit with her husband, Yuri Orlov, at Perm Camp No. 37 where he is imprisoned. According to the account in her letter of August twenty-seventh, copy of which you have received from Professor Kurt Gottfried and others at Cornell University, his condition is alarming.

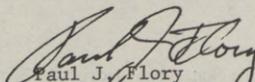
We are sure that you and your colleagues of the House Committee on Science and Technology share our deep concern for Professor Orlov and his family, and for others including Shcharansky and Kovalev. Hence we take the liberty of requesting your further efforts to secure their release from the sufferings inflicted in Soviet prisons.

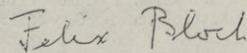
It is our specific suggestion that you and your fellow members of the Subcommittee on Science, Research and Technology again write to President Alexandrov stressing the urgency of the

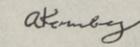
release of these so-called "dissidents." It may be pointed out that American scientists are unwilling to cooperate with their Soviet colleagues in an atmosphere of oppression and persecution.

Your continued efforts to this end will be warmly received by advocates of human rights at large and by the growing numbers of American scientists who share our concerns for our fellow scientists in the Soviet Union.

Respectfully,


Paul J. Flory
Nobel Laureate in Chemistry


Felix Bloch
Nobel Laureate in Physics


Arthur Kornberg
Nobel Laureate in Physiology
or Medicine

STANFORD UNIVERSITY

X ACCELERATOR CENTER

Mail Address
 SLAC, P. O. Box 4349
 Stanford, California 94305

DEC 10 6 1979
 December 1979

*refer - SRT
 for response*

The Honorable George E. Brown
 U.S. House of Representatives
 2342 Rayburn House Office Building
 Washington, D. C. 20515

Dear Congressman Brown:

We are aware of the letter that you and other members of the Subcommittee on Science, Research, and Technology sent to Academician Alexandrov on May 24, 1979, concerning the status of U.S.-Soviet Scientific relations. We believe it is very important for the Soviet authorities to come to recognize that their repressive treatment of some of our Soviet scientific colleagues is deeply resented by members of the U.S. scientific community. If this repressive treatment continues, we worry not only about the health and well-being of our Soviet colleagues, but also about even more long-lasting damage to U.S.-Soviet scientific relations that has already occurred. For these reasons we view your past efforts to make the Soviet government aware of this situation as being exceptionally valuable.

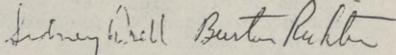
Our purpose in writing to you and Congressman Hollenbeck now is to draw your attention to a letter from Irina Orlov, dated August 27, 1979, describing her visit of August 21, to her husband Yuri Orlov at Perm Camp No. 37. In particular, she expresses grave fears for his long-term health, and even for his life, in view of his suffering from malnutrition and overwork.

We enclose Mrs. Orlov's original letter, together with an English translation, as well as a related document signed by a Moscow Notary Public. For your convenience, we also enclose a synopsis of Mr. Orlov's letter, and supplementary documentation from a publication by Amnesty International.

These disturbing developments in the Orlov case are becoming known in our scientific community in part by word of mouth and in part by articles in the popular and scientific press. Inevitably, this will do further harm to U.S.-Soviet scientific relations. Should Mrs. Orlov's worst fears be realized, the damage to these relations would be very profound.

We would suggest that Mrs. Orlov's communication provides a very natural opening for a new letter to Academician Alexandrov from you and your colleagues. You are in a unique position to discretely warn Soviet leaders that a continuation of the policies epitomized by the Orlov case are dangerous, repugnant, and do not serve the best interests of the Soviet Union.

Sincerely yours,



Sidney Drell Burton Richter
Professors
Stanford Linear Accelerator
Center

encl.

cc: Allen E. Ertel
Don Fuqua
Kent Hance
Tom Harkin
Donald J. Pease
Donald L. Ritter
James H. Scheuer
John W. Wydler

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
DEPARTMENT OF PHYSICS
CAMBRIDGE, MASSACHUSETTS 02139

January 2, 1980

The Honorable George E. Brown
U.S. House of Representatives
2342 Rayburn House Office Building
Washington, D.C. 20515

Dear Congressman Brown:

JAN 7 1979

We have just received the statement of August 21, 1979, by Irina Orlov describing her meeting with her husband and our colleague, Yuri Orlov, and detailing the harsh treatment which he is receiving in Perm Camp No. 37 and her fears for his health.

We have seen and strongly applaud the eloquent letter of May 24, 1979 sent by you and your colleagues to Academician Alexandrov. It is our feeling now, particularly in view of the very bad physical condition of Yuri Orlov, that another try at persuading the Soviet authorities to release this remarkable man should be made, and we urge you to write again. Perhaps it might be useful on this occasion to write directly to government officials instead of to Alexandrov.

Thank you for your past efforts and for anything you will be able to do in the future. We are sending an identical letter to Congressman Hollenbeck and copies to the Sub-Committee members as well as to Congressmen Fuqua and Wydler.

Yours sincerely,

Herman Feshbach
Herman Feshbach
Cecil and Ida Green Professor of Physics
and Head, Department of Physics

Francis E. Low
Francis E. Low
Karl Taylor Compton Professor of Physics
and Director, Laboratory for Nuclear
Science

Samuel C. C. Ting
Samuel C. C. Ting
Thomas Dudley Cabot Institute Professor

Victor F. Weisskopf
Victor F. Weisskopf
Institute Professor Emeritus



Lawrence Berkeley Laboratory

University of California
Berkeley, California 94720
Telephone 415/843-2740

December 13, 1979

The Honorable George E. Brown
U.S. House of Representatives
2342 Rayburn House Office Building
Washington, D.C. 20515

68 1570

Dear Representative Brown:

We would like to express our appreciation to you and seven other members of the House Subcommittee on Science, Research and Technology for the very fine letter you wrote to the President of the Soviet Academy of Sciences, Academician Anatoly P. Alexandrov, on 24 May 1979 the anniversary of the sentencing of Soviet dissident scientist Yuri Orlov. In your letter, you described most eloquently those concerns we also share, over human rights violations of some of our colleagues in the Soviet Union, as well as the concerns about aspects of scientific exchange which need to be rectified. We hope your action will have a salutary impact.

We have recently learned that two of our imprisoned Soviet colleagues, Yuri Orlov and Anatoly Shcharansky, have become seriously ill as a result of their treatment in prison. We view this development with great alarm. We appeal to you to please write once again, to the appropriate Soviet authorities, asking them to intercede on behalf of Orlov and Shcharansky to gain their release from prison, for humanitarian reasons if nothing else. Should either of these two die in prison, not only would it be a great human tragedy, but it would also have dire consequences for US-USSR scientific relations! Short of this disaster, even the present harsh treatment of our two colleagues is already affecting the attitudes of many American scientists regarding scientific exchanges with the Soviet Union. The situation will get worse as the condition of Orlov and Shcharansky deteriorates.

We hope you will convey these concerns to the Soviet authorities. Thank you again for your efforts on behalf of our colleagues.

Sincerely yours,

Owen Chamberlain
Professor of Physics
and Nobel Laureate
University of California

Charles H. Townes
Professor of Physics
and Nobel Laureate
University of California

Donald A. Glaser
Professor of Physics and Molecular Biology
and Nobel Laureate
University of California

HAROLD C. HOLLENBECK
5TH DISTRICT, NEW JERSEY

COMMITTEES:
BANKING, FINANCE AND
URBAN AFFAIRS

SUBCOMMITTEES:
DOMESTIC MONETARY POLICY
INTERNATIONAL DEVELOPMENT
INTERNATIONAL TRADE
SCIENCE AND TECHNOLOGY

SUBCOMMITTEES:
SPACE SCIENCE AND APPLICATIONS
SCIENCE, RESEARCH AND TECHNOLOGY
FOSSIL AND NUCLEAR ENERGY

Congress of the United States
House of Representatives
Washington, D.C. 20515

May 24, 1979

WASHINGTON OFFICE:
1221 LONGWORTH HOUSE OFFICE BUILDING
WASHINGTON, D.C. 20515
(202) 225-5081

DISTRICT OFFICES:
1550 LEMONE AVENUE
FORT LEE, NEW JERSEY 07024
947-6588

47 ORIENT WAY
RUTHERFORD, NEW JERSEY 07070

30TH STREET POST OFFICE
UNION CITY, NEW JERSEY 07087

Academician Anatoly P. Alexandrov
President
U.S.S.R. Academy of Sciences
14 Leninsky Prospekt
Moscow, B-71, RSFSR
U.S.S.R.

Dear Academician Alexandrov:

Just under a year ago, on June 27, 1978, we wrote Academician Gerasimov, Director of the Institute of Geography, expressing our concern over the imprisonment of Yuri Orlov. Now, on this anniversary of Orlov's sentencing, we are writing to express again our concern for the deterioration of Soviet-American scientific relations during this past year. This deterioration has come about as a result of continued tension and harassment of dissident and refusenik scientists. The latter group including Alexander Lerner, Naum Meiman, and Irina Brailovsky, no longer have research positions in the Soviet Union, but have been denied permission to emigrate to the West where jobs have been offered. This situation is a grave concern to American scientists.

As Members of the Committee on Science and Technology of the United States House of Representatives which oversees the Nation's science policy and which has responsibilities for funding the National Science Foundation, we are in a unique position to survey current developments in science and technology. From our perspective, the following issues appear of growing importance to the scientific community as a result of a new critical appraisal of the purpose and conditions of scientific exchange.

First and foremost, it is important to recognize that communication, while vital to the long run health of science, is not beneficial per se, but only if it involves exchange between equals and only if it strengthens research opportunities beyond the immediate exchanges. Acquiescence in the violation of scientists' human rights is unacceptable as a price of scientific exchange. Scientists have reacted to this budding

professional ethic in different ways. Some, such as the 2400-member Scientists for Orlov and Schransky, have publicly chosen to boycott Soviet science exchanges. Others have decided to employ exchanges and conferences as a vehicle for maintaining contact with and public awareness of oppressed colleagues. Both approaches share the recognition by scientists that individual and collective action is required in the face of human rights violations.

Second, American scientists are growing reluctant to accept substitutes, usually of low calibre, for scientists who have been invited to participate in conferences. Many conferences no longer accept invited papers to be read by other than the author of work being reported. In the past, many world-respected Soviet scientists have not been allowed to travel to the West, their appearance has been "cancelled" at the last minute, or they have not been allowed to participate in Soviet conferences attended by Westerners. As mentioned earlier, scientific exchange, to be viable scientifically, must be an exchange between equals and must include access to all scientists, as desired by the participants, in both our nations.

Third, the strength of American scientists' protest over their colleagues' condition throughout the world, but particularly in the Soviet Union and Argentina, is attested by the fact that it has grown out of the personal and professional conscience of individual scientists and individual associations such as the Association of Computing Machinery. None of these actions have been stimulated or suggested by the American Government.

Times are changing, however, and the Congress is slowly becoming aware of the need to include human rights as an essential component of national and international science and technology policy. Thus, in February of this year as part of its budget authorization, the Committee on Science and Technology directed the National Science Foundation to report before January 1, 1980, on "procedures and actions which might be appropriate for the Foundation to insure that its activities will enhance the civil, political and cultural rights of scientists at home and abroad." A copy of that Committee direction is enclosed for your information. As a result of these developments, we believe that the time is coming when Congress will undertake a deeper assessment of its support of and the conditions for scientific exchange and international scientific cooperation. Indeed, the Subcommittee on Science, Research and Technology has just conducted hearings on the bilateral science agreement with the People's Republic of China. At those hearings, concern was expressed that the United States should avoid the pitfalls.

and restraints which have sadly characterized exchanges with the Soviet Union on occasion in the past.

We sincerely hope that the coming years will see great improvement in the conditions for scientific exchange and in the position of scientists of all political and professional opinions in our nations. We urge you, as President of the Soviet Academy of Sciences, to do everything in your power to communicate to your scientific and political colleagues the depth of concern for the human rights among individual American scientists.

In expressing our concern, we wish to emphasize our belief that concern for human rights should in no way be allowed to detract from and be held ransom to the success of peace negotiations. We are glad that the United States and the Soviet Union have successfully concluded the recent negotiations on the SALT-II treaty and we hope an acceptable ratification will follow in the near future. Long term scientific and technological solutions to man's needs will require peace for their attainment; but the maintenance of peace in turn requires the rational and equitable satisfaction of man's political, economic and cultural rights with the essential help of science and technology.

As a personal appeal, to conclude we urge that you use your influence to seek the release of Yuri Orlov and Sergei Kovalev. The latter, arrested in 1974, we understand is seriously ill. Their release would be a welcome sign of sincere interest by the Soviet Academy and its members in maintaining contact with American colleagues at a time when scientific relations are under great strain.

Sincerely,

George E. Brown Jr.

GEORGE E. BROWN
Chairman, Subcommittee
on Science, Research and
Technology

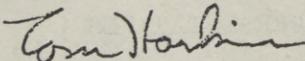
HAROLD C. HOLLENBECK
Ranking Minority Member
Subcommittee on Science,
Research and Technology

James H. Scheuer

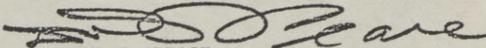
JAMES H. SCHEUER
Member, Subcommittee on
Science, Research and
Technology

Don Ritter

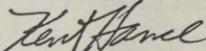
DONALD L. RITTER
Member, Subcommittee on
Science, Research and
Technology



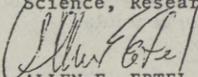
TOM HARKIN
Member, Subcommittee on
Science, Research and Technology



DONALD J. PEASE
Member, Subcommittee on
Science, Research and Technology



KENT HANCE
Member, Subcommittee on
Science, Research and Technology



ALLEN E. ERTEL
Member, Subcommittee on
Science, Research and Technology

Enclosures

cc: Dr. Frank Press
Director, Office of Science and Technology Policy

Dr. Richard Atkinson
Director, National Science Foundation

AUTHORIZING APPROPRIATIONS TO THE NATIONAL
 SCIENCE FOUNDATION

MARCH 21, 1979.—Committed to the Committee of the Whole House on the
 State of the Union and ordered to be printed

Mr. FUQUA, from the Committee on Science and Technology,
 submitted the following

REPORT

together with

DISSENTING VIEWS

[To accompany H.R. 2729]

[Including cost estimate and comparison of the Congressional Budget Office]

The Committee on Science and Technology, to which was referred the bill (H.R. 2729) to authorize appropriations for activities of the National Science Foundation, and for other purposes, having considered the same, reports favorably thereon with amendments, and recommends that the bill do pass.

The amendments are as follows:

(i) On page 2 of the bill on line 9 strike "\$69,900,000" and insert in lieu thereof "\$70,900,000" and on line 19 strike the period and insert in lieu thereof ", and \$2,800,000 is authorized for the program of Science and Technology to Aid the Handicapped."

(ii) On page 4 of the bill on line 14, strike "81-807" and insert in lieu thereof "81-50A."

PURPOSE OF THE BILL

The purpose of the bill is to authorize appropriations to the National Science Foundation for fiscal year 1980 in the amount of \$1,007.5 million out of money in the Treasury not otherwise appropriated and \$6 million in foreign currencies which the Treasury Department determines to be excess to the normal requirements of the United States, as follows. The funds authorized in the amendment are included in the table.

The Foundation appears not to have addressed the Committee's concern that NSF is not able to make small grants efficiently and does not have policies for small grants, that was expressed in the same section of the fiscal year 1979 report. The Foundation should undertake such study.

The Foundation is bound by law to keep the Committee "fully and currently informed with respect to all of the activities of the National Science Foundation." The Committee has tried to impress on the Foundation that keeping the Committee informed about plans for "Big Science" projects is essential. The Foundation, nevertheless, did not inform the Committee about plans to build a second phase heavy ion accelerator at Michigan State University. The plans were first disclosed to the Committee in the Foundation's budget request to Congress. The Committee's understanding is that construction of the accelerator will be funded and managed by the Department of Energy and that NSF will assume funding and management responsibility for operation of the accelerator once it is built. Pending the receipt of further information from the Foundation, these arrangements seem reasonable.

RIGHTS OF SCIENTISTS

Committee view

The Committee notes with great concern infringement on the civil, political, and cultural rights of scientists and technologists in many nations; the Committee also recognizes that many scientists and technologists as well as several scientific societies have expressed their personal concern for the civil, political and cultural situation of colleagues in those nations where such infringements occur. The Committee encourages the National Science Foundation and the National Science Board to determine that their activities, including the support of scientists, the international exchange of scientists, and the operation of scientific facilities, will enhance and not detract from the civil, political and cultural rights of scientists at home and abroad. Therefore, the Committee requests that the Foundation notify it in advance of granting approval for the construction or major modification of any scientific facility supported by NSF and located in a foreign nation. The Committee requests that the Foundation report before January 1, 1980, on those procedures and actions which might be appropriate for the Foundation to insure that its activities will enhance the civil, political and cultural rights of scientists.

Discussion

Recent years have seen a growing recognition by individual scientists and professional scientific associations, that they cannot remain indifferent to the human rights of colleagues throughout the world, including the United States. The protest occasioned by the trials and imprisonment of Orlov and Shcharansky in the Soviet Union has lately come to include a boycott of Soviet scientific exchanges by 2,400 U.S. scientists including many Nobel laureates.

Human rights violations of scientists are not however, restricted to the Soviet Union but appear in many countries, including Uruguay, Argentina, Indonesia and Czechoslovakia. They take many forms: for example, censorship of research, restrictions on travel, immigration, and access to peers (the latter affects both U.S. and foreign scientists), physical harassment, loss of employment, imprisonment

and torture. The last is often more efficient as a result of advances in modern science and medicine.

Protests and concern have taken many forms, from boycotts, to inquiries and visits to endangered colleagues, as well as investigative missions by officials of professional societies. Concern for the human rights of both scientists and non-scientists is also a fundamental tenet of U.S. foreign policy. In public, the President expressed great concern over the Orlov and Shcharansky trials. Dr. Frank Press, the President's science advisor, related in testimony how he privately expressed his concerns, on human rights, as well as the concerns of the President and the concerns of several members of the Committee, to the highest levels of the Soviet government on his recent visit to Moscow.

Of broader interest to the Committee is the relationship between the occurrence of human rights violations, specifically of civil, political and cultural rights defined by covenants of the United Nations and of the Organization of American States, and the health of science. In some nations, such as Argentina, whole disciplines, for example psychology, have been banned from academic institutions. Basic and applied science require the freedom to investigate any subject without regard to where the answers may lead. On both an individual and disciplinary level censorship and fear of political and economic retribution for unpopular ideas can foreclose vital steps to future understanding of basic science and may impede the solution of global problems in energy, population, and environmental integrity.

The activities of the National Science Foundation potentially affect the civil, political and cultural rights concerns of scientists at home and abroad. The Committee recognizes the human rights concerns of the general public, of individual scientists, of professional scientific associations and of United States foreign policy objectives. The Committee also recognizes the relationship between the health of science and the maintenance of civil, political and cultural rights. Therefore, the Committee encourages the Foundation to determine that its activities will enhance and not detract from these rights of scientists in all nations.

It should be noted that the Foundation's organic Act specifically charges it to:

1. "Initiate and support . . . programs to strengthen scientific research potential" Sec. 3(a) (1); and
2. "Foster the interchange of scientific information among scientists in the United States and foreign countries" Sec 3 (a) (3).

To carry out these charges:

"The Board and the Director shall recommend the encourage the pursuit of national policies for the promotion of basic research and education in the sciences," Sec. 3 (d).

Furthermore, the Foundation's authority to make contracts with foreign individuals and foreign organizations or to cooperate in international scientific activities is only to be exercised in a manner consistent with the foreign policy objectives of the United States (Sec. (13) (b) (1)). Therefore the Committee is requesting that the Foundation notify it in advance of granting approval for construction or

major modification of any scientific facilities supported by NSF and located in a foreign nation. The Committee makes this request so that it can consider whether such construction or modification is consistent with the human rights objectives of U.S. foreign policy.

The Committee is also requesting that the Foundation report to it on or before January 1, 1980, on those procedures and actions which might be appropriate and which presumably would be undertaken to insure that the Foundation's activities will enhance the civil, political, and cultural rights of scientists at home and abroad. This report should consider but not limit itself to a discussion of steps being undertaken to insure that scientific exchanges with China are free of the restraints, censorship, and individual harassment which have often characterized scientific exchanges between the United States and U.S.S.R.

"SCIENCE" AND "ENGINEERING"

Committee view

The support of engineering sciences is an integral responsibility of the National Science Foundation as defined in the Organic Act (Section 3(a)(1)). Throughout the record of these authorization proceedings, including the report of the Committee, the term "science" and its derivatives (scientist, scientific, etc.) are understood to subsume, as appropriate, any or all of the science categories, including engineering science, for which the Foundation has general authority.

Discussion

Sec. 3(a)(1) of the National Science Foundation Act of 1950 authorizes and directs the Foundation

"to initiate and support basic scientific research and programs to strengthen scientific research potential and science education programs at all levels in the mathematical, physical, medical, biological, engineering social and other sciences,"

While the Foundation's name might appear to exclude support of engineering research; it is clear from the charter that the intent of Congress is to support engineering science as a discipline of equal scientific merit to any other field of science such as physics, or biology. It is, however, equally clear from the language of the Act that the Congress did not intend the Foundation to initiate or support specific engineering works but rather research on general principles of engineering. The Foundation in its budget appears to recognize this distinction.

The Committee wishes to clarify here that, although discussion of NSF's authorization usually speaks of supporting "basic science" and "science education", the support of engineering science is one of the mandates of the Foundation. The Committee emphasizes, however, that the status of engineering science as a discipline equal to other scientific disciplines, in no way implies any *a priori* formula for funding engineering science relative to other fields.

COMPARATIVE RISK AND TECHNOLOGY EVALUATION

Committee view

The Committee encourages the Foundation to sponsor systematic research to improve the methods for evaluation of long-term compara-

HAROLD C. HOLLENBECK
9TH DISTRICT, NEW JERSEY

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SCIENCE, RESEARCH AND TECHNOLOGY
FOSSIL AND NUCLEAR ENERGY

Congress of the United States
House of Representatives
Washington, D.C. 20515

June 27, 1978

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Academician I.P. Gerasimov, Director
Institute of Geography
U.S.S.R. Academy of Sciences
c/o Dr. James Hays
Lamont-Doherty Geological Observatory
Pallisades, New York 10964

Dear Academician Gerasimov:

We write you, as leader of the Soviet delegation, on the occasion of this Reciprocal Soviet/American Conference on Climates of the Pleistocene and Holocene. We want to express to you, to your government, and to the world our concern over human rights violations by authorities in the Soviet Union, and for the effects these violations may have on the progress of scientific research and upon the exchange of ideas between our two nations.

Great concern is aroused by the sentencing of Uri F. Orlov to seven years in prison and five years' internal exile and by the forthcoming "treason" trial of Dr. Anatoly Schransky. Tragically, however, the list is far longer. It includes Vladimir Slepak and Dr. Ida Nudel -- just this week sentenced to five years' exile -- and the mathematicians, Drs. Irena Brailovsky and Naum Meiman, who have been dismissed from their academic positions, refused access to scientific libraries and forbidden to attend official scientific conferences. Drs. Brailovsky and Meiman were seeking permission to emigrate from the Soviet Union to Israel -- the right of emigration being established under the Universal Declaration of Human Rights. The others, including Drs. Orlov and Schransky mentioned above, as well as Alexander Ginsberg, were monitoring compliance by Soviet authorities with human rights provisions in the 1975 Helsinki Accords to which your government is a party.

Members of the American scientific community, including 15 Nobel Prize winners, have expressed their concern over the Orlov trial to Academician Alexandrov, President of the Academy of Sciences of the U.S.S.R. We understand that several participants in this Conference have expressed their private concern to you. Other groups have gone further and have cancelled participation in individual conferences. One scientist to do so, Dr. Robert Marshak, has been a leader in

re-opening scientific exchanges between the Soviet Union and the United States since 1956. More broadly, out of sympathy for their colleague Anatoly Schransky, the 35,000 member Association of Computing Machinery, the largest computer sciences association in the United States, has decided not to "cooperate with or cosponsor meetings in" the Soviet Union "until the climate of intellectual freedom improves."

As two Members of the United States House of Representatives who have direct responsibility for obtaining authorization of appropriations for the National Science Foundation, we are deeply concerned that continued violations of human rights by Soviet authorities will jeopardize the future of scientific exchanges such as this Conference on ancient climates. We also concur with the judgement of Dr. Philip Handler, President of the National Academy of Sciences who said, "we have repeatedly informed Soviet authorities that the issue of human rights threatens to erode the willingness of American scientists to cooperate with their Soviet counterparts -- and our predictions are being borne out."

More important, however, than the provocation of protests and boycotts, human rights violations by political authorities may have grave practical consequences. Over the next generation, mankind faces unprecedented problems as economic desires and technological capabilities trespass environmental boundaries. For example, the "greenhouse effect" in our atmosphere resulting from the use of coal and oil and from tropical land clearing may well cause worldwide climate changes over the next 50 to 100 years. These changes could seriously impair many nations' food production. Only if the imaginations of the world's scientists and engineers are completely uninhibited and available will we gain an understanding of the complex environmental and social systems which human beings are now affecting.

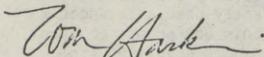
When gained, that understanding must be translated into action! That action, to be successful, requires the right to openly discuss and criticize the policies of one's government, publicly and privately without fear of reprisal. For example, apparently unrelated ancient climates which were studied and discussed at this Conference may provide our strongest clues to the specific climate changes resulting from the "greenhouse effect." If the results of these studies are found to warrant curtailing the use of coal and/or oil, it is the obligation and right of the scientific community to openly criticize or disagree with the policies of any government which does not take into account those results.

Every nation of the world has an interest in scientific matters, for problems of science and technology are universal and the failure of any nation to recognize and respond to criticism and disagreement by its scientists may have an effect on the rest of the world. In this regard, we wish to also emphasize that the persecution and harassment of dissident scientists and engineers, be it in Argentina, Uruguay, Indonesia, the Soviet Union, or any nation whatsoever, is of grave concern to us as well.

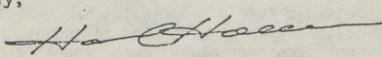
Perhaps most important, because it distinguishes humans from all other living beings, science shares with poetry, art and religion that fundamental search to understand where we come from, who we are, and where we are going. Almost more than a right, that search is our humanity. It is in this search to create our identity that all fields cross. When anyone is harassed or persecuted for scientific ideas or artistic expression or for religious beliefs, all are diminished and we end as little more than Diogenes' plucked chicken, the cynic's version of Plato's man. In that cynicism, we as nations will be unable to choose our unique solution to these world problems from among the technical alternatives.

In conclusion, we wish to express our belief in the importance of the work of this Reciprocal Soviet/American Conference on Climates of the Pleisocene and Holocene. We believe that its results could prove of great practical benefit in understanding our effect on climate change and we commend the Academy of Sciences of the U.S.S.R. as well as the National Science Foundation for their support of academic participation in this conference. It is our desire to see this vital exchange continue which requires us to express our concerns to you. We ask that you convey our feelings to your colleagues and to appropriate authorities in the Soviet Union. We urge the Soviet scientific community to do everything in its power to bring to an end the harassment and persecution of dissident scientists and engineers by Soviet authorities.

Sincerely,



Tom Harkin, M.C.
Member, Committee on
Science and Technology



Harold C. Hollenbeck, M.C.
Member, Committee on
Science and Technology

cc: His Excellency Anatoliy F. Dobrynin
Dr. Richard C. Atkinson
Mr. Douglas Costle

MY MEETING WITH MY HUSBAND, DR. YURI F. ORLOV, ON AUGUST 21, 1979

Irina Orlov

I had the opportunity to meet with my husband, Yuri Orlov, on August 21. Instead of the prescribed three days, the camp administration (Perm Camp No. 37) allowed me and my son Alexander to spend only one day. The deputy chief in charge of the camp explained the reason to me: "Your husband is not fulfilling his work quotas at the lathe. Even our invalids fulfill their quotas. But Orlov refuses to fulfill his." I said that this was not true, that my husband was not fulfilling his quotas because of poor health.

We were thoroughly searched before the meeting. They inspected our personal things and the food items which we brought. I refused to take off my clothes.

During the meeting my husband looked extremely emaciated and thin. This was his first opportunity in a year to talk about his life in the camp, since he had been forbidden to speak about it in his letters and at the general meeting held in December, and his meeting with his lawyer in June of that year had been cancelled by the KGB.

My husband said that because he worked two shifts on the lathe his sleep had become completely disrupted. His age and the aftereffects of a severe head concussion which he got in an automobile accident were beginning to show.* He is overworked, his head and spine ache, and sometimes he cannot move his right leg and arm as a result of physically loading heavy objects onto the lathe.

According to my husband, the camp quota for working at the lathe is fulfilled only by healthy young people used to physical work. The quotas are 10% higher than in normal camps. For not fulfilling his quotas my husband is deprived of the opportunity to buy two to four rubles' worth of additional products at the camp store every month. The camp administration told him that in the future he will be punished for not fulfilling his quota. Specifically, this means spending time in the punishment cell.

During his stay in the camp my husband has gone on three hunger strikes. On October 30, the Day of Political Prisoners in the Soviet Union, he declared a hunger strike and released a statement which contained two demands:

- 1) Freedom for all the arrested members of the Helsinki Watch Groups.
- 2) The return of his scientific notes, written by him in Lefortovo Prison during the pre-trial investigation.

Later, at the meeting in December, my husband told me and his sons that he had received a reply from the Procurator's Office with regard to the

* See enclosed certificate concerning this accident of June 17, 1966, signed by the Moscow Notary Public.

confiscated notes which stated that they were "... confiscated in compliance with regulations."

My husband went on a hunger strike for three days on November 20 and for five days on December 10 for that same reason.

He told me that he had been twice placed in the punishment cell. On February 5 his scientific notes and writings were confiscated. He went on strike and did not go to work. At first he was given a reprimand; afterwards he was told that he was being deprived of a meeting with me and his sons in June. Thereupon, he was placed in the punishment cell for five days. He could not sleep there because of the cold and had to rub his bare plank-bed to keep warm. He was given food every other day. He was released from the punishment cell on February 19, and that time his scientific notes were returned.

After his stay in the punishment cell my husband barely fulfilled half his work quota at the lathe. His head ached to the point of his being nauseous. The workshop foreman transferred him to miscellaneous work, which is done partly out of doors and which does not require fulfilling a quota, but the KGB demanded that he return to the lathe. My husband did not obey the order, and was again placed in the punishment cell for five days.

The camp administration does everything it can to prevent my husband from doing his own work, even in his free time. Moreover, he is forbidden to conduct scientific correspondence. In reply to his statement to the Procurator's Office with regard to the confiscation of his scientific notes, my husband was told that "... a convict can have with him his personal correspondence and five books, but nothing else, including scientific notes."

The camp administration tries to isolate my husband by confiscating many letters without letting him know that they have been confiscated. Out of the numerous letters I wrote him every month, he is given only one. Letters and telegrams from abroad do not reach him at all. The administration makes him rewrite his letters to me, so that he can write only of the "weather". He is forbidden to write from whom he has received letters.

My husband complained about the poor medical service. For a year he had been asking the doctor for permission at least to lie down after work. For that it was necessary to convene a medical commission, which decided to allow my husband to rest for two hours after work.

Specialized medical treatment at the camp is poor. My husband needs to have his teeth fixed; they are decaying, and sometimes his whole jaw aches. In the course of a year he wrote complaints to the Procurator's Office. Finally, after a year, he got a reply from the Medicinal Administration of the MVD (Ministry of Internal Affairs): "They came to you. You were treated." This was simply an impudent lie, because no one had come.

Many prisoners cannot get their eyes treated for years; they wait years to be prescribed glasses. The prisoner Utenkov, demanding to be treated (he is suffering from progressively worsening cataracts), did not go to work. For that he was placed in the punishment cell. And only after going on a hunger strike was he sent to the hospital. However, since there was no specialist in the hospital, Utenkov was sent back to camp.

Knowing of Sergei Kovalev's* difficult situation and of his struggle with the camp administration, my husband is speaking out in his defense. He is asking scholars to work for the release of Sergei Kovalev.

"The sacrifices Sergei Kovalev is making do not correspond to the concessions made by the administration. I fear that he may ruin his health permanently," he said.

My husband spoke of the difficult situation of Merab Kostava, a member of the Georgian Helsinki Watch Group. Merab Kostava was placed in the PKT (camp prison) in May for not fulfilling his quota and for other violations. His diary was confiscated. Kostava went on a hunger strike for a month and was later fed intravenously. Apparently, they are going to keep him in the prison until October. Kostava requested that he not be confused with Gamsakhurdia. As the head of the Moscow Helsinki Watch Group, my husband is defending Kostava who is subject to severe pressure on the part of the administration.

I have memorized the words which my husband wanted to say on May 12, the first anniversary of the formation of the Moscow Helsinki Watch Group:

"On the occasion of the group's first anniversary.

"I believe that our sacrifices were not in vain!

"In the many years of its existence the democratic movement has contributed to a change in the leadership's phraseology, a change which will have an influence on succeeding generations; to the ideological emancipation of the intelligentsia; and to the growing sympathy of workers for the propagation of political and civic freedoms.

"That is why I view the future optimistically."

My husband asked me to convey that he is for the signing of SALT 2, insofar as signing that document is decidedly important for all people. The problem of peace concerns all and should come first. Coming closer together is better than confrontation.

I ask that you take notice of my husband's difficult situation in the camp.

I am very fearful for my husband's health.

The authorities are gradually killing him.

27 августа 1978 года

August 27, 1979

Ирина Валитова - Орлов

Irina Valitova Orlov

* Russian biologist, active in the Lithuanian dissident movement, who was arrested on December 28, 1974 and sentenced for "anti-Soviet agitation and propaganda" to 7 years' imprisonment and 3 years' exile.

"STATEMENT OF DECEMBER 10. TO THE SOVIET LEADERS.*

"1) By suppressing independent humanitarian information you are destroying the seeds of healthy political development of our country. Among the discontented there are those who are impatient, and you are provoking them to seek other paths. Your policies are shortsighted.

"2) Your striving to increase your influence in the world would be wise were it based on the ideas of democratic socialism. But you are aiding the development of totalitarian systems. This is a risky game that is dangerous for our country and for the world, because it is difficult to reconcile various totalitarian ambitions. There can be no peace which is built on principles of ideological intolerance and the suppression of information.

"I ask you to at least give some thought to these matters."

* At my husband's request, I am transmitting the statement he prepared for December 10, 1978, Human Rights Day.

HAROLD C. HOLLENBECK
9TH DISTRICT, NEW JERSEY

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Congress of the United States
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June 27, 1978

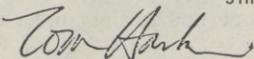
Dr. James Hays
Lamont-Doherty Geological Observatory
Pallisades, New York 10964

Dear Dr. Hays:

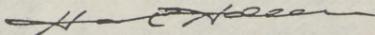
We request that you transmit the enclosed letter to Academician I.P. Gerasimov, Director of the Institute of Geography, Academy of Sciences of the U.S.S.R., who is leading the Soviet delegation to the Reciprocal Soviet/American Conference on Climates of the Pleistocene and Holocene.

Your assistance is greatly appreciated. We hope that this Conference has proved of great scientific merit.

Sincerely,



Tom Harkin, M.C.
Member, Committee on
Science and Technology



Harold C. Hollenbeck, M.C.
Member, Committee on
Science and Technology

Enc.

HOLLENBECK
WASHINGTON OFFICE

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AND DEVELOPMENT

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SCIENCE AND TECHNOLOGY

RESEARCH AND APPLICATIONS
IN SCIENCE AND TECHNOLOGY
AND NUCLEAR ENERGY

Congress of the United States
House of Representatives
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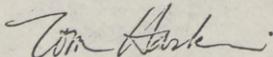
Excellency Anatoliy F. Dobrynin
Ambassador of the Union of Soviet Socialist Republics
3516 16th Street, N.W.
Washington, D. C. 20036

Dear Mr. Ambassador:

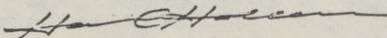
Today we have transmitted the enclosed letter to Academician I. Gerasimov, leader of the Soviet delegation to the Reciprocal Soviet/American Conference on Climates of the Pleistocene and the Holocene, just concluding.

In the letter we ask that you convey to the Soviet scientific community and to Soviet political authorities our concern over human rights violations in your nation and their effect on scientific research. We enclose here a copy of that letter for your information. We ask that you, too, convey our concerns to the appropriate Soviet authorities.

Sincerely,



Tom Harkin, M.C.
Member, Committee on
Science and Technology



Harold C. Hollenbeck, M.C.
Member, Committee on
Science and Technology

Academician I.P. Gerasimov
Dr. Richard C. Atkinson
Mr. Douglas Costle

HAROLD C. HOLLENBECK
9TH DISTRICT, NEW JERSEY

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June 27, 1978

Dr. Richard C. Atkinson, Director
National Science Foundation
1800 G Street, N.W.
Washington, D. C. 20006

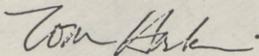
Dear Dr. Atkinson:

We enclose a copy of the letter sent today to Academician I.P. Gerasimov, leader of the Soviet delegation to the Reciprocal Soviet/American Conference on Climates of the Pleistocene and Holocene, for which the Foundation has sponsored United States' academic participation.

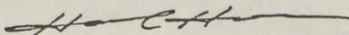
We believe that this is a tremendously important conference, particularly since its work may have great bearing on our understanding of the climatic impact of increased fossil fuel use. Thus, we commend the support which your Foundation gave to this conference. However, while desiring to see this work continue, we felt constrained to express our concerns over the effects of recent harassment of scientists in the Soviet Union. We believe that the protection of human rights throughout the world is of great importance to the health and growth of science. We hope that the Foundation will bear in mind this concern in its relationships with scientific bodies in the Soviet Union and other nations.

We look forward to reviewing this issue with you in greater detail at a later date.

Sincerely,



Tom Harkin, M.C.
Member, Committee on
Science and Technology



Harold C. Hollenbeck, M.C.
Member, Committee on
Science and Technology

Enc.

cc: His Excellency Anatoliy F. Dobrynin
Academician I.P. Gerasimov
Mr. Douglas Costle

HAROLD C. HOLLENBECK
5TH DISTRICT, NEW JERSEY

COMMITTEES:

BANKING, FINANCE AND
URBAN AFFAIRS

SUBCOMMITTEES:

DOMESTIC MONETARY POLICY
INTERNATIONAL DEVELOPMENT
INTERNATIONAL TRADE

SCIENCE AND TECHNOLOGY

SUBCOMMITTEES:

SPACE SCIENCE AND APPLICATIONS
SCIENCE, RESEARCH AND TECHNOLOGY
FOSSIL AND NUCLEAR ENERGY

Congress of the United States
House of Representatives
Washington, D.C. 20515

June 27, 1978

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30TH STREET POST OFFICE
UNION CITY, NEW JERSEY 07087

Mr. Douglas Costle, Administrator
Environmental Protection Agency
401 M Street, S. W.
Washington, D. C. 20024

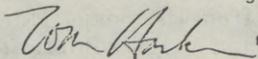
Dear Mr. Costle:

Enclosed is a letter which we sent today to Academician I.P. Gerasimov, leader of the Soviet delegation to the Reciprocal Soviet/American Conference on Climates of the Pleistocene and Holocene. This Conference, just concluding, is sponsored by Working Group VIII of the United States/Union of Soviet Socialist Republics Agreement on Cooperation in the Field of Environmental Protection. This agreement is administered by your agency.

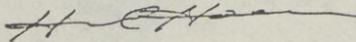
It is our belief that the protection of human rights is of great importance to the future of science, we ask that you will bear in mind our concerns when implementing the Agreement. More important, we ask that you convey our concerns to your counterparts in the Soviet Union.

We look forward to reviewing this issue with you in greater detail at a later date.

Sincerely,



Tom Harkin, M.C.
Member, Committee on
Science and Technology



Harold C. Hollenbeck, M.C.
Member, Committee on
Science and Technology

Enc.

cc: His Excellency Anatoliy F. Dobrynin
Academician I.P. Gerasimov
Dr. Richard C. Atkinson

Mr. BROWN. Without objection.

Mr. HOLLENBECK. I think they will be instructive to forum delegates, other Members of Congress, and the public.

In conclusion, I would just like to restate what seems to me a central conclusion contained in these letters. It goes to the core of the discussion today as well as to the future of East-West scientific cooperation.

I quote:

Communication while vital to the long run health of science is not beneficial per se, but only if it involves exchange between equals, and only if it strengthens research opportunities beyond the immediate exchanges. Acquiescence in the violation of scientists' human rights is unacceptable as a price of scientific exchange.

I would emphasize, as you did, in our resolution that we cannot acquiesce in the violation of the human rights, for example, when Dr. Sakharov and his wife are exiled or when Yuri Orlov is imprisoned and confined to solitary confinement and hard labor. On the other hand, we must in all instances be open to any genuine signals from the Soviets that they do seek to improve the conditions of their outspoken scientists and do genuinely welcome greater freedom of expression within their societies and will respect national borders.

In short, they must show us that they are ready and do seek to abide by the principles of the Helsinki Final Act, in Europe and elsewhere.

Thank you, Mr. Chairman.

Mr. BROWN. Thank you, Mr. Hollenbeck. I'd like to ask our ranking majority member of the subcommittee, Mr. Scheuer, if he has a brief statement.

Mr. SCHEUER. Thank you, Mr. Chairman. I want to congratulate you and all those who worked with you to get these hearings underway. I think their urgency is transparently clear. I would hope that we keep that openmindedness that my colleague just referred to and I would hope we would be receiving some signals from the Soviet Union that they are becoming more sensitive to the human rights implications of some of their actions. But, I would have to say regretfully that I do not see those signals now. In fact, I see everything going the other way.

In 1972, I had the occasion of meeting Dr. Alexander Lerner, one of the world's greatest cyberneticians, who is chairman of the Department of Computer Sciences of the Soviet Academy of Sciences and one of the most distinguished Soviet scientists. He applied in 1971 or 1970 for a visa to go to Israel and was forthwith kicked out of the Soviet Academy of Sciences, his kids were kicked out of the university, his wife lost her job, and he was forbidden employment.

I happened to be taken into custody at his house by the KGB and expelled from the country for my pains in seeing him and some other Soviet scientists. The memory of that pitiful circumstance of Dr. Lerner's is etched very deeply in my mind.

I was back to Moscow last August with a group under the distinguished leadership of Congressman Lester Wolf. We had a chance to meet with top Soviet officials. I met with Lerner to their knowledge. Indeed I told them I was going to see him. Then I met with Lt. Gen. Viktor Semyanovich Paputin, who is the Deputy Head of their Department of the Interior that is in charge of emigration permits. He told me that perhaps the time had come to review Dr. Lerner's situation. He told me that the reason they had refused to give him an exit permit was because of his knowledge of important matters of Soviet

science and technology, that had security implications. But, he said, after 9 years, that maybe his knowledge is sufficiently aged and outdated that the U.S.S.R. can afford to let him go.

I took that to be a clear signal to me that something good was about to happen. I told Dr. Lerner that I had these encouraging signals. He made sure his kids didn't get into any trouble and I sat and waited. Now many months after August, it seems his latest request for emigration permit has been turned down.

After 9 years of being out of the mainstream of commerce, of Soviet science and technology. Coming on top of that comes further twisting of the wrench or further twisting of the screw in the outrageous treatment that they have accorded perhaps this most preeminent scientist in the Soviet Union, Dr. Sakharov.

I join with you in expressing our deepest concern. I congratulate you and I look forward to hearing from the distinguished witnesses.

Thank you, Mr. Chairman.

Mr. BROWN. Thank you very much. Mr. Scheuer, I'd like to ask Dr. Ritter if he would like to make a few comments also. I might point out that Dr. Ritter is the only member of this group who has actually served on a science exchange in the Soviet Union.

Mr. RITTER. Thank you, Mr. Chairman.

Mr. Chairman and members of the joint committee and members of the panel, I welcome this joint hearing to prepare for the forthcoming multinational scientific forum to be held in Hamburg. I personally will be reviewing and listening very closely to the discussion before my own mind is made up as to whether or not we should, as a Nation, put our policy strength behind going to this Forum or not. Today's joint hearing will focus on factors affecting the scientific exchange and on those very policy directions and I am very eager to hear what the scientists themselves have to say.

Mr. Chairman, I'd like to incorporate in the record of these joint hearings a letter which I addressed to Dr. Alexandrov, President of the Academy of Sciences in the U.S.S.R. on January 30, strongly protesting the disrespectful and cynical treatment by Soviet authorities to Nobel Laureate Andrei Sakharov.

Mr. BROWN. Without objection.

[The letter mentioned above follows:]

DON RITTER
15TH DISTRICT, PENNSYLVANIA

COMMITTEES:
•
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SUBCOMMITTEES:
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SCIENCE AND TECHNOLOGY
SUBCOMMITTEES:
ENERGY DEVELOPMENT AND
APPLICATIONS
SCIENCE, RESEARCH AND TECHNOLOGY
NATURAL RESOURCES AND
ENVIRONMENT



Congress of the United States
House of Representatives
Washington, D.C. 20515

January 30, 1980

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ALLENTOWN, PENNSYLVANIA 18101
(215) 439-8861

•
ROOM 705
ALPHA BUILDING
EASTON, PENNSYLVANIA 18042

Dr. A. P. P. Alexandrov, President
Academy of Sciences of the U. S. S. R.
Levinsky Prospekt 14
Moscow V-71, U. S. S. R.

Dear Dr. Alexandrov:

Reliable Soviet news sources indicate the Soviet Academy of Sciences officially has censured Soviet physicist Andrei Sakharov for "actions directed against the interests of the Soviet Union and its peoples." I find this news deeply disturbing and want to indicate to you the strength of my feelings of utter dismay.

From personal involvement as a Scientific Exchange Fellow in Moscow, I know that the Soviet Academy of Sciences wants to be dedicated to the concept that freedom of expression and interaction between scholars and intellectuals is vital to the betterment of mankind and cooperation between nations. It is with great distress that I must protest to you and to members of the Academy's ruling presidium with respect to the curtailment of basic human rights accorded to Nobel Laureate Andrei Sakharov. These actions are imperiling long and arduous efforts by members of your Academy and Americans to improve cooperation and freedom of exchange between U. S. and Soviet scientists and scholars. As a Congressman in the U. S. Congress, I am deeply involved in the basic structure of scientific technological and human exchange between civilized nations.

In fact, my own personal and professional life is dedicated to providing the necessary foundations for advancing public-service ideals and scholarly activities. After I received my doctorate from the Massachusetts Institute of Technology, I experienced the honor of being a Scientific Exchange Fellow in the joint program of your Soviet Academy of Sciences and the U. S. National Academy of Sciences. As a result of that year of scientific collaboration and personal friendship with Soviet colleagues at the Baikov Institute in Moscow and elsewhere, I acquired further knowledge and appreciation of Russian life and language.

Even on a broader scale, significant factors on the international scene provided a basis for Soviet-U. S. scientific and technological cooperation and understanding. Among these, of course, is the Conference on Security and Cooperation in Europe, which was concluded between 36 nations in Helsinki in 1975. As a Congressman representing an industrial and university district in the State of Pennsylvania, I am especially interested in the U. S. Joint Legislative-Executive Commission that monitors compliance with the Helsinki Accords. As you know, among Western signatories, an international review currently is in preparation for monitoring these Accords. This review is very timely now that the U.S.S.R. has taken the above actions cited with respect to the disrespectful treatment of Doctor Sakharov, as well as removing Minister Vladimir A. Kirillin from his post as head of the Joint Soviet American Commission for Science and Technology.

These and earlier Soviet government actions stripping Dr. Sakharov of his impressive credentials and Soviet honors while exiling him to a location not of his choice, removing him from contacts with scholars and intellectuals, are contrary to all fundamental human rights as well as the basics of international cooperation and understanding for which your Academy and many of us in the U. S. have worked so hard.

As a former U.S./U.S.S.R. Exchange Fellow and a concerned American citizen, I strongly ask that your Academy use its power and influence to rectify the actions taken against Dr. Sakharov and Deputy Prime Minister Kirillin. If not, both in the Congress of the United States and as a personal witness, I shall be unable to provide my colleagues and fellow officials in the U. S. Government with convincing evidence that the U.S.S.R. respects the very basic provisions of the Helsinki Accords signed with the U. S. and other nations.

I would most appreciate hearing from you concerning action that the Soviet Academy of Sciences if taking to rectify the abuses heaped on Dr. Sakharov and Deputy Prime Minister Kirillin.

Sincerely,

DON RITTER
Member of Congress

DLR:sj

Mr. SCHEUER. Mr. Chairman, may I ask unanimous consent to include a letter I also wrote to Chairman Alexandrov along with other members of the subcommittee?

Mr. BROWN. Without objection, it was submitted earlier by Mr. Hollenbeck as part of the letter written to Procurator General Rudenko.

Mr. RITTER. My letter also concerned the recent removal of Vladimir A. Kirillin from his post. I think that removal, unexplained, has ominous overtones. These latest Soviet actions provide incontestable evidence that the U.S.S.R. failed to respect basic provisions of the Helsinki Accords signed with the United States and other nations. Personally, I am a cosigner of the letter of protest to Roman Rudenko protesting the continued imprisonment of Soviet scientists who sought to oversee and uphold provisions of the Helsinki Accords we are discussing today.

I think all of us are familiar with the position taken by Valentin Turchin to boycott the Helsinki meeting. He refers to more than 20 members of the Helsinki watch groups in the U.S.S.R. have been arrested and sentenced to long terms of imprisonment.

As one of the few House Members with a doctoral level of training and background in science and technology and having a deep personal commitment to scientific exchange, I face the inescapable conclusion that perhaps it is action on the part of the U.S. Congress which would be necessary to clearly demonstrate to the Soviet Union the American sense of outrage and protest of the treatment which Soviet authorities inflict on leading members of the scientific community in the U.S.S.R. on the eve of the scientific forum.

The recent brutal invasion of Afghanistan by Soviet forces serves to underscore what has already become patently clear: The Soviets have disregarded the Helsinki Accords. I wish to commend my colleagues, the Honorable Congressman Hollenbeck and Chairman Brown for their prompt action on House Joint Resolution 487 which I am cosponsoring with them. If that's not already done, I think it should be in the record as a statement of our feeling.

As a former member of that U.S.-U.S.S.R. Academy of Sciences exchange program, I came to know somewhat the Soviet people as well as Russian science, Soviet life, Russian language, and culture. I personally believe that we as a Nation have a responsibility to look deeper than the very surface of the scientific exchanges which have meaning, deep meaning, really, for our scientific, mutual scientific community.

I think we have to look closely at the question of legitimacy of the Soviet authorities. A quest for legitimacy through the Helsinki Accords, through the scientific forum, indeed through the Olympics, is a consistent goal of the Soviet authorities in the face of really marked transgression of international law. I personally will listen closely to the hearings today and what the scientists have to say about this and try and weigh this along with the kind of opinion that is being put forth by Dr. Turchin as to where I will come out on the question of the United States at least in its policy trends toward the February meetings in Europe.

Thank you, Mr. Chairman.

Mr. BROWN. And thank you, Dr. Ritter.

I'd like now to have our distinguished colleague, Dante Fascell, who is chairman of the—well, I won't recite all the things he's chairman of. I will ask him to make a short statement.

Mr. FASCELL. Thank you, Mr. Chairman.

As chairman of the Commission on Security and Cooperation in Europe, I am pleased to be cochairing this hearing on the multilateral CSCE scientific forum with my distinguished colleagues, Representative George J. Brown, Jr., chairman of the Subcommittee on Science, Research and Technology; and Representative Clement J. Zablocki, chairman of the Subcommittee on International Security and Scientific Affairs.

Mr. Chairman, he, Mr. Zablocki, was at a meeting where I was and that's the reason we are both late.

The scientific forum is the last in a series of CSCE meetings which have taken place in the interval between the Belgrade and Madrid conferences. When the forum's agenda was negotiated last year in Bonn by representatives of governments of CSCE states, no one anticipated that the meeting could prove to be a weathervane of future Soviet attitudes on scientific cooperation with the West. But the Soviet invasion of Afghanistan and the exile of Nobel Laureate Andrei Sakharov—flagrant violations of the 1975 Helsinki Accords—have raised serious doubts as to whether the Soviet Union is truly interested in pursuing fruitful scientific, or indeed, any other cooperation with the West. The scientific forum will provide an opportunity for the U.S. delegation to assess Soviet intentions. It will also serve as a yardstick for measuring prospects for the CSCE review conference in Madrid this fall. We will be glad and delighted to hear from you when you get back about all aspects, social, political, and otherwise of that meeting. I think the forum will be an extremely important meeting for us to participate in.

Mr. Chairman, I want to say in addition that we have got to remember that Andrei Sakharov wasn't the first scientist of conscience to have been subjected to such repression. Helsinki monitoring group founder, Yuri Orlov is currently serving a 7-year labor camp sentence.

His scientific articles have been confiscated and the talented physicist was told to "forget you're a scientist, you will never get out of the camp."

We are pleased to have with us today yet another Soviet physicist whose concern for human rights led to the end of his career as a scientist. Andrei Tverdokhlebov, the son of a diplomat and deputy minister of culture, is the author of numerous scientific publications and was an editor of the "Abstracts of Theoretical Physics of the All Union Institute of Scientific and Technical Information."

In 1970, Mr. Tverdokhlebov joined with his close friend Andrei Sakharov and others to form one of the first dissident groups in the Soviet Union—the Moscow Human Rights Committee. Later, he became secretary of the Soviet Chapter of Amnesty International.

His activities led to his dismissal from work and to exile. Mr. Tverdokhlebov left Moscow on January 22—the day Sakharov was arrested. We hope that he will be able to shed some light on the situation he left behind.

The Commission also is pleased to welcome the head of the U.S. delegation to the scientific forum, Philip Handler, as well as other delegation members, experts from the U.S. scientific community and administration officials.

Thank you, Mr. Chairman.

Mr. BROWN. Thank you very much.

And now, Patt Derian, member of the Helsinki Commission, for a brief word.

Ms. DERIAN. Thank you, Mr. Chairman.

We have a lot of witnesses, so I'll be brief. Ever since Mr. Sakharov was put in internal exile, members of this Government, members of the public, members of the scientific community have said over and over again that his voice would not be stilled.

We have now the Hamburg Scientific Forum coming up and a real opportunity to make sure that his proxies, scientists from other places, particularly scientists from the United States, make sure that they speak for him, that they speak in defense of him, that the meetings must indicate from the onset, I believe, that it's not business as usual.

Science is a search for truth and it's amazing to see what percentage of scientists living in repressive governments in terrible situations find that they are also seeking truth and speaking on behalf of human rights. It happens over and over again, particularly, of course, in the Soviet Union.

And so, the opportunity for American scientists to make known their own feelings as private citizens and as members of an international scientific community is here for all of us.

Thank you very much. I think this hearing is a splendid idea to bring all of these interests together.

Mr. BROWN. Thank you very much.

Without objection, I will also include in the record at this point a statement of Congressman Ottinger which he regrets being unable to present personally.

[The statement follows:]

STATEMENT
of
RICHARD L. OTTINGER
before the
JOINT HEARINGS ON THE HELSINKI SCIENTIFIC FORUM
conducted by the
COMMISSION ON SECURITY AND COOPERATION IN EUROPE
SUBCOMMITTEE ON INTERNATIONAL SECURITY AND SCIENTIFIC AFFAIRS
and the
SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY
on
JANUARY 31, 1980

Mr. Chairman. Thank you for giving me the opportunity to voice my concerns about the Helsinki Scientific Forum which will be held this February in Hamburg, Germany. As Chairman of the Energy Development and Applications Subcommittee I am most concerned with the implications of this forum for the future of East-West relations, which is why I sought to insure that this hearing would be conducted.

I thus want to take this opportunity to convey my distress about a glaring omission from the Forum's agenda. That agenda currently includes topics in the natural sciences, medicine, humanities and social sciences. Absent, however, is a discussion of human rights as they pertain to the scientific community. I strongly believe that a discussion of participating nations' policies regarding the rights of scientists to intellectual freedom and their right to freely communicate with other scientists and with international scientific institutions is integral to the very purpose of this conference. Only if human rights are included as a central topic for discussion will this Forum fulfill its mission as mandated by the Helsinki Accords.

This omission is especially unconscionable in light of the Soviets' recent arrest of the world renowned physicist and Nobel Laureate Andrei Sakharov, and the dismissal of Vladimir Kirillin, a leading proponent of East-West exchange, from the powerful State Committee on Science and Technology.

Both these incidents are clear indications of the Soviet's escalating campaign of domestic repression.

In addition to these recent, flagrant violations of the Helsinki Accords, the Forum must address the Soviets' continuing human rights violations. These include travel restrictions placed on many of the Soviet Union's most qualified scientists who are prohibited from attending international forums due to their "politically unacceptable" views and the systematic repression, arrest and imprisonment of Jewish Soviet scientists who have expressed a desire to emigrate, most notably in the case of Anatoly Shcharansky. In sum, countless Soviet scientists who have chosen to voice their political opinions have been barred from pursuing their professional careers.

The Soviets' recent criminal invasion of Afghanistan has made it more urgent than ever that we insist upon seizing every opportunity to reaffirm our unfaltering commitment to human rights and continuing vigilance of the Soviet Union's persistent violations of these rights and the Helsinki Accords. Quite simply, I believe that intellectual freedom, the right to travel freely between nations and the freedom to pursue religious beliefs without jeopardizing professional goals must be addressed at this Forum.

I therefore urge the US delegation of scientists attending this Forum to heed the words of Andrei Sakharov who has said, "As long as this situation continues no one...anywhere in the world can allow himself to lapse into complacency." This Forum cannot be allow to be guilty of such complacency.

STATEMENTS OF A PANEL: DR. FRANK PRESS, DIRECTOR, OFFICE OF SCIENCE AND TECHNOLOGY POLICY, EXECUTIVE OFFICE OF THE PRESIDENT; HON. THOMAS R. PICKERING, ASSISTANT SECRETARY FOR OCEANS AND INTERNATIONAL ENVIRONMENTAL AND SCIENTIFIC AFFAIRS, DEPARTMENT OF STATE; AND JAMES GOODBY, DEPUTY ASSISTANT SECRETARY OF STATE FOR EUROPEAN AFFAIRS, DEPARTMENT OF STATE

MR. BROWN. Now that the distinguished witnesses have heard the testimony of all the Members of Congress which, of course, is an indication of the high importance which the Members attach to this subject, I think we are ready to proceed with the first panel of administration witnesses.

Because of the problems of time, I'm going to proceed in the following way: I'm going to ask Dr. Press to start the testimony and in about 5 minutes, I'm going to turn the Chair over to Pat Derian while the Members go vote. They will be gone for about 10 minutes and will return. But, I recognize the fact that this proceeding is likely to be long drawn-out unless we do not expedite it in some fashion. This seems to me to be a reasonable way to do it.

Dr. Press, we are very pleased to have you here. I will not give the extensive introduction to which you are entitled, but I think everyone knows that Dr. Press is the Science Adviser to the President, Director of the Office of Science and Technology Policy in the White House. We would like to have you proceed with your statement, Dr. Press.

DR. PRESS. Mr. Chairman and members of the Commission, I will not deal with the scientific forum directly in my testimony since Secretaries Pickering and Goodby will do that. I would like to concentrate my remarks on the scientific and technological cooperation with the Soviet Union in the light of recent events.

Following the President's address on January 4, the Government has taken many steps designed to bring home to the Soviet Union the fact that their invasion of Afghanistan and subsequent actions violating world standards of conduct, will have a severe adverse effect on all forms of cooperation.

In the field of scientific exchanges alone, three high-level meetings scheduled for January and February in the areas of health, housing, and agriculture have been indefinitely postponed. In addition, the magnetohydrodynamics—MHD—channel built in the United States was not shipped as planned.

We are now examining each individual activity planned under all 11 of the bilateral agreements to determine whether they are appropriate under the present circumstances. Certainly, there will be no meetings for the present involving high-level administration officials.

Furthermore, only those low-level, substantive exchanges will be permitted which are of specific scientific interest to the United States or which involve humanitarian subjects such as health.

At the same time, we have taken a deliberate decision to focus our restrictive measures against activities and events, not against the framework of the agreements themselves.

The obvious change in the character of Soviet behavior toward the rest of the world demonstrated by recent events comes at a time when

the quality of Soviet participation in cooperative activities under the bilateral agreements had begun to improve in some ways.

As the United States has persisted in requiring mutual benefit and reciprocity of access, the tempo of joint activities in the last 12 months has increased in such areas as physics, electrometallurgy, fusion and magnetohydrodynamics; subjects in which the Soviets have high levels of achievement.

Exchanges in some of these areas have taken years to develop and recently had begun to pay dividends. At the same time, some of their very best scientists, including Jewish scholars of world standing have been included in scientific meetings and exchange visits.

Furthermore, younger and more able Soviet scientists had recently been allowed to participate in direct, longer term exchanges between the National Academy of Sciences and the Academy of Sciences of the U.S.S.R. These gains have been achieved against a background of very close monitoring of agreements by the United States.

Where Soviet performance has not been satisfactory, there have been cutbacks. For example, under the transportation agreement, the Soviet side repeatedly refused to fulfill its commitments to permit access to ice transiting technology.

As a result, the United States cut off any further cooperation in that area and only agreed to a 2-year renewal of the agreement instead of the previous 5. Under the energy agreement, the Soviets agreed last June to exchange information on energy production and use for the next 20 years on a regional basis, but failed to carry through.

As a result, the United States dropped further cooperation in two areas, solar and thermal energy, and further steps will be taken. Thus, not all cutbacks have been motivated by foreign policy. Many cutbacks were initiated prior to Afghanistan to place scientific and technological cooperation on a more equitable basis.

While the bilateral government-to-government programs have not been easy to manage, careful attention has made it possible to derive significant benefits in certain areas. The most obvious and direct benefit which both sides share to the same degree is the advancement of the store of scientific knowledge.

Of course we have assessed the more direct benefits to the United States, as we assume the Soviets have done from their point of view. The experiments at the Institute of High Temperatures on magnetohydrodynamics have provided valuable information for the design and construction of our own MHD facilities.

We have received wastewater treatment technologies that our experts say would have cost \$55 million to develop here. Their information on nuclear fusion has saved the United States up to 2 years of experimental work and about \$10 million expenses. There are also specific examples in other fields such as health, oceans, and space research.

All of the benefits, however, have not required large expenditures, and most of the money which has been required from our side has been spent in the United States, has been in support of American scientists working in their own laboratories.

Joint or parallel research conducted under the many projects involved American scientists pursuing work in their own laboratories

on the basis of agreed plans and meeting periodically to compare results. In some cases, materials have been exchanged for testing or processing, with each side paying its own share of costs.

What I have described is a rather modest cooperative program which has developed over the past 8 years into a meaningful and mutually beneficial flow of scientific and technical knowledge.

We have chosen this area, along with other better known and more materially significant relationships with the Soviet Union, to drive home to them the extreme seriousness with which we view their recent actions. So far, the restrictions in this area will deny them high-level contact and access to the United States which they so highly value.

Although the scientific forum is taking place within the multi-lateral framework of the Commission on Security and Cooperation in Europe, U.S. participation should be viewed within the context of overall American views toward the Soviet Union.

This meeting, at which the United States will be represented by a high-level delegation of scientists, will be an ideal occasion to confront representatives of the Soviet regime with the strongly held views of the Western scientific community concerning their recent belligerent action.

I know you will be hearing directly from members of the U.S. delegation later this afternoon, but I would like to point out that, contrary to the practice of Communist regimes, our delegation consists of independent individuals who will speak their own views without restrictions from the Government.

The delegation will be thoroughly briefed at the State Department, and will hear from various private organizations which follow human rights issues. One or two State Department officers will accompany the delegation to provide support and guidance as requested.

It is clear that the silencing of one of the giants of Soviet and world physics drastically impairs contacts in this field whereas the Helsinki Accords call for measures to promote the expansion of contacts.

As a final point, I wish to address very briefly the committee's interest in United States-Chinese scientific exchanges. As you know, scientific exchanges with China have been a positive element in the process of normalizing United States-Chinese relations.

However, these exchanges with China should be viewed as an important aspect of our long-term relations with that country and are justified on their own merits.

Thank you.

[The prepared statement of Dr. Press follows:]

STATEMENT BY DR. FRANK PRESS BEFORE
SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY,
SUBCOMMITTEE ON INTERNATIONAL SECURITY AND SCIENTIFIC AFFAIRS,
and COMMISSION ON SECURITY AND COOPERATION IN EUROPE

JANUARY 31, 1980

Messrs. Chairmen and Members of the Committee,

I am glad to accept your invitation to appear before these joint hearings concerning the scientific forum which is scheduled to meet in Hamburg next month within the framework of the Commission on Security and Cooperation in Europe. The significance of this meeting has been greatly enhanced by the recent events, including the Soviet invasion of Afghanistan and internal exile of Andrei Sakharov.

Following the President's address on January 4, the Government has taken many steps designed to bring home to the Soviet Union the fact that their invasion of Afghanistan and subsequent actions violating world standards of conduct, will have a severe adverse effect on all forms of cooperation. In the field of scientific exchanges alone, three highlevel meetings scheduled for January and February have been indefinitely postponed; the magnetohydrodynamics (MHD) channel built in the US was not shipped as planned. We are now examining each individual activity planned under all 11 of the bilateral agreements to determine whether they are appropriate under the present circumstances. Certainly there will be no meetings involving highlevel Administration officials. Furthermore, only those low-level, substantive exchanges will be permitted which are of specific scientific interest to the US or which involve humanitarian subjects such as health and pollution prevention.

At the same time, we have taken a deliberate decision to focus our restrictive measures against activities and events, not against the framework of the agreements themselves.

The obvious change in the character of Soviet behavior toward the rest of the world demonstrated by recent events comes at a time when the quality of Soviet participation in cooperative activities under the bilateral agreements had begun to improve in some ways. As the US has persisted in requiring mutual benefit and reciprocity of access, the tempo of joint activities in the last twelve months has increased in such areas as physics, electrometallurgy, fusion and magnetohydrodynamics, subjects in which the Soviets have high levels of achievement. Exchanges in some of these areas have taken years to develop and recently had begun to pay dividends. At the same time some of their very best scientists have been included in scientific meetings and exchange visits. Furthermore, younger and more able Soviet scientists--including Jewish scientists--had recently been allowed to participate in direct, longer term exchanges between the National Academy of Sciences and the Academy of Sciences of the USSR.

In some other ways Soviet performance has not been satisfactory. Because of the closed nature of their society, it has been difficult for them to cooperate in certain ways that appear normal to us but which to them apparently are inconsistent with the principles of state planning and control. For example, under the Transportation Agreement, the Soviet side repeatedly refused to fulfill commitments

to permit access to ice transiting technology. Cooperation in this area was apparently considered too sensitive by Soviet naval authorities. As a result, the United States cut off any further cooperation in that area and only agreed to a two-year renewal of the agreement instead of the previous five. Under the Energy Agreement, the Soviets agreed last June to exchange information on energy production and use for the next 20 years on a regional basis, but failed to carry through. Cooperation of this type was apparently considered too sensitive by planning authorities. As a result the United States dropped further cooperation in two areas, solar and thermal energy, and further steps will be taken. Thus, not all cutbacks have been motivated by foreign policy.

While the bilateral government-to-government programs have not been easy to manage, careful attention has made it possible to derive significant benefits in certain areas. The most obvious and direct benefit which both sides share to the same degree is the advancement of the store of scientific knowledge. Of course we have assessed the more direct benefits to the United States, as we assume the Soviets have done from their point of view. The experiments at the Institute of High Temperatures on magnetohydrodynamics have provided valuable information for the design and construction of our own MHD facilities. We have received waste water treatment technologies that our experts say would have cost us \$55 million to develop here. Their information on nuclear fusion has saved the US up to two years of experimental work and

about \$10 million in expenses. There are also specific examples in other fields such as health, oceans, and space research.

All of these benefits, however, have not required large expenditures, and almost all of the money which has been required from our side has been spent in the United States. Joint or parallel research conducted under the many projects involved American scientists pursuing work in their own laboratories on the basis of agreed plans and meeting periodically to compare results. In some cases, materials have been exchanged for testing or processing, with each side paying its own share of costs.

What I have described is a rather modest cooperative program which has developed over the past eight years into a meaningful and mutually beneficial flow of scientific and technical knowledge. We have chosen this area, along with other better known and more materially significant relationships with the Soviet Union, to drive home to them the extreme seriousness with which we view their recent actions. So far the restrictions in this area will deny them high-level contact and access to the United States which they so highly value.

Although the Scientific Forum is taking place within the multilateral framework of the Commission on Security and Cooperation in Europe, US participation should be viewed within the context of overall US policy toward the Soviet Union. This meeting, at which the US will be represented by a high-level delegation of scientists, will be an ideal occasion

to confront representatives of the Soviet regime with the strongly held views of the Western Scientific community concerning their recent belligerent action.

I know that you will be hearing directly from members of the US delegation later this afternoon, but I would like to point out that, contrary to the practice of Communist regimes, our delegation consists of independent individuals who will speak their own views without restrictions from the Government.

The delegation will be thoroughly briefed at the Department of State, and will hear from various private organizations which follow human rights issues. State Department officers will accompany the delegation to provide support and guidance as requested.

It is clear that the silencing of one of the giants of Soviet and world physics drastically impairs contacts in this field, and is contrary to the Helsinki Accord's call for measures to "promote the expansion of contacts...". We believe the Scientific Forum must discuss the context within which the scientific cooperation takes place, not simply those scientific subjects themselves which are amply discussed in many other settings.

As a final point, I wish to address very briefly the Committee's interest in US-Chinese scientific exchanges. As you know, scientific exchanges with China have been a positive element in the process of normalizing US-Chinese relations. These exchanges with China should be viewed as an important aspect of our long-term relations with that country and are justified on their own merits.

MR. BROWN. Thank you very much, Dr. Press.

I'm going to ask Secretary Derian to take the Chair at this point and I would ask Mr. Pickering and Mr. Goodby for their statements and then, we will question the three of you together.

MS. DERIAN. Next is Mr. Thomas Pickering, Assistant Secretary of State for Oceans, Environment, and Science.

MR. PICKERING. Thank you very much, Pat.

I welcome the opportunity to appear before the Commission. These hearings are taking place at a time when international relationships are changing at a very rapid pace. Major issues before us today were nonexistent only a few weeks ago.

It is especially useful for representatives of the executive branch to meet with you now since these issues directly affect matters of concern to these subcommittees.

The cause of these hearings is the holding of the scientific forum in Hamburg, February 18 to 29, this year. This event is of special interest because it will bring together within the framework of the Commission on Security and Cooperation in Europe scientists from 35 countries for the purpose of expanding relationships through increased contacts, communication, and exchange of information.

The recent acts of the Soviet Union in taking over the neighboring country of Afghanistan and subjecting to internal exile a leading world scientist and Soviet citizen violates the spirit of the provisions of the Helsinki Pact and creates a situation in which further efforts to promote the objectives of that agreement become extremely difficult.

The very fact that our delegation to the scientific forum will be free to express individual opinions will highlight to the Soviets and other Eastern European participants the essence of the democratic process resulting from free inquiry and discussion.

It will become clear at Hamburg that the consensus in the United States on recent Soviet actions is rejection and condemnation. For its part, our Government took immediate and clearcut measures.

On January 7, the Soviet Government was notified that three high-level meetings were being indefinitely postponed. These include: The agricultural joint committee meeting scheduled to take place in Moscow January 14 and 15—Under Secretary of Agriculture Dale Hathaway was to have led the U.S. delegation to that meeting.

A meeting of the housing joint committee scheduled for late February in Moscow, HUD Secretary Moon Landreau was to have led the U.S. delegation there; and the Health Joint Committee meeting which was to have taken place in Washington the week of February 10, HEW Assistant Secretary for Health Dr. Julius Richmond was to have led the U.S. delegation to that meeting.

Furthermore, the meeting of the working group on research and technology and working group on economic research and information under the agricultural agreement were to have taken place in mid-January and were also indefinitely postponed.

On the same day, our Embassy in Moscow informed the Institute of High Temperatures that the magnetohydrodynamics channel built in the United States would not be shipped to Moscow on January 20 as planned and the U.S. delegation would not attend the steering committee meeting on MHD scheduled for that same period of time.

New internal U.S. procedures were established which require all the technical agencies responsible for activities under the 11 bilateral government-to-government agreement to submit each individual event planned under existing implementation programs to the State Department for review.

At present, only those activities which are of specific scientific or humanitarian interest or being permitted to proceed. The type and volume of activities permitted will be adapted to changing circumstances.

We have told our allies about the steps which we are taking and we are seeking their support for these steps in their own policies. Canada, the United Kingdom and Belgium have already announced certain steps that are similar to ours as part of their own policies in this area.

The application of these policies to the activities under the 11 bilateral agreements has already reduced the rate of exchange activities and will have a broad effect both in volume and substance.

The U.S. side of the three most active working groups under the energy and atomic energy agreements, namely in the areas of fusion, fundamental properties of matter, and magnetohydrodynamics have already evaluated their programs and have developed plans to reduce cooperative expansion considerably below the level previously agreed upon with the Soviets.

The activities being retained are those in which there is a maximum of U.S. interest. Examples of the activities that have been called off or are being continued will help to explain the present policy for you in concrete terms.

The U.S. delegation did not travel to the Soviet Union to discuss coal mining because there was not sufficient interest for the United States. The Soviet delegation on science policy was not permitted to come here because it was to be led by a deputy minister, too high a level under present circumstances.

The Soviet delegation on pollution of marine environment was postponed because the U.S. host organization did not believe there was sufficient programmatic interest to meet present policy guidelines.

On the other hand, a delegation of Soviet experts is traveling to the United States on the topic of fire resistance of buildings and components because of the humanitarian purpose of the activity and the potential beneficial result.

A small Soviet delegation on biological control of pests came to the United States recently for the same reason. Six U.S. researchers will be going to the U.S.S.R. for a meeting on cancer pathomorphology. Certain routine substantive activities of some potential benefit to our country are taking place.

This results from a deliberate decision to retain a low level of activity to keep the mechanism of these exchanges operational. As Dr. Press has already pointed out, almost all of the money being spent in the support of United States-Soviet joint programs is spent within the boundaries of this country.

Maintaining a low level of joint activity will mean that research grants which have already been put out can continue to be followed up by U.S. scientists. This will give them an incentive to pursue pro-

grams which are already agreed upon under a number of the active programs which have been developed under the bilateral agreements.

Also, U.S. working group chairmen will be more likely to agree to remain in place if there is still some activity primarily within the United States to pull together and oversee.

The committee's invitation to me to testify included a request to comment on the effect of recent international events on the future of East-West scientific cooperation, including cooperation with the People's Republic of China.

In our view, cooperation with China in fields of science and technology is fully justified for the very real benefits that will accrue to both sides. These activities do not depend upon and should not be considered to be responses to changing relationships between the United States and the Soviets or, indeed, any other country.

At this moment in history, our relationship with the People's Republic of China is a rapidly growing one, especially since the normalization of relations between the two countries 1 year ago. In the short span of 12 months, over 15 agreements of various types have been signed, including the Umbrella Science and Technology Agreement and separate agreements in such areas as medicine and public health, oceanography, atmospheric science, and student and scholar exchanges.

Cooperation of this nature is noncontroversial and can be initiated relatively easily at the opening states of a new relationship in order to facilitate the reestablishment at all levels after many years of separation.

Dr. Press and I have just returned from the first meeting of the United States-People's Republic of China Joint Commission of Scientific and Technological Cooperation held in Peking on January 22 to 24, and on that occasion, additional agreements were signed in the field of Earth sciences, earthquake prediction, the sale of the Landsat ground station and exchanges between the academies of both countries.

Already, some 60 Chinese delegations have come to the United States both for commercial and science exchange purposes. More than 1,000 Chinese students are studying in American universities and colleges and the pact of activities is expected to increase.

Mr. Chairman, the committee staff has been good enough to inform us of the resolution which you and Congressman Hollenbeck have introduced concerning the subject of our science exchanges with the Soviet Union. While we have had but a brief opportunity this morning to review the resolution, I believe its general thrust and direction are very much in parallel with our national policies on this subject and I would like to extend my thanks to you for the support for our national policies which is represented by the resolution.

As I heard you explain again its principles and purposes in your opening statement this afternoon, I believe that the two branches are very close together on this issue. We would, of course, like to review it more carefully and give you the considered view of the administration in as short a time as we can.

Mr. Chairman, thank you again for the opportunity to be with you this afternoon and I would be pleased to join with my colleagues in answering any questions which you may have.

[The prepared statement of Mr. Pickering follows:]

STATEMENT BY THOMAS R. PICKERING
ASSISTANT SECRETARY OF STATE
BUREAU OF OCEANS AND INTERNATIONAL
ENVIRONMENTAL AND SCIENTIFIC AFFAIRS
BEFORE JOINT HEARINGS ON THE CSCE SCIENTIFIC FORUM

January 31, 1980

These joint hearings are taking place at a time when very basic international relationships are changing at a rapid pace. Major issues before us today were non-existent only a few weeks ago. It is especially useful for representatives of the executive branch to meet with you now since these issues directly affect matters of concern to these sub-committees.

The imminent cause for these hearings is the holding of the Scientific Forum in Hamburg February 18 to 29. This event is of special interest because it will bring together, within the framework of the Commission on Security and Cooperation in Europe, scientists from 35 countries for the purpose of expanding relationships through increased contacts, communications and the exchange of information. The recent acts of the Soviet Union of taking over the harmless neighboring country of Afghanistan and subjecting to internal exile a leading world scientist violates the spirit provisions of the Helsinki Pact and creates a situation in which further efforts to promote its objectives becomes extremely difficult.

The very fact that our delegation to the Scientific Forum will be free to express individual opinions will highlight to the Soviets and other Eastern European participants the essence of the democratic system which depends upon a broadly based consensus of views resulting from free inquiry and discussion. It will become clear at Hamburg that the consensus in the United States on recent Soviet actions is rejection and condemnation.

For its part, the government took immediate and clear cut measures affecting scientific exchanges as part of the broader steps taken in other areas. On January 7th the Soviet Government was notified that three high level meetings were being indefinitely postponed: the Agricultural Joint Committee meeting scheduled to take place in Moscow January 14-15. Under Secretary of Agriculture Hathaway was to have led the US delegation to that meeting; a meeting of the Housing Joint Committee scheduled for late February in Moscow. HUD Secretary Moon Landrieu was to have led the US delegation; and the Health Joint Committee meeting which was to have taken place in Washington the week of February 10. HEW Assistant Secretary Richmond was to have led the US delegation. Furthermore, the meeting of the working group on Research and Technology and the working group on Economic Research and Information under the Agriculture Agreement which were to have taken place in mid-January were also indefinitely postponed. On the same day, the Embassy in Moscow informed the Institute of High Temperatures that the magnetohydrodynamics (MHD) channel built by the United States would not be shipped

to Moscow January 20 as planned and the US delegation would not attend the Steering Committee meeting on MHD scheduled for the same period.

On that same date, new internal U.S. procedures were established which require all the technical agencies that manage activities under the eleven bilateral government-to-government agreements to submit each individual event planned under existing implementing programs to the Department of State for review. At present, only those activities which are of specific scientific or humanitarian interest are being permitted to proceed. The type and volume of activities permitted will be adapted to changing circumstances.

The application of these policies to the activities under the eleven bilateral agreements has already reduced the rate of exchange activity and will have a lasting effect both in volume and substance. The US side of the three most active working groups under the Energy and Atomic Energy Agreements namely fusion, fundamental properties of matter, and magnetohydrodynamics, have already evaluated their programs and have developed plans to reduce cooperative exchanges considerably below the level previously agreed with the Soviets. Those activities being retained are those in which there is a maximum of US scientific interest.

Examples of activities that have been called off or are being continued will help explain the present policies in concrete terms. A US delegation did not travel to the Soviet Union to discuss coal mining because there was not sufficient scientific interest for the US. A Soviet delegation on science policy was not permitted to come here because it was to be led by a Deputy Minister, too high a level under present circumstances. A Soviet delegation on pollution of marine environment was postponed because the US host organization did not believe there was sufficient programmatic interest to meet present policy guidelines. On the other hand a delegation of Soviet experts is traveling to the United States on the topic of fire resistance of buildings and components because of the humanitarian purpose of the activity and the potential beneficial result. A small Soviet delegation on biological control of pests came to the US recently for the same reason. Six U.S. researchers will be going to the USSR for a meeting on cancer pathomorphology.

From what I have said, it is apparent that no blanket cancellation of all activities has been imposed and that certain routine substantive activities of some potential benefit are taking place. This results from a deliberate decision to retain a low level of activity to keep the mechanism operational.

As Dr. Press has pointed out, almost all of the money being spent in support of US-USSR joint programs is spent within the boundaries of the United States. Maintaining a low level of joint activity will mean that research grants can continue to be made to US scientists to give them an incentive to pursue programs already agreed upon under some of the many active projects which have developed under the bilateral agreements. Also US working group chairmen will be more likely to agree to remain in place if there is still some activity primarily within the United States to coordinate.

Your invitation to me to testify included a request to comment on the effect of recent international events on the future of East-West scientific cooperation including cooperation with the People's Republic of China. In our view, cooperation with China in fields of science and technology is fully justified for the very real benefits that will accrue to both sides. These activities do not depend on and should not be considered to be a response to the changing relationship between the US and the USSR.

At this moment in history, our relationship with the People's Republic of China is growing rapidly, especially since the normalization of relations between the two countries a year ago. In the short span of 12 months, over 15 agreements of various types have been signed, including the umbrella science and technology agreement, and separate agreements in such areas as medicine and public health,

oceanography, atmospheric science, metrology, agriculture and student and scholar exchanges. Cooperation of this nature is non-controversial and can be initiated relatively easily at the opening stages of this new relationship to facilitate the reestablishment of contacts at all levels after the many years of separation. Dr. Press and I have just returned from the first meeting of the US-PRC Joint Commission on Scientific and Technological Cooperation held in Beijing January 22-24. On that occasion additional agreements were signed in fields of earth sciences, earthquake prediction, the sale of a Landsat D ground station, and Academy-to-Academy exchanges. Already, some 60 Chinese delegations come to the US each month in the various fields I have just mentioned, more than a thousand Chinese students are studying in over 100 American universities and colleges, and the pace of activities is expected to increase.

Mr. BROWN. Thank you very much. You will, of course, have additional opportunities to comment on the resolution. This was not intended to be a hearing on the resolution. But, we appreciate your statement.

Dr. Press, are you restrained by time?

Dr. PRESS. I just made a call. I can stay for the question period.

Mr. BROWN. Good. Dr. Goodby?

Dr. GOODBY. Thank you, Mr. Chairman. Thank you for the opportunity to exchange views on the scientific forum which begins on February 18 in Hamburg in the Federal Republic of Germany.

The meeting will bring together scientists from the 35 nations which participate in the Conference on Security and Cooperation in Europe to discuss current scientific developments and the expansion of scientific contacts and communications. The Soviet Union will be one of the participants. In my opening statement, I would like to speak about the background to the forum and the U.S. approach to it.

Some are asking whether it makes any sense to discuss scientific cooperation at the scientific forum at a time when the Soviets are in the process of subjugating the people of Afghanistan and silencing heroic scientists like Andrei Sakharov in their own country. This, I think, is a reasonable question in light of these events.

We deplore these acts, but we are convinced that participation in multilateral meetings like the scientific forum, which provide the opportunity to express our concerns, is far more effective than a boycott. We continue to believe in the value of international scientific cooperation. And, we continue to believe that an international atmosphere conducive to such cooperation can only be created through respect for human rights and the other obligations in the Helsinki Final Act. Our delegation, I am sure, will bring these views directly to the attention of the delegates of the Soviet Union and their allies.

Science has always played an important role in the Conference on Security and Cooperation in Europe. Sections of both basket II and basket III of the Final Act are devoted to scientific cooperation.

The Final Act calls for expanded scientific exchanges, improved opportunities for the exchange of information, the facilitation of direct contacts and communication among scientists and wider use of commercial channels for applied research and for the transfer of technology.

A special section considers expanded cooperation in the field of the environment.

Since 1975, when the Final Act was signed, we have experienced considerable growth in scientific cooperation among the CSCE participants, but also persistent problems. Many of the more than 60 scientific and technical agreements in effect with the Soviet Union and the states of Eastern Europe were negotiated after the Final Act.

Activities under many of the older agreements increased in frequency, quality and scope in recent years. Just last November, the CSCE signatories signed a treaty on transboundary air pollution as a direct result of the encouragement which CSCE gives to cooperation in environmental matters.

At the same time, scientific cooperation has continued to be impeded by limitations on contacts and communications between Eastern and

Western scientists. And Western scientists and governments have continued to be deeply concerned by violations of human rights in the Soviet Union and elsewhere, including the imprisonment of political dissidents and the denial of employment to scientists wishing to emigrate.

The persistence of problems like these gives the forum its present relevance.

The Federal Republic of Germany first proposed a scientific forum before the Helsinki Final Act was signed. Basket III of the Final Act states that the signatories will envisage holding "a meeting of leading personalities in science * * * to discuss interrelated problems of common interest concerning current and future developments in science, and to promote the expansion of contacts, communications and the exchange of information between scientific institutions and among scientists."

This dual formulation involving both developments in science and the expansion of scientific contacts and communication has remained the mandate for the forum.

The CSCE followup meeting in Belgrade agreed that experts should meet to prepare for the scientific forum. That meeting of experts took place in Bonn in the summer of 1978, and our delegation was led by Mr. Guy Coriden, who was Deputy Director of the staff of the CSCE Commission.

The Bonn meeting set the time and place for the forum, established the agenda, and made other organizational arrangements for the forum. CSCE works by consensus—that is, unanimous consent, and all of these arrangements had to be acceptable to all 35 participating states.

As we have noted, the forum will convene in Hamburg on February 18 and will last for 2 weeks. The specific scientific fields to be discussed have been narrowed to include energy resources, food production, medicine, urban development, and the environment.

The forum may, but is not required to, produce recommendations to participating governments and the Madrid CSCE followup meeting. The meeting has no power to make decisions or commit the U.S. Government.

Keeping in mind that the forum is meant to be a gathering of leading scientists, not of governments, we have endeavored to send a delegation to the forum which would be both expert in the specific scientific fields on the agenda and representative of the views of the American scientific community.

Dr. Philip Handler, the president of the National Academy of Sciences, was chosen to lead the delegation and asked to nominate a suitable slate of delegates. With advice from interested private organizations, he has done a magnificent job, and I am sure the United States will be represented most ably at Hamburg.

The delegation includes two winners of the Nobel Prize, Dr. Christian Anfinsen and Dr. Paul Flory, who are familiar with the Conference on Security and Cooperation in Europe from their work on the Helsinki Watch Committee in New York.

The scientists on the delegation, as we have noted, will be accompanied by three CSCE experts: two from the Department of State and one from the staff of the CSCE Commission.

We believe the value of the forum lies in the opportunity it provides for leading scientists to exchange views with each other directly. There will be some value in discussion of the purely scientific subjects on the agenda, but this—and I want to emphasize this—that this is a CSCE meeting as well as a scientific meeting. It shares in the spirit of the final act and in the conviction that real peace and security as well as fruitful cooperation in all fields must ultimately rest on the strong foundation of respect for human rights.

This is the meaning of the second part of the mandate, the expansion of contacts, communication, and the exchange of information among scientists and scientific institutions.

Freer scientific interchange would be of enormous benefit to all mankind, and not only the 35 states participating in the meeting. It will be important, I believe, to consider the barriers to such free interchange.

Hanging over the whole meeting will be the question of the effect of Soviet aggression in Afghanistan on international relations and on international scientific cooperations. As my colleagues have indicated, recent Soviet actions have made impossible any expansion of scientific cooperation with the Soviet Union for the foreseeable future. And indeed, cooperation, as we have said, has virtually come to a standstill.

The scientific forum is an important part of the CSCE process which is moving, unevenly, I grant, toward full implementation of the commitments in the final act. It will not by itself solve the many problems impeding scientific cooperation at the present time.

But, neither will it overlook the failure of certain governments to honor the commitments which they made at Helsinki to respect national sovereignty and to respect human rights. By providing the opportunity for an international examination of such issues, we believe the scientific forum will serve a very useful purpose.

[The prepared statement of Mr. Goodby follows:]

STATEMENT OF DEPUTY ASSISTANT SECRETARY GOODBY
BEFORE JOINT HEARINGS ON THE CSCE SCIENTIFIC FORUM
JANUARY 31, 1980

CHAIRMAN BROWN, CHAIRMAN FASCELL, CHAIRMAN ZABLOCKI,
MEMBERS OF THE COMMITTEES ON SCIENCE AND TECHNOLOGY AND
FOREIGN AFFAIRS AND OF THE COMMISSION ON SECURITY AND COOPERATION
IN EUROPE:

THANK YOU FOR THE OPPORTUNITY TO EXCHANGE VIEWS ON THE
SCIENTIFIC FORUM WHICH BEGINS ON FEBRUARY 18 IN HAMBURG IN
THE FEDERAL REPUBLIC OF GERMANY. THE MEETING WILL BRING
TOGETHER SCIENTISTS FROM THE THIRTY-FIVE NATIONS WHICH
PARTICIPATE IN THE CONFERENCE ON SECURITY AND COOPERATION IN
EUROPE TO DISCUSS CURRENT SCIENTIFIC DEVELOPMENTS AND THE
EXPANSION OF SCIENTIFIC CONTACTS AND COMMUNICATIONS. THE
SOVIET UNION WILL BE ONE OF THE PARTICIPANTS. IN MY OPENING
STATEMENT, I WOULD LIKE TO SPEAK ABOUT THE BACKGROUND TO THE
FORUM AND THE UNITED STATES' APPROACH TO IT.

SOME ARE ASKING WHETHER IT MAKES ANY SENSE TO DISCUSS
SCIENTIFIC COOPERATION AT THE SCIENTIFIC FORUM WHEN THE
SOVIETS ARE IN THE PROCESS OF SUBJUGATING THE PEOPLE OF
AFGHANISTAN AND SILENCING HEROIC SCIENTISTS LIKE ANDREI
SAKHAROV IN THEIR OWN COUNTRY. THIS IS A LEGITIMATE QUESTION.
WE DEPLORE THESE ACTS, BUT WE ARE CONVINCED THAT PARTICIPATION
IN MULTILATERAL MEETINGS LIKE THE SCIENTIFIC FORUM,
WHICH PROVIDE THE OPPORTUNITY TO EXPRESS OUR CONCERNS, IS
FAR MORE EFFECTIVE THAN A BOYCOTT. WE CONTINUE TO BELIEVE IN
THE VALUE OF INTERNATIONAL SCIENTIFIC COOPERATION. AND WE
CONTINUE TO BELIEVE THAT AN INTERNATIONAL ATMOSPHERE CONDUCTIVE TO SUCH

COOPERATION CAN ONLY BE CREATED THROUGH RESPECT FOR HUMAN RIGHTS AND THE OTHER OBLIGATIONS IN THE HELSINKI FINAL ACT. OUR DELEGATION WILL BRING THESE VIEWS DIRECTLY TO THE ATTENTION OF THE DELEGATES OF THE SOVIET UNION AND THEIR ALLIES.

SCIENCE HAS ALWAYS PLAYED AN IMPORTANT ROLE IN THE CONFERENCE ON SECURITY AND COOPERATION IN EUROPE. SECTIONS OF BOTH BASKET II AND BASKET III OF THE FINAL ACT ARE DEVOTED TO SCIENTIFIC COOPERATION. THE FINAL ACT CALLS FOR EXPANDED SCIENTIFIC EXCHANGES, IMPROVED OPPORTUNITIES FOR THE EXCHANGE OF INFORMATION, THE FACILITATION OF DIRECT CONTACTS AND COMMUNICATION AMONG SCIENTISTS, AND WIDER USE OF COMMERCIAL CHANNELS FOR APPLIED RESEARCH AND FOR THE TRANSFER OF TECHNOLOGY. A SPECIAL SECTION CONSIDERS EXPANDED COOPERATION IN THE FIELD OF THE ENVIRONMENT.

SINCE 1975, WHEN THE FINAL ACT WAS SIGNED, WE HAVE EXPERIENCED CONSIDERABLE GROWTH IN SCIENTIFIC COOPERATION AMONG THE CSCE PARTICIPANTS, BUT ALSO PERSISTENT PROBLEMS. MANY OF THE MORE THAN 60 SCIENTIFIC AND TECHNICAL AGREEMENTS IN EFFECT WITH THE SOVIET UNION AND THE STATES OF EASTERN EUROPE WERE NEGOTIATED AFTER THE FINAL ACT. ACTIVITIES UNDER MANY OF THE OLDER AGREEMENTS INCREASED IN FREQUENCY, QUALITY, AND SCOPE IN RECENT YEARS. JUST LAST NOVEMBER THE CSCE SIGNATORIES SIGNED A TREATY ON TRANS-BOUNDARY AIR POLLUTION AS A DIRECT RESULT OF THE ENCOURAGEMENT WHICH CSCE GIVES TO COOPERATION IN ENVIRONMENTAL MATTERS.

AT THE SAME TIME, SCIENTIFIC COOPERATION HAS CONTINUED TO BE IMPEDED BY LIMITATIONS ON CONTACTS AND COMMUNICATIONS BETWEEN EASTERN AND WESTERN SCIENTISTS. AND WESTERN SCIENTISTS AND GOVERNMENTS HAVE CONTINUED TO BE DEEPLY CONCERNED BY VIOLATIONS OF HUMAN RIGHTS IN THE SOVIET UNION AND ELSEWHERE, INCLUDING THE IMPRISONMENT OF POLITICAL DISSIDENTS AND THE DENIAL OF EMPLOYMENT TO SCIENTISTS WISHING TO EMIGRATE. THE PERSISTENCE OF PROBLEMS LIKE THESE GIVES THE FORUM ITS PRESENT RELEVANCE.

THE FEDERAL REPUBLIC OF GERMANY FIRST PROPOSED A SCIENTIFIC FORUM BEFORE THE HELSINKI FINAL ACT WAS SIGNED. BASKET III OF THE FINAL ACT STATES THAT THE SIGNATORIES WILL ENVISAGE HOLDING "A MEETING OF LEADING PERSONALITIES IN SCIENCE . . . TO DISCUSS INTERRELATED PROBLEMS OF COMMON INTEREST CONCERNING CURRENT AND FUTURE DEVELOPMENTS IN SCIENCE, AND TO PROMOTE THE EXPANSION OF CONTACTS, COMMUNICATIONS AND THE EXCHANGE OF INFORMATION BETWEEN SCIENTIFIC INSTITUTIONS AND AMONG SCIENTISTS." THIS DUAL FORMULATION INVOLVING BOTH DEVELOPMENTS IN SCIENCE AND THE EXPANSION OF SCIENTIFIC CONTACTS AND COMMUNICATION HAS REMAINED THE MANDATE FOR THE FORUM.

THE CSCE FOLLOW-UP MEETING IN BELGRADE AGREED THAT EXPERTS SHOULD MEET TO PREPARE FOR THE SCIENTIFIC FORUM.

THAT MEETING TOOK PLACE IN BONN IN THE SUMMER OF 1978, AND OUR DELEGATION WAS LED BY MR. GUY CORIDEN, WHO WAS DEPUTY DIRECTOR OF THE STAFF OF THE CSCE COMMISSION. THE BONN MEETING SET THE TIME AND PLACE FOR THE FORUM, ESTABLISHED THE AGENDA, AND MADE OTHER ORGANIZATIONAL ARRANGEMENTS FOR THE FORUM. CSCE WORKS BY CONSENSUS -- THAT IS, UNANIMOUS CONSENT, AND ALL OF THESE ARRANGEMENTS HAD TO BE ACCEPTABLE TO ALL 35 PARTICIPATING STATES.

THE FORUM WILL CONVENE IN HAMBURG ON FEBRUARY 18 AND WILL LAST FOR TWO WEEKS. THE SPECIFIC SCIENTIFIC FIELDS TO BE DISCUSSED HAVE BEEN NARROWED TO INCLUDE ENERGY RESOURCES, FOOD PRODUCTION, MEDICINE, URBAN DEVELOPMENT, AND THE ENVIRONMENT. THE FORUM MAY, BUT IS NOT REQUIRED TO, PRODUCE RECOMMENDATIONS TO PARTICIPATING GOVERNMENTS AND THE MADRID CSCE FOLLOW-UP MEETING. THE MEETING HAS NO POWER TO MAKE DECISIONS OR TO COMMIT THE UNITED STATES GOVERNMENT.

KEEPING IN MIND THAT THE FORUM IS MEANT TO BE A GATHERING OF LEADING SCIENTISTS, NOT OF GOVERNMENTS, WE HAVE ENDEAVORED TO SEND A DELEGATION TO THE FORUM WHICH WOULD BE BOTH EXPERT IN THE SPECIFIC SCIENTIFIC FIELDS ON THE AGENDA AND REPRESENTATIVE OF THE VIEWS OF THE AMERICAN SCIENTIFIC COMMUNITY. DR. PHILIP HANDLER, THE PRESIDENT OF THE NATIONAL ACADEMY OF SCIENCES, WAS CHOSEN TO LEAD THE DELEGATION AND ASKED TO NOMINATE A SUITABLE SLATE OF DELEGATES.

WITH ADVICE FROM INTERESTED PRIVATE ORGANIZATIONS, HE HAS DONE A MAGNIFICENT JOB, AND I AM SURE THE UNITED STATES WILL BE REPRESENTED MOST ABLY AT HAMBURG. THE DELEGATION INCLUDES TWO WINNERS OF THE NOBEL PRIZE, DR. CHRISTIAN ANFINSEN AND DR. PAUL FLORY, WHO ARE FAMILIAR WITH THE CONFERENCE ON SECURITY AND COOPERATION IN EUROPE FROM THEIR WORK ON THE HELSINKI WATCH COMMITTEE IN NEW YORK. THE SCIENTISTS ON THE DELEGATION WILL BE ACCOMPANIED BY THREE CSCE EXPERTS, TWO FROM THE DEPARTMENT OF STATE AND ONE FROM THE STAFF OF THE CSCE COMMISSION.

WE BELIEVE THE VALUE OF THE FORUM LIES IN THE OPPORTUNITY IT PROVIDES FOR LEADING SCIENTISTS TO EXCHANGE VIEWS WITH EACH OTHER DIRECTLY. THERE WILL BE SOME VALUE IN DISCUSSION OF THE PURELY SCIENTIFIC SUBJECTS ON THE AGENDA, BUT THIS IS A CSCE MEETING AS WELL AS A SCIENTIFIC MEETING. IT SHARES IN THE SPIRIT OF THE FINAL ACT AND IN THE CONVICTION THAT REAL PEACE AND SECURITY AS WELL AS FRUITFUL COOPERATION IN ALL FIELDS MUST ULTIMATELY REST ON THE STRONG FOUNDATION OF RESPECT FOR HUMAN RIGHTS. THIS IS THE MEANING OF THE SECOND PART OF THE MANDATE -- THE EXPANSION OF CONTACTS, COMMUNICATION, AND THE EXCHANGE OF INFORMATION AMONG SCIENTISTS AND SCIENTIFIC INSTITUTIONS. FREER SCIENTIFIC INTERCHANGE WOULD BE OF ENORMOUS BENEFIT TO ALL MANKIND, AND NOT ONLY THE 35 STATES PARTICIPATING IN THE MEETING.

IT WILL BE IMPORTANT TO CONSIDER THE BARRIERS TO SUCH FREE INTERCHANGE. HANGING OVER THE WHOLE MEETING WILL BE THE QUESTION OF THE EFFECT OF SOVIET AGGRESSION IN AFGHANISTAN ON INTERNATIONAL RELATIONS AND INTERNATIONAL SCIENTIFIC COOPERATION. AS MY COLLEAGUES HAVE INDICATED, RECENT SOVIET ACTIONS HAVE MADE IMPOSSIBLE ANY EXPANSION OF SCIENTIFIC COOPERATION WITH THE SOVIET UNION FOR THE FORESEEABLE FUTURE.

THE SCIENTIFIC FORUM IS AN IMPORTANT PART OF THE CSCE PROCESS, WHICH IS MOVING, UNEVENLY I GRANT, TOWARD FULL IMPLEMENTATION OF THE COMMITMENTS IN THE FINAL ACT. IT WILL NOT BY ITSELF SOLVE THE MANY PROBLEMS IMPEDING SCIENTIFIC COOPERATION AT THE PRESENT TIME. BUT NEITHER WILL IT OVERLOOK THE FAILURE OF CERTAIN GOVERNMENTS TO HONOR THE COMMITMENTS WHICH THEY MADE AT HELSINKI TO RESPECT NATIONAL SOVEREIGNTY AND HUMAN RIGHTS. BY PROVIDING THE OPPORTUNITY FOR AN INTERNATIONAL EXAMINATION OF SUCH ISSUES, WE BELIEVE THE SCIENTIFIC FORUM WILL SERVE A VERY USEFUL PURPOSE.

Mr. BROWN. Thank you very much, Mr. Goodby. If I may begin the questioning of the panel, we seem to be in a situation here where there is a rising tide of sentiment that this country needs to take a firm, a very firm but positive stand with regard to the actions of the Soviet Union over the past couple of months.

You gentlemen have indicated that this action by the Soviet Union comes at a time when the science exchanges, the benefits to our country and presumably to the Russians are actually increasing.

The administration's response has been a gradual deemphasis and restriction on the program. The question now develops as to whether this is a fully adequate response or whether some more, some stronger action might be required at this time.

So, let me pose the question to each of the panelists as to whether you think that this policy of a gradual winding down as an indication of our feelings or dissatisfaction with the Soviet action is the response that is adequate to the situation and that is likely to result in any change in the Soviet posture.

I am cognizant of the fact that we are looking at one narrow aspect of the whole spectrum of relationships with the Soviet Union on which I am not well versed. We are looking only at the science exchange.

But, it seems to me that this may be a very significant part of the whole pattern of relationships and it may set a pattern or at least, will be a part of a much broader pattern which will develop in response to the conditions that exist.

What comments do you have with regard to that?

Dr. PRESS. Shall I start, Mr. Chairman?

Mr. BROWN. Yes.

Dr. PRESS. The President has taken a number of steps in response to these Soviet actions. The grain shipments have been stopped. Consulates that were to be opened, this has been suspended. The suspension of shipments of advanced technological products has taken place. Suspension of new licenses in this area has occurred.

Fishing rights have been curtailed. Civil aviation access has been cut back. Science and technological programs we are talking about today have been significantly reduced. I wouldn't call this a gradual cutback at all.

High-level official contacts have been stopped entirely. The working groups which implement these agreements have been substantially reduced. In fact, the case has to be made with respect to individual working groups that their contact with the Soviets can be justified on humanitarian grounds or because of some special important interest of the United States.

I am referring in all of these things to official contacts or contacts sponsored by the U.S. Government. I think in your statement, in your own point of view, we don't want to inhibit individual contacts, private contacts by American citizens with the Soviets, or for that matter, with any country, except for very special circumstances.

I think the program that we are proposing in response to the Soviet actions send a very significant message to them. They cannot engage in this kind of international illegal activity in violation of the Helsinki agreements and in violation of international standards without

incurring costs. I think these costs that we are imposing on them are significant.

Mr. BROWN. Do you have anything further to add to that?

Mr. PICKERING. I think Frank has outlined very well both what we are doing in general. We might add the deferral of consideration of the SALT treaty to the list that he talked about and some actions we have taken or are contemplating taking with our allies, a condemnation of the Soviet Union in the Security Council being one, and the action that the President has indicated he's prepared to take on the summer Olympic games.

The standards by which we judge the ongoing science programs are the standards of humanitarian and scientific benefit, principally to our investigators. The notion is that we have a number of investigators already engaged in projects which, if cut off, will be doing harm to ourselves rather than punishing in any way the Soviet Union.

And, the necessity is to keep the framework for future cooperation open because it has taken a long time to build that framework. Should it be desirable, we believe that the avenues to the exchanges should not be so shut down that it will take years to rebuild, should that ever prove to be an option we would like to take.

Mr. BROWN. The actions that both of you have described were taken in response to the invasion of Afghanistan. The action with regard to Sakharov seems to be of considerably more interest to the scientific community. Has that aspect of the matter entered into the continuing consideration of the administration with regard to the actions to be taken?

Dr. PRESS. The list of actions we have just described are not complete lists. We are considering other actions. Now that the Sakharov affair has entered our consciousness, that will play an important role in our future decisions.

Beyond that, the Sakharov issue raises a question of conscience for scientists throughout the world, which is likely to have a strong effect.

Mr. BROWN. Mr. Fascell?

Mr. FASCELL. I would like to defer my comments. Ms. Derian has some comments.

Mr. BROWN. Ms. Derian?

Ms. DERIAN. Mr. Chairman, I would prefer to let Mr. Fascell continue.

Mr. BROWN. Mr. Fascell?

Mr. FASCELL. OK. Thank you, Mr. Chairman. This delegation is going as a nongovernmental delegation and I am assuming because you gentlemen are here that there is close cooperation between the administration and the delegation, without necessarily official instruction. Am I correct?

Mr. GOODBY. Yes; it is, Mr. Chairman. We have been in communication with them and indeed, we are meeting with the delegation as a whole on Saturday for quite lengthy discussions.

Mr. FASCELL. So it will be more in the nature of an exchange of ideas as far as the Government and the delegation are concerned. It may be a little informal advice about scientific matters and then, it will be up to the delegation to determine how they will proceed from there. Is that it?

Mr. GOODBY. Mr. Chairman, you have it exactly right. Those of us who are there will give our opinions and advice and hope for the best.

Mr. FASCELL. It seems to me that given the circumstances that now exist, human nature being what it is, being fully aware of the deep feelings of sensitivity and awareness of the scientists in our country, that it will be almost impossible, I would hope, to keep out of the discussions—formal, informal, or otherwise—all the questions which are making the front pages today, whether it's Sakharov or Afghanistan or general attitudes or continuation of exchanges or anything else.

Do you see any reason, any of you, on behalf of the administration, why there should be any reservation or hesitation on the part of individuals or the delegation as a group to raise these issues, either together or singly, formally, informally, directly, indirectly, or any other way?

Mr. GOODBY. Mr. Chairman, I think in my opening remarks, I suggested that's exactly what they should do.

Mr. FASCELL. Well, I'm sorry I was not here to hear you make that statement. I'm delighted to be here now to hear you reaffirm it.

Certainly from the standpoint of the Commission and I'm sure many Members of Congress, that is exactly the kind of cooperation and response we are hoping for and expecting. I'm delighted to hear it.

What about the other delegations coming from some of the other signatory countries? Are there delegations as really relatively independent as the U.S. delegation?

Mr. GOODBY. Mr. Chairman, they all are from the Western countries, I would say, are relatively independent. They are people that, for example, the president of the Royal Society in England—

Mr. FASCELL. In other words, science is first and foremost in their minds?

Mr. GOODBY. That is right.

Mr. FASCELL. They are not stupid. They are not going to divorce themselves from politics entirely.

Mr. GOODBY. I assume that will be the case.

Mr. FASCELL. What do you think the reaction will be from our allies if all of these issues or even, let's say, a specific case like Andrei Sakharov is raised? What is your assessment of our allies' reaction?

Mr. GOODBY. Mr. Chairman, my impression is that many of the allies will also raise this. I have already some indications through my own channels that that is very likely to happen.

Mr. FASCELL. The scientific community is more or less united on this?

Mr. GOODBY. I believe so.

Mr. FASCELL. It seems to be.

Mr. GOODBY. Yes.

Mr. FASCELL. What is your assessment, if any, on the Soviet-Eastern block reaction to this whole question? What do you think they are going to do coming in there—how are they going to come to this conference? Are they going to try to bluff it through that they are really great scientists?

Mr. GOODBY. Mr. Chairman, perhaps my colleagues want to comment on that. I would be, I think, a little cautious about predicting at this time.

Mr. FASCELL. I know. But, we are not looking for a prediction of actions as such as much as a general assessment of human nature—colleague to colleague, for example.

It's very hard for me to conceive of this, but it seems to me it would be very embarrassing. And yet, I know it won't be difficult for a lot of scientists coming from the Soviet Union and Eastern bloc countries not even to worry about the Sakharov case, or any other case, for that matter, or even the invasion of Afghanistan.

Dr. PRESS. Mr. Chairman, I think it's dangerous to predict, but I wouldn't be surprised if the other side doesn't propose that this is a purely scientific meeting and that the Sakharov and the Afghanistan matters are of no concern to them.

Mr. FASCELL. They have been saying that as an excuse to avoid the harsh realities of life ever since Helsinki dreamed up noninterference in internal affairs. Well, I guess it will be more of the same.

The only reason I have asked these questions is because I have not been aware of a substantive international forum in which the Soviets and the Eastern bloc countries have been involved that fundamentally and principally did not turn on political issues rather than substantive issues.

I'm candid enough to think that scientific fora wouldn't be much different, and probably haven't been. I just haven't been as close to the scientific international community as you have and don't know.

But all the other meetings I've been reasonably close to over 25 years have always turned on political aspects of the issue rather than the substantive ones. The substantive one is bad enough in terms of trying to resolve matters in some of our conferences.

But, I'm certainly—I have no doubts or reservations in my own mind about the capability of our scientific community to deal with political issues. I don't think they are all cloistered, ivory tower idiots.

The other question that I want to ask you is a general kind of a thought. For some reason, it's been claimed that we have a monopoly on brains and science and technology in this country and if we cut off technology to the Soviet Union, it will hurt them and might force them to make political decisions that they otherwise might not have liked to consider, such as not invading a country or being the front man in a war of national liberation or some other things.

Is there any real substance to the fact that the Soviets are so starved for science and technology that they have got to import it and that they will trade on that?

Dr. PRESS. Mr. Chairman, that's a good question. I think you should ask that of each of the witnesses that follow. I would like to give you my answer, but you should compare it with those others.

Mr. FASCELL. I would be glad to hear your answer because certainly, the Government as such in fact has inferred that this is the case.

Dr. PRESS. Let me say this: I hope that most scientists are not so naive to think that their contacts with their Soviet counterparts represent a vehicle for influencing high-level Soviet decisions, decisions in the Politburo, decisions with respect to such things as Afghanistan or Sakharov, because that's patently not true.

On the other hand, these cooperative agreements have yielded practical results. That's why we pursue them. We are now getting things out of the Soviets in the realm of technology exchange that are useful to us.

There are a number of cases where our scientists informally expressing their strong views on Soviet actions have produced definite changes, instances with respect to individuals, instances with respect to the kind of Soviet scientists that are now sent abroad whereas previously, we only saw more of the bureaucratic officials.

We are now beginning to see active scientists, younger ones, Jewish ones. We haven't seen that before. I think that's a direct result of the pressure placed on Soviet scientists by American scientists. It's true that because we have an open society, the Soviets can learn a great deal of our technology simply by reading our journals, whereas these cooperative agreements represent perhaps the only window we have on Soviet technology.

Mr. FASCELL. It maybe has been a rather small window.

Dr. PRESS. But, it's improving. However, individual contacts represent a more efficient means of finding out what's happening in science than in reading the journals. So it is of value to the Soviets to continue these cooperative agreements and that's why they are so eager to do so.

Mr. FASCELL. That's all I have.

Mr. BROWN. I would like to acknowledge that the distinguished chairman of the Foreign Affairs Committee has joined us and I would like to ask at this time if he has any statement to make or any questions to ask.

Mr. ZABLOCKI. No, thank you, Mr. Chairman, I apologize that I had other commitments. I will wait for my turn later.

Mr. BROWN. Mr Hollenbeck?

Mr. HOLLENBECK. Mr. Chairman, I have one brief question.

Mr. PICKERING, in your oral remarks, I understand you make reference to the fact that some nations—I think you referred to Canada—may be lessening the extent of their scientific and technical exchange with the Soviet Union. I wonder if you could just elaborate on that a bit and tell us what nations have that attitude, they have been doing in particular, and whether we can look to the rest of the world for cooperation and support in that regard.

Mr. PICKERING. Thank you, Mr. Hollenbeck.

I made clear in my statement that Canada, the United Kingdom, and Belgium have each indicated in public that they would be pursuing policies in consonance with our own. I don't have the exact details, but I will be glad to provide them for the record so you will know what the substance of their statements were.

But, their statements and their activities I believe have been very supportive of the same sorts of policies we are pursuing in this area. They involve a tightening and a restriction on high-level visits and that kind of thing with the Soviets in the area of exchanges and in particular, science and technology exchanges.

Mr. HOLLENBECK. I think that would be a valuable addition to the record, if you would do so.

Thank you, Mr. Chairman.

Mr. BROWN. Mr. Ritter?

Mr. RITTER. Thank you, Mr. Chairman.

I would like to return for a moment to this question of the broader goals that the Soviet Union might have to derive from the scientific forum and that is the contribution to the legitimacy of the Helsinki Accords themselves.

I guess I'd like to hear from each of you on whether you think, first, that the legitimacy of the Soviet Union is, indeed, a question at the scientific forum, whether you think the Soviet Union deserves to be legitimized by the Helsinki Accords and, third, whether or not we as scientists, or whether the Congress might try to do in some way to water down the impact of legitimizing the U.S.S.R. through the Helsinki Accords.

Mr. GOODBY. Dr. Ritter, perhaps I could begin with that one by suggesting that I think it's very important that we try to uphold the legitimacy of the principles and the undertakings that were achieved and reported in the Helsinki Final Act. These are standards toward which I think we ought to hold all countries and we ought to work toward more fulfillment of these quite legitimate goals.

Now, I think the word I would use in terms of what our attitude should be toward the Helsinki Final Act is that we want to point out where countries have, in fact, not been living up fully to these principles and undertakings and, in fact, where they have been flagrantly violating these. That, in my view, would be really one of the purposes to be achieved in Hamburg.

Mr. RITTER. Would that have any effect, in your view, on the future direction of Soviet policy?

Mr. GOODBY. It's hard to predict whether any one event is going to have an impact, but I think a repetition of these will have an impact. I would like to come back to one point the chairman made in his initial remarks which I thought was really very important; namely, that we are talking about 35 countries in the CSCE and it isn't just a question of the Soviet Union.

I think it would be important in terms of our relations with these other 33, if you will, including those in Eastern Europe, to maintain the kind of contacts and the kind of dialog that is encouraged by the CSCE Final Act.

Mr. RITTER. But, there are overriding considerations within the Helsinki Accords such as the setting of the postwar boundaries which have got to be far more important for the Soviet Union than meeting with a group of scientists. Perhaps if we had the courage to perhaps withdraw from legitimizing these boundaries themselves, since the very essence of the meaning of Helsinki to the Soviets is the legitimacy of those boundaries—maybe that would have some greater effect. Do we not further legitimize and go in the opposite direction by continuing these contacts when the very monitors of the agreement, the Moscow-Helsinki watch group, are now in prison? I understand now the number is up to 35.

Dr. GOODBY. Well, I would say, Dr. Ritter, that if we did not have the opportunity afforded us by having the Final Act plus the kind of review meetings that we are looking forward to at the end of this year in Madrid, we in fact would be depriving ourselves of a platform from which we can address ourselves to these kinds of outrages that we see from time to time.

So, I think we would really be the loser in this kind of a tradeoff you are suggesting. With regard to the legitimacy of the frontiers in central Europe, there have, of course, been other treaties that have been signed quite apart from the Final Act in which some countries have already stated that these are, indeed, the frontiers. I don't think

you would be taking away from that too much by backing away from the Final Act.

Dr. PRESS. Let me just speak to the issue of the scientific forum which really will be a world forum, participation of some 35 countries. It will be highly visible, highly covered. The major thrust of that forum as far as we are concerned is enhancing of scientific exchange as it's described in the Helsinki agreement.

One cannot enhance scientific exchange without allowing for freedom of communication, freedom of expression, freedom of travel, essentially, basically, without allowing for human rights.

It seems to me that this forum will be an ideal place to raise these issues that we have been talking about this afternoon with the Soviets and in that respect, with the entire world.

Mr. RITTER. Is there some rationale behind asking the Soviets to release the Helsinki watch group as a precondition for attending this conference on the part of Western scientists of conscience from all of these, or as many as possible, from these 35 countries?

Dr. PRESS. If you look at our delegation, you will see represented on it people who have aggressively pursued these ideas, including people who have worked with the Helsinki watch group and are members of it. And, for that reason, I think that since we have mounted a very strong delegation which will not be timid in expressing these views, I think we should go forward with our participation.

Mr. RITTER. Thank you, Dr. Press. Dr. Pickering?

Dr. PICKERING. My two colleagues have expressed the thoughts that I would have. I have nothing further to add at this time.

Mr. RITTER. Thank you.

Mr. BROWN. Chairman Zablocki, do you have any questions?

Mr. ZABLOCKI. Yes. Thank you, Mr. Chairman. Again, I apologize for being late.

However, I have listened to your prepared statement, Dr. Press, and your subsequent responses to the questions of our colleague and chairman of the committee which will jointly host the meetings in Hamburg, the European Security Commission.

You stated that younger scientists including Jewish scientists had recently been allowed to participate in direct long-term exchanges between the National Academy of Sciences and the Academy of Sciences of the U.S.S.R. Do you anticipate, in view of the fact that Dr. Sakharov and Dr. Turchin's dismissal, that the composition of the Soviet scientists in the upcoming meeting will comply with what you have been advising us has been true earlier, namely that Jewish scientists and nonpolitical scientists will be participating?

Do you have the list of the Soviet delegates?

Dr. PRESS. Mr. Chairman, what I was referring to were the kinds of scientists that the Soviets were sending to this country to implement the cooperative agreement we have with them. The working level scientist, the experts who are doing joint research together who are having extensive seminars together.

I don't think they will send that kind of delegation to the scientific forum in Hamburg.

Mr. ZABLOCKI. You then expect that the Soviet delegation to that conference will be hardliners, political selectees?

Dr. PICKERING. The chairmanship of the Soviet delegation, as far as we know, is Mr. Zherman Gvishiani who is the vice director of the state committee on science and technology. I would suspect that the Soviet delegation will be political and tough.

Mr. ZABLOCKI. And you still maintain that this warrants our participation because we will gain something from this conference?

Dr. PICKERING. Yes; I believe very much it does. I believe we have here a unique opportunity before 35 nations with a number of like minded states to bring forth to the Soviet Union in a very direct way how we feel exactly about what's been done in both Afghanistan and with Sakharov.

Mr. ZABLOCKI. As some of my colleagues will agree, as we have met with Soviet parliamentarians before they seem to be carefully selected, hardliners and they are generally reluctant to deviate from the party line, and make it quite difficult to discuss even matters of so called common interest.

We deal with them as legislators and they are people who don't deviate one iota from the line that they are told to present. May I ask Dr. Pickering, what are the parameters of the conference? For example, will the Law of the Sea be included?

Dr. PICKERING. I don't believe the Law of the Sea will be discussed there, Mr. Chairman.

Mr. ZABLOCKI. Are there parameters as to what will be discussed?

Dr. PICKERING. Yes; I'd like to ask Mr. Goodby, perhaps, whose expertise this is, to talk about this.

Mr. ZABLOCKI. Mr. Chairman, perhaps to save time, if there is no objection, the list can be inserted into the record.

[The list follows:]

REPORT

OF THE MEETING OF EXPERTS REPRESENTING THE PARTICIPATING STATES OF THE CONFERENCE ON SECURITY AND CO-OPERATION IN EUROPE AND THEIR NATIONAL SCIENTIFIC INSTITUTIONS, FORESEEN BY THE FINAL ACT OF THE CSCE AND THE CONCLUDING DOCUMENT OF THE BELGRADE MEETING 1977 TO PREPARE THE "SCIENTIFIC FORUM"

In accordance with the provisions of the Final Act of the Conference on Security and Co-operation in Europe and of the Concluding Document of the Belgrade Meeting 1977, the meeting of experts representing the participating States and their national scientific institutions, foreseen by the Final Act, took place in Bonn, upon the invitation of the Government of the Federal Republic of Germany, from 20 June to 28 July 1978 in order to prepare a "Scientific Forum".

During the opening session of the meeting the participants were welcomed by Dr. Hildegard Hamm-Brücher, Minister of State, Ministry of Foreign Affairs, on behalf of the Government of the Federal Republic of Germany.

During the first working session representatives of UNESCO and the United Nations Economic Commission for Europe stated their views.

The meeting of experts drew up the following conclusions and recommendations concerning the date, place, duration, Agenda and other modalities of the "Scientific Forum":

The "Scientific Forum" will be held in conformity with the relevant provisions of the Final Act, in the form of a meeting of leading personalities in science from the participating States, in accordance with the intention of the participating States within their competence to broaden and improve co-operation and exchanges in the field of science and thus to continue the multilateral process initiated by the Conference on Security and Co-operation in Europe.

I. AGENDA

1. Formal opening of the "Scientific Forum";

Address by a representative of the host country;

Contributions by UNESCO and the United Nations Economic Commission for Europe;

Opening statements by representatives of delegations of the participating States.

2. Discussion of interrelated problems of common interest concerning current and future developments in science, and promotion of expansion of contacts, communications and the exchange of information between scientific institutions and among scientists.

In this context the following areas and subjects shall be considered:

– **Exact and Natural Sciences**

Scientific research, in particular fundamental research, in the fields of alternative energy sources and food production;

– **Medicine**

Current trends in medical research, in particular in basic research and primarily on cardiovascular, tumour and virus diseases, taking into consideration the influence of the changing environment on human health;

– **The Humanities and Social Sciences**

Comparative studies on social, socio-economic and cultural phenomena, especially the problems of human environment and urban development.

3. Closing statements by representatives of delegations of the participating States.
4. Formal closure of the "Scientific Forum".

II. ORGANIZATIONAL FRAMEWORK AND OTHER MODALITIES

1. The "Scientific Forum" will open on Monday, 18 February 1980 at 10 a. m. in Hamburg, Federal Republic of Germany. Its duration shall be of two weeks.
2. Agenda item 2 will be dealt with in the Plenary and in the appropriate subsidiary working bodies on, respectively, the exact and natural sciences, medicine and the humanities and social sciences. Other subsidiary bodies may be set up by the Plenary, which is the main body of the "Forum", to deal with specific questions.
3. Agenda items 1, 3 and 4 will be dealt with in open plenary meetings.
4. Invitations to UNESCO and the United Nations Economic Commission for Europe to make their contributions referred to in item 1 of the Agenda will be transmitted by the Executive Secretary.

The Plenary may decide to invite these Organizations to make additional contributions in the appropriate subsidiary working bodies.

5. The opening and closing statements indicated in items 1 and 3 of the Agenda may be made by representatives of delegations of the participating States if they desire to do so. The statements, as a rule, should not exceed 15 minutes per delegation.
6. Contributions pertaining to item 2 of the Agenda may be sent in through the proper channels – preferably not later than three months before the opening of the "Scientific Forum" – to the Executive Secretary, who will circulate them to the other participating States.

7. If the Plenary so decides, the "Forum" may, as a result of its proceedings, draw up recommendations, including such dealing with what further steps might in due course be taken by the participating States of the CSCE with respect to the "Scientific Forum".

The results of the "Forum" may be taken into account, as appropriate, by the participating States at the Madrid Meeting.

8. The Chair at the opening and closing plenary meetings shall be taken by a representative of the delegation of the Federal Republic of Germany. After the opening meeting the Chair shall be taken in daily rotation, in French alphabetical order, starting with a representative of the delegation of Bulgaria.

9. The Government of the Federal Republic of Germany will designate the Executive Secretary of the "Scientific Forum". This designation should be agreed to by the participating States. The services of a technical secretariat will be provided by the host country.

10. Other rules of procedure, working methods and the scale of distribution for the expenses of the CSCE will, *mutatis mutandis*, be applied to the "Scientific Forum".



In addressing itself to Agenda item 2 it is recommended that the "Scientific Forum" should bear in mind present relevant scientific knowledge and goals for future research as well as the present state and future needs of international scientific co-operation, including the education and training of young scientists, interdisciplinary approaches and the different levels of scientific development among participating States.

EXTRACT FROM JOURNAL NO. 29, DATED 28 JULY 1978

4. Decisions taken:

In accordance with item 6 of its Agenda, the drawing up of conclusions and recommendations of the Meeting of Experts, to be reported to the governments of the participating States, the Meeting adopted as its Decision No. 2 a Report of the Meeting of Experts representing the participating States of the Conference on Security and Co-operation in Europe and their national scientific institutions, foreseen by the Final Act of the CSCE and the Concluding Document of the Belgrade Meeting 1977 to prepare the "Scientific Forum".

5. Statements by the Chairman:

— concerning item 1 of the Organizational Framework and other modalities:

The Executive Secretary should be informed well in advance about the size of each delegation, in order to assure necessary technical facilities for the "Forum".

- concerning item 2 of the Organizational Framework and other modalities:

In organizing the work of the "Forum", the Plenary should, after completion of item 1 of the Agenda, allocate adequate time for the work in the appropriate subsidiary working bodies as well as for the accomplishing of its own functions.

- concerning item 6 of the Organizational Framework and other modalities:

The contributions pertaining to item 2 of the Agenda should be in one of the working languages of the CSCE; it is also recommended that these contributions be submitted, where possible, in more than one working language.

The Chairman noted that his statements met with no objection.

Mr. BROWN. Yes.

Mr. ZABLOCKI. I note we have a rollcall, Mr. Chairman. I will not ask any other questions.

Mr. BROWN. Thank you very much, Mr. Zablocki.

Mr. GOODBY. Mr. Chairman, for the record, I will submit the agenda for the meetings which will answer your question, sir.

Mr. BROWN. Let me just ask if Mr. Scheuer has any questions at this point.

Mr. SCHEUER. No; Mr. Chairman.

Mr. BROWN. Gentlemen, we very much appreciate your patience with the committee and the statements that you have made. We will excuse you at this time and will be in touch with you further, I'm sure, later on.

STATEMENTS OF A PANEL CONSISTING OF DR. PHILIP HANDLER, PRESIDENT, NATIONAL ACADEMY OF SCIENCES; DR. DUANE C. ACKER, PRESIDENT, KANSAS STATE UNIVERSITY OF AGRICULTURE AND APPLIED SCIENCE; DR. PAUL J. FLORY, NOBEL LAUREATE, DEPARTMENT OF CHEMISTRY, STANFORD UNIVERSITY

Mr. BROWN. I'd like to ask the next panel to come forward, if they would. Dr. Philip Handler, Dr. Paul Flory, and Dr. Duane Acker. Again, Secretary Derian will take over while we go vote. Secretary Derian?

Ms. DERIAN. Dr. Philip Handler is President of the National Academy of Sciences. A biochemist who taught at Duke University for 30 years, Dr. Handler is chairman of the U.S. delegation to the scientific forum. He has received worldwide recognition and numerous awards for his outstanding work as a scientist, educator, public servant, and humanitarian. Dr. Handler?

Dr. HANDLER. Thank you very much, Madam Secretary. I am very pleased to be here to testify on two topics that are of very substantial interest to the American scientific community.

The question of the nature and conduct of scientific relations with the Soviet Union in the post-Afghanistan, post-Sakharov period is important, perplexing, and complicated.

The posture we have adopted with respect to the CSCE-sponsored scientific forum in Hamburg is that it presents an opportunity to raise fundamental issues with Soviet counterparts and with the representatives of 33 other countries. There must be no mistake that I will lead a delegation to discuss business as usual.

I was in China with Frank Press and Tom Pickering negotiating on behalf of our Academy a memorandum of understanding on exchanges with the Chinese Academy of Sciences when I heard the news about Academician Sakharov; it came as a rude shock, and a grim reminder.

There has been reason to believe that our intervention, a copy of which I will submit for the record, in 1978 when first Sakharov was officially threatened, was taken seriously and afforded him some small measure of protection.

This episode was reported in some detail by Hedrick Smith in his book, "The Russians." For the record, I will supply copies of our brief cable and the full statement that I sent to the U.S.S.R. at that time.

In the years since, we have waited to see if the Soviet authorities could tolerate a modest degree of internal opposition. Now we know they cannot.

[The documents referred to are as follows:]

CABLE

September 8, 1973

ACADEMICIAN M. V. KELDYSH
PRESIDENT
NAUKA
MOSCOW, USSR

I HAVE BEEN ASKED TO REPORT TO YOU BOTH PRIVATELY AND PUBLICLY THE CONCERN OF THE COUNCIL OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES FOR THE WELFARE OF NAS FOREIGN ASSOCIATE MEMBER ANDREI SAKHAROV WHOSE POLITICAL AND SOCIAL VIEWS HAVE BEEN EXPRESSED IN THE SPIRIT OF FREE SCHOLARLY INQUIRY, WHICH IS AN ESSENTIAL ELEMENT OF SCIENTIFIC PROGRESS. HARASSMENT OR DETENTION OF SAKHAROV WILL HAVE SEVERE EFFECTS UPON THE RELATIONSHIPS BETWEEN THE SCIENTIFIC COMMUNITIES OF THE U.S. AND THE U.S.S.R. AND COULD VITIATE OUR RECENT EFFORTS TOWARD INCREASING SCIENTIFIC INTERCHANGE AND COOPERATION. MORE DETAILED MESSAGE FOLLOWS.

PHILIP HANDLER, PRESIDENT
NATIONAL ACADEMY OF SCIENCES

CABLE

September 8, 1973

ACADEMICIAN M. V. KELDYSH
PRESIDENT
NAUKA
MOSCOW, U.S.S.R.

THIS WILL CONVEY TO THE ACADEMY OF SCIENCES OF THE U.S.S.R. THE DEEP CONCERN OF THE COUNCIL OF THE NATIONAL ACADEMY OF SCIENCES OF THE U.S.A. FOR THE WELFARE OF OUR FOREIGN ASSOCIATE MEMBER, ACADEMICIAN ANDREI SAKHAROV.

WE HAVE WARMLY SUPPORTED THE GROWING DETENTE BEING ESTABLISHED BY OUR RESPECTIVE GOVERNMENTS. WE HAVE DONE SO IN THE BELIEF THAT SUCH A COURSE WOULD BRING SIGNIFICANT SOCIAL AND ECONOMIC BENEFITS TO OUR PEOPLES AND GENERATE OPPORTUNITY FOR ALLEVIATION OF THAT DIVISION OF MANKIND WHICH THREATENS ITS DESTRUCTION BY NUCLEAR HOLOCAUST. WE WERE HEARTENED BY THE FACT THAT THE VARIOUS AGREEMENTS SIGNED BY OUR POLITICAL LEADERS IN MOSCOW IN 1972 AND IN WASHINGTON IN 1973 GAVE SO PROMINENT A ROLE TO COOPERATION IN SCIENTIFIC ENDEAVORS. WE JOYFULLY EXTENDED THOSE INTERGOVERNMENTAL AGREEMENTS BY THE SIGNATURE, IN 1972 AND AGAIN IN 1973, OF PROTOCOLS PLEDGING THE MUTUAL COOPERATION OF OUR RESPECTIVE ACADEMIES IN SPECIFIC APPROPRIATE SCIENTIFIC AREAS.

IMPLICIT IN THIS PROMINENCE OF SCIENTIFIC COOPERATION IN OUR RECENT BINATIONAL AGREEMENTS WAS: (1) THE RECOGNITION

THAT SCIENCE, ITSELF, KNOWS NO NATIONAL BOUNDARIES; (2) THE AWARENESS THAT THE WORLD SCIENTIFIC COMMUNITY SHARES A COMMON ETHIC, A COMMON VALUE SYSTEM AND, HENCE, IS INTERNATIONAL; (3) APPRECIATION THAT MANKIND, THE WORLD OVER, DERIVES DEEP SATISFACTION FROM OUR EVER MORE PROFOUND UNDERSTANDING OF THE NATURE OF MAN AND THE UNIVERSE IN WHICH HE FINDS HIMSELF. SO TRUE AND IMPORTANT ARE THESE RELATIONSHIPS THAT THE NATIONAL SCIENTIFIC COMMUNITIES OF THE WORLD ALSO SHARE HEROES; WITNESS THE ROSTERS OF FOREIGN MEMBERS OF ACADEMIES OF SCIENCE, INCLUDING YOURS AND OURS.

BUT NEITHER YOUR COUNTRY NOR OURS SUSTAINS ITS LARGE SCIENTIFIC ENTERPRISE "FOR SCIENCE'S OWN SAKE." WE ALSO SHARE A FAITH IN THE CONTINUING TRUTH OF THE HISTORICALLY DEMONSTRATED FACT THAT THE WISE, HUMANE APPLICATION OF SCIENTIFIC UNDERSTANDING CONSTITUTES THE MOST POWERFUL MEANS AVAILABLE TO OUR SOCIETIES TO IMPROVE THE CONDITION OF MAN.

UNHAPPILY, AS SAKHAROV AND OTHERS HAVE NOTED, APPLICATION OF SCIENTIFIC UNDERSTANDING HAS ALSO GENERATED THE MEANS FOR DELIBERATE ANNIHILATION OF HUMAN BEINGS ON AN UNPRECEDENTED SCALE. THE INDUSTRIALIZATION PROCESS MADE POSSIBLE BY SCIENCE CAN, IF UNREGULATED, OCCASION UNWITTING DAMAGE TO MAN AND THE FLORA AND FAUNA WITH WHICH WE SHARE THE PLANET. INDEED, BY REDUCING DEATH RATES MORE SUCCESSFULLY THAN INCREASING AGRICULTURAL PRODUCTIVITY, APPLICATION OF SCIENCE MAY EVEN HAVE CREATED THE POSSIBILITY OF MALNUTRITION AND FAMINE ON A HUGE SCALE.

IF THE BENEFITS OF SCIENCE ARE TO BE REALIZED, IF THE DANGERS NOW RECOGNIZED ARE TO BE AVERTED, AND IF THE FULL LIFE WHICH CAN BE MADE POSSIBLE BY SCIENCE IS TO BE WORTH LIVING, THEN, IN THE WORDS OF ACADEMICIAN SAKHAROV, "INTELLECTUAL FREEDOM IS ESSENTIAL TO HUMAN SOCIETY-- FREEDOM TO OBTAIN AND DISTRIBUTE INFORMATION, FREEDOM FOR OPEN MINDED AND UNFEARING DEBATE, AND FREEDOM FROM PRESSURE BY OFFICIALDOM AND PREJUDICE." SCIENTISTS WILL RECOGNIZE THIS DESCRIPTION OF A VITAL, FUNCTIONING SOCIETY AS A RESTATEMENT OF THE ETHOS OF SCIENCE ITSELF. VIOLATION OF THAT ETHOS DURING THE PERIOD OF LYSENKOISM DEPRIVED THE SOVIET UNION AND THE WORLD OF THE FULL POTENTIAL OF THE SCIENTIFIC GENIUS OF THE RUSSIAN PEOPLE.

ACCORDINGLY, IT IS WITH GREAT DISMAY THAT WE HAVE LEARNED OF THE HEIGHTENING CAMPAIGN OF CONDEMNATION OF SAKHAROV FOR HAVING EXPRESSED, IN A SPIRIT OF FREE SCHOLARLY INQUIRY, SOCIAL AND POLITICAL VIEWS WHICH DERIVE FROM HIS SCIENTIFIC UNDERSTANDING. MOREOVER, IT WAS WITH CONSTERNATION AND A SENSE OF SHAME THAT WE LEARNED OF THE EXPRESSION OF CENSURE OF SAKHAROV'S CONTRIBUTIONS TO THE CAUSE OF CONTINUING HUMAN PROGRESS THAT WAS SIGNED BY 40 MEMBERS OF YOUR ACADEMY INCLUDING FIVE OF OUR FOREIGN ASSOCIATE MEMBERS. THIS ATTACK REVIVES MEMORIES OF THE FAILURE OF OUR OWN SCIENTIFIC COMMUNITY TO PROTECT THE LATE J. R. OPPENHEIMER FROM POLITICAL ATTACK. THE CASE OF ANDREI SAKHAROV, HOWEVER, IS FAR MORE

PAINFUL FOR THE FACT THAT SOME OF OUR SOVIET COLLEAGUES AND FELLOW SCIENTISTS ARE AMONG THE PRINCIPAL ATTACKERS WHEN ONE OF THE SCIENTIFIC COMMUNITY COURAGEOUSLY DEFENDS THE APPLICATION OF THE SCIENTIFIC ETHOS TO HUMAN AFFAIRS.

WERE SAKHAROV TO BE DEPRIVED OF HIS OPPORTUNITY TO SERVE THE SOVIET PEOPLE AND HUMANITY, IT WOULD BE EXTREMELY DIFFICULT TO IMAGINE SUCCESSFUL FULFILLMENT OF AMERICAN PLEDGES OF BINATIONAL SCIENTIFIC COOPERATION, THE IMPLEMENTATION OF WHICH IS ENTIRELY DEPENDENT UPON THE VOLUNTARY EFFORT AND GOODWILL OF OUR INDIVIDUAL SCIENTISTS AND SCIENTIFIC INSTITUTIONS. IT WOULD BE CALAMITOUS INDEED IF THE SPIRIT OF DETENTE WERE TO BE DAMAGED BY ANY FURTHER ACTION TAKEN AGAINST THIS GIFTED PHYSICIST WHO HAS CONTRIBUTED SO MUCH TO THE MILITARY SECURITY OF THE SOVIET PEOPLE AND WHO NOW OFFERS HIS WISDOM AND INSIGHTS TO THAT PEOPLE AND TO THE ENTIRE WORLD IN THE INTEREST OF A BETTER TOMORROW FOR ALL MANKIND.

PHILIP HANDLER, PRESIDENT
NATIONAL ACADEMY OF SCIENCES

Dr. HANDLER. The Sakharov exile is thus a powerful signal to the scientific community, as the invasion of Afghanistan is to the political-military community. Of these two, the Soviet invasion of Afghanistan is clearly the event of transcending global importance.

The fate of Sakharov, so soon after Afghanistan, is important particularly because it means that voices of moderation within the U.S.S.R., voices that might urge reconsideration of the Afghanistan adventure, will be given no audience.

We have all observed the implacable intransigency of Soviet officialdom for years, and have all been aware of their repression of intellectuals, scientists, and artists. We had hoped that this intransigency and repression would be ameliorated by one or another force or event. It is now clear that we hoped in vain.

At this point, it is important to recall that Academician Sakharov is a truly great physicist; he not only was the father of the Soviet hydrogen bomb, but also—with Tamm—the scientist who pointed out that to accomplish contained fusion, the hot plasma must be contained magnetically, not electrostatically—as the Soviets were then attempting—thus leading to their successful design of the tokomak.

Moreover, it was his contributions to theoretical physics that led to our electing him a foreign associate of our academy.

However, the world generally is more familiar with his eloquent writings—on the pathway to peace and on the need for certain reforms in Soviet society and Government, as well as his defense of the rights of diverse individuals threatened or imprisoned by Soviet authorities.

There is little doubt that it was his standing as a physicist that protected him as he publicly took such actions, and there is a substantial community in the U.S.S.R. which regards him as virtually a living saint.

Yet, at this time, the Soviet Government found it necessary so to confine him as to deny him contact with the scientific, intellectual, and political communities. We have read their careless accusations that he conveyed state secrets to the West, particularly to this Government.

I simply do not believe it. Sakharov has been, withal, a patriotic Russian, truly a member of the loyal opposition. Up until now, he has been unwilling to accept invitations to the West out of concern that he would not be allowed to return.

Whatever the Soviet authorities do to Sakharov, it is not a blow to the United States, but a blow to their own intellectuals; a clear signal that the brute forces that manage Soviet affairs will not—and cannot—tolerate independent thought and speech.

What do these events mean? What are the prospects for continued international scientific cooperation with the Soviet Union? What philosophy should now guide us?

It is part of the conventional wisdom of my trade that science is international—that knowledge is nonpolitical. But we know that this is true only as long as we make it so, for it is entirely obvious that knowledge—basic discoveries in science, and new ways to apply technology—may be deliberately withheld from free international dissemination when it serves commercial or national security interests to do so.

When J. Robert Oppenheimer said of those who collaborated to build nuclear weapons:

In some sort of crude sense which no vulgarity, no humor, no overstatement can quite extinguish, the physicists have known sin; and this is a knowledge they cannot lose.

He was reflecting not only on the atomic bomb, but on the seductive aspect of discoveries-yet-to-be-made and machines-yet-to-be-built, and on the fact that men would discover and build without reference to the purposes to which the discoveries or machines might ultimately be put. While he recognized the technological imperative that that which can be done will be done, he found it no reason to halt the growth of scientific understanding. Nor do we.

Today, the scientific community is awakening to the loss of another type of innocence. We, and many individual Soviet scientists, have worked desperately hard to educate political leaders of both countries to the absolute horror of nuclear war.

We and people like academician Sakharov have spoken out about the importance of scholarly freedom solidly grounded in the observance of basic human rights. And now we discover once again the truth which the poets and philosophers always knew—how vain have been our treasured hopes that the power of reason and the spirit of good will had already overcome mankind's darker instincts.

I cannot predict the future course of our scientific and technical relations with the U.S.S.R. As I said 8 days ago in a statement made from Peking: "I find it difficult to imagine scientific exchange continuing in the spirit we had created heretofore."

Each major episode in which the Soviet Government has deprived some scientist of his human rights has resulted in a shower of letters to the Academy, urging that we terminate our exchange program.

We have considered that unwise because we believe it essential to keep these windows open. Sakharov's exile has already generated a new surge of similar mail. But there also remain strong voices within the community insisting that we sustain the lines of communication and stressing the importance of continued interchange at the strategic level. I would listen to both sets of voices.

In terms of direct scientific exchange, we should note the asymmetrical character of our purely scientific relations with the Soviets. On our side, the relationships are carried on by volunteers, scientists who elect to travel there, or who agree to act as hosts for Soviet colleagues here.

On the Soviet side, only those who are officially approved are permitted to travel, and the Soviet hosts are ordered to receive whatever visitors the authorities designate as approved guests.

Thus, from our standpoint, the future of scientific exchange depends largely on the way individual American scientists perceive United States-Soviet relationships and then interpret their own roles. Neither the Congress nor the academy can make exchange programs happen.

Our modest exchange program with the Soviet Union—100 man months per year each way; that is, about 30 folks in each direction—has weathered the political ebbs and flows between the two countries for some 21 years.

When I was in Moscow in September, Academician Aleksandrov, President of the Soviet Academy, and I discussed ways to improve and expand the program and to make it more beneficial to both sides.

For example, we tentatively agreed to establish a bilateral working group to discuss new approaches to arms control and disarmament, and to joint planning of planetary exploration. I found President Aleksandrov to be an able, sympathetic leader of their academy.

I would like to be able to say that purely scientific exchange will continue because I believe it is in our national interest and the interest of humanity to adhere to the convention that science is international. I cannot believe there is any long-term benefit to reducing scientific behavior to simplistic political action and reaction. But I must confess that I am sorely pressed to find any justification for merely proceeding as usual.

It is my understanding that the Department of State has adopted a policy of postponing and deferring all high-level exchanges, and letting the working level individual exchanges proceed on a selective basis, taking into consideration particularly whether they are uniquely in the U.S. national interest or have humanitarian purposes. Mr. Pickering particularly described that policy for us a few minutes ago.

We agree with this policy; accordingly, we at the academy will defer all bilateral seminars and the like, while permitting the activities of individual scientists to proceed on our usual basis, leaving decision to the individual consciences of American scientists.

Parenthetically, I may note that I so informed two scientists who are scheduled soon to go to the Soviet Union who called me last Friday. One asked me what I would do if I were he, and I replied that I would not go.

Over the years, I have repeatedly warned the Soviet scientific officialdom that if they persist on course, American scientists would become so alienated that there will be none willing to participate in exchanges.

At this juncture, I far prefer that the Soviets receive that message from individual scientists, as I have been telling them they would, than that our Government order our scientists either to go or not to go.

As for technological interchange and commercial dissemination of advanced technology, I can see no justification to continue such interchange unless, in a given instance, it is clearly in our national interest and of such a nature that we receive tangible, technical benefits.

Thus, I find myself in general support of the administration position with respect to Government-sponsored exchange. It should be slowed down markedly, there should be no new starts, no high-level, visible interactions. The signal of our repugnance and great concern must be entirely clear.

But, I hope that we will, somehow, preserve the framework, the institutional structure of the exchange process so that, one day when, hopefully, circumstances may then warrant, we can turn the system back on again as readily as possible.

Now, it is in that context that I would like now to turn to the scientific forum. Mr. Goodby has, as I knew he would, provided an excellent summary of its history and its purpose. Our delegation has been selected with the greatest care and after wide consultation. The membership of the delegation is here to be submitted and I have the paper here for the record.

[The documents referred to above are as follows:]

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Mr. W. Murray Todd (Secretary to Delegation)
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Mr. Martin McLean
Bureau of European Affairs
Department of State
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(202) 632-8901

Mr. Guy E. Coriden
Office of Management Operations
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Washington, D.C. 20520
(202) 632-0470

Ms. Susan Pederson
Commission on Security and
Cooperation in Europe
Congress of the United States
3281 House Office Building, Annex 2
Washington, D.C. 20515
(202) 225-1901

They are admirably qualified to represent our Nation's scientific community at all three of the levels of the Hamburg meeting; scientific substance, international scientific cooperation, and the human rights of scientists.

Some members of the scientific community have urged us to eschew contact with the Soviets, to boycott the forum. Among others, Dr. Valentin Turchin, a Soviet emigre, has taken his case to the scientific community and has publicly urged me and my colleagues not to go to Hamburg. I can best summarize my attitude by quoting my response to his proposal in my letter to the editor of *Physics Today*:

The boycott he advocates is equivalent to the boycott of all exchanges that has been advocated by others. I welcome the fact that some Americans are so moved and publicly so indicate. They arm those of us in position to communicate their concerns, face to face, to those scientists who represent the Soviet block in these arrangements. Only so can the force and legitimacy of our moral position be made clear—and reported back to those governments. The struggle for human rights, like the struggle for a stable peace, requires that we continue to discuss these difficult matters. If we stop talking, we will have given up.

We will go to Hamburg, not because, as scientists, we need this opportunity to talk shop. That never was the case from the time the forum was first discussed. The scientific agenda is but another opportunity and catalyst for discussion of enhanced international cooperation and of the status of the human rights of scientists. And we know that there are delegates from other Western countries who feel quite as strongly as do we.

We will go to talk to our colleagues, from both West and East, about ways we can, collectively, bridge some of the chasms that have opened before us.

I have no expectation that this meeting will solve any problems and precious little hope that what we have to say will be acknowledged by those who have so long demonstrated their unwillingness to listen. But I hope that those in attendance will report what they hear back to their own governments.

The questions the forum may illuminate concern the degree to which the Soviets have isolated themselves by their most recent acts and by their continued repression of such men as Kovalev, Orlov, Shcharansky, and the host of refuseniks who have simply asked to leave.

We will seek to learn the extent to which our Western European colleagues share our revulsion over Afghanistan and the Helsinki watch groups and dissidents, and to repress religious believers and specific ethnic groups.

We will also try to assess the degree of support for Soviet actions to be found in the scientific communities of Eastern Europe.

The leader of the Soviet delegation to the forum, Academician Dzhermen Gvishiani, is a Deputy Chairman of the State Committee for Science and Technology, and the Chairman of the Council of International Institute of Applied Systems Analysis, IIASA, in Austria.

As an aside, you will recall that academician Kirillin, Chairman of the State Committee, and Dr. Gvishiani's immediate superior, resigned coincident with the Sakharov exile. I, for one, do not yet know what to make of that, but my instinct is that it is not a positive omen for the future.

I have known academician Gvishiani since 1970, when he and I began the negotiations which resulted in the establishment of IISAS. Our working relationship has been direct, straightforward, and candid. Is it, I believe, in our interest to talk carefully and seriously with Academician Gvishiani and his colleagues.

I met with Gvishiani in his office last October. He proposed at that time that at the Hamburg meeting, we limit ourselves to the scientific substance slated for that meeting. I responded that the scientific substance is mere substrate for the real agenda and that we will treat it so.

Our message will be clear: By flouting the standards of human decency, by creating an atmosphere of tension and fear, Soviet authorities have angered and alienated the scientists of the United States and of the West; in so doing, they have isolated their scientific community from the one resource they crave more than any other—the stimulation and creativity of free minds.

That message will be conveyed in the presence of delegations from all of the other East European nations. May it strike home.

I hope, Congressmen Fascell, Zablocki, and Brown—and colleagues—that we can convey this message effectively. If, instead, we were to boycott the Hamburg meeting, it would have little effect on the Soviet Union except to exempt them from this single opportunity to undertake an international examination of their actions in the light of the Helsinki accords and, indeed, in the light of the U.S. declaration of universal human rights.

I will be pleased to report the results of the forum to you after I return.

Mr. Fascell, if I may respond to the question you ask the previous panel with respect to what we know about other delegations, I can tell you that the Canadian delegation is seriously considering just not going.

The United Kingdom group have indicated that they will do what we will do. By and large, if we go, they will go. They are entirely in sympathy with the kind of remarks I have just been making. I don't know the formal position of the French, but we have seen one paper by one member of their delegation and it's the sternest, sharpest rebuke I have ever read. It's written by a Nobel Laureate from the Pasteur Institute.

At least one member of the Danish delegation is just a red hot activist with respect to human rights. So, I think it all shapes up as the Western nations being of pretty much one mind as they go into the meeting.

[The prepared statement of Dr. Handler follows:]

STATEMENT OF PHILIP HANDLER, PRESIDENT, NATIONAL ACADEMY OF SCIENCES, BEFORE THE COMMITTEE ON SECURITY AND COOPERATION IN EUROPE, THE SUBCOMMITTEE ON INTERNATIONAL SECURITY AND SCIENTIFIC AFFAIRS, AND THE SUBCOMMITTEE ON SCIENCE, RESEARCH, AND TECHNOLOGY, JANUARY 31, 1980

Chairman Fascell, Zablocki, and Brown; Commission and Subcommittee Members:

Thank you for inviting me to testify before such a distinguished group on two topics that are of very substantial interest to the American scientific community. The question of the nature and conduct of scientific relations with the Soviet Union in the post-Afghanistan, post-Sakharov period is important, perplexing, and complicated. The posture we have adopted with respect to the

CSCE-sponsored "Scientific Forum" in Hamburg is that it presents an opportunity to raise fundamental issues with Soviet counterparts and with the representatives of thirty-three other countries. There must be no mistake that I will lead a delegation to discuss "business as usual."

I was in China, negotiating a Memorandum of Understanding on exchanges with the Chinese Academy of Sciences, when I heard the news about Academician Sakharov; it came as a rude shock, and a grim reminder. There has been reason to believe that our intervention—a copy of which is attached—in 1973, when first Sakharov was officially threatened, was taken seriously and afforded him some small measure of protection. For the record, I have supplied copies both of our brief cable and of the full statement I sent to the USSR at that time. In the years since, we have waited to see if the Soviet authorities could tolerate a modest degree of internal opposition, and now we know they cannot.

The Sakharov exile is thus a powerful signal to the scientific community, as the invasion of Afghanistan is to the political-military community. Of these two, the Soviet invasion of Afghanistan is clearly the event of transcending global importance. The fate of Sakharov, so soon after Afghanistan, is important particularly because it means that voices of moderation within the USSR, voices that might urge reconsideration of the Afghanistan adventure, will be given no audience. We have all observed the implacable intransigency of Soviet officialdom for years, and have all been aware of their repression of intellectuals, scientists, and artists. We had hoped that this intransigency and repression would be ameliorated by one or another force or event. It is now clear that we hoped in vain.

At this point, it is important to recall that Academician Sakharov is a truly great physicist; he was not only the father of the Soviet hydrogen bomb, but also—with Tamm—the scientist who pointed out that to accomplish contained fusion, the hot plasma must be contained magnetically, not electrostatically—as the Soviets were then attempting—thus leading to their successful design of the "tokomak." Moreover, it was his contributions to theoretical physics that led to our electing him a foreign associate of our Academy.

However, the world generally is more familiar with his eloquent writings—on the pathway to peace and on the need for certain reforms in Soviet society and government, as well as his defense of the rights of diverse individuals threatened or imprisoned by Soviet authorities. There is little doubt that it was his standing as a physicist that protected him as he publicly took such actions, and there is a substantial community in the USSR which regards him as virtually "a living saint." Yet, at this time, the Soviet Government found it necessary so to confine him as to deny him contact with the scientific, intellectual, and political communities. We have read their careless accusations that he conveyed state secrets to the West, particularly to this government. I simply do not believe it. Sakharov has been, withal, a patriotic Russian, truly a member of "the loyal opposition." Up until now, he has been unwilling to accept invitations to the West out of concern that he would not be allowed to return.

Whatever the Soviet authorities do to Sakharov, it is not a blow to the USA, but a blow to their own intellectuals; a clear signal that the brute forces that manage Soviet affairs will not—cannot—tolerate independent thought and speech.

What do these events mean? What are the prospects for continued international scientific cooperation with the Soviet Union? What philosophy should now guide us?

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Today, the scientific community is awakening to the loss of another type of innocence. We, and many individual Soviet scientists, have worked desperately hard to educate political leaders of both countries to the absolute horror of nuclear war.

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And now we discover, once again, the truth which the poets and philosophers always knew—how vain have been our treasured hopes that the power of reason and the spirit of good will had already overcome mankind's darker instincts.

I cannot predict the future course of our scientific and technical relations with the USSR. As I said eight days ago in a statement made from Peking, "I find it difficult to imagine scientific exchange continuing in the spirit we had created heretofore." Each major episode in which the Soviet Government has deprived some scientist of his human rights has resulted in a shower of letters to the Academy, urging that we terminate our exchange program. We have considered that unwise because we believe it essential to keep these windows open. Sakharov's exile has already generated a new surge of similar mail. But there also remain strong voices within the community insisting that we sustain the lines of communication and stressing the importance of continued interchange at the strategic level. I would listen to both sets of voices.

In terms of direct scientific exchange, we should note the asymmetrical character of our purely scientific relations with the Soviets.

On our side, the relationships are carried on by volunteers, scientists who elect to travel there, or who agree to act as hosts here.

On the Soviet side, only those who are officially approved are permitted to travel, and Soviet hosts are ordered to receive whatever visitors the authorities designate as approved guests.

Thus, from our standpoint, the future of scientific exchange depends largely on the way individual American scientists perceive U.S.-Soviet relationships and then interpret their own roles. Neither the Congress nor the Academy can make exchange programs happen.

Our modest exchange program with the Soviet Academy (100 man months/year each way, i.e. about 30 people in each direction) has weathered the political ebbs and flows between the two countries for some 21 years. When I was in Moscow in September, Academician Aleksandrov, President of the Soviet Academy, and I discussed ways to improve and expand the program and to make it more beneficial to both sides. For example, we tentatively agreed to establish a bilateral working group to discuss new approaches to arms control and disarmament, and to joint planning of planetary exploration. I found President Aleksandrov to be an able, sympathetic leader of their Academy.

It is my understanding that the Department of State has adopted a policy of postponing and deferring all high-level exchanges, and letting the working-level individual exchanges proceed on a selective basis taking into consideration particularly whether they are uniquely in the U.S. national interest or have humanitarian purposes. We agree with this policy; accordingly we will defer all bilateral seminars and the like, while permitting the activities of individual scientists to proceed on our usual basis, leaving decision to the individual consciences of American scientists. Parenthetically, I may note that I so informed two scientists who called me last Friday. One asked me what I would do if I were he and I replied that I would not go. Over the years, I have repeatedly warned Soviet scientific officialdom that if they persist on course, American scientists would be so alienated that there will be none willing to participate in exchanges. At this juncture, I far prefer that the Soviets receive that message from individual scientists than that our government order our scientists either to go or not to go.

As for technological interchange and commercial dissemination of advanced technology, I can see no justification to continue such interchange unless, in a given instance, it is clearly in our national interest and of such a nature that we receive tangible, technical benefits. Thus, I find myself in general support of the administration position re government-sponsored exchange. It should be slowed down markedly, there should be no new starts, no high-level, visible interactions. But I hope that we will, somehow, preserve the framework, the institutional structure of the exchange process so that, one day when circumstances may warrant, we can turn the system back on again as readily as possible.

Let me now turn to the "Scientific Forum."

Some members of the scientific community have urged us to eschew contact with the Soviets, to boycott the "Forum." Among others, Dr. Valentin Turchin,

a Soviet emigré, has taken his case to the scientific community and has publicly urged me not to go to Hamburg. I can best summarize my attitude by quoting my response to his proposal in my letter to the editor of *Physics Today*:

"The boycott he advocates is equivalent to the boycott of all exchanges that has been advocated by others. I welcome the fact that some Americans are so moved and publicly so indicate. They arm those of us in position to communicate their concerns, face to face, to those scientists who represent the Soviet bloc in these arrangements. Only so can the force and legitimacy of our moral position be made clear—and reported back to those governments. The struggle for human rights, like the struggle for a stable peace, requires that we continue to discuss these difficult matters. If we stop talking, we will have given up."

We will go to Hamburg, but not because, as scientists, we need this opportunity to "talk shop." That never was the case from the time the "Forum" was first discussed. The scientific agenda is but another opportunity and catalyst for discussion of enhanced international cooperation and of the status of the human rights of scientists. And we know that there are delegates from other Western countries who feel as strongly as do we.

We will go to talk to our colleagues, from both West and East, about ways we can, collectively, bridge some of the chasms that have opened before us.

I have no expectations that this meeting will solve any problems and precious little hope that what we have to say will be acknowledged by those who have so long demonstrated their unwillingness to listen.

The questions the "Forum" may illuminate concern the degree to which the Soviets have isolated themselves by their most recent acts and by their continued repression of such men as Kovalev, Orlov, Shcharanskiy, and the host of refuseniks who have simply asked to leave.

We will seek to learn the extent to which our Western European colleagues share our revulsion over Afghanistan and the Sakharov exile, and the studied Soviet attempts to terrorize the Helsinki Watch groups and dissidents, and to repress religious believers and specific ethnic groups.

We will also try to assess the degree of support for Soviet actions to be found in the scientific communities of Eastern Europe.

The leader of the Soviet delegation to the "Forum," Academician Dzhermen Gvishiani, is a Deputy Chairman of the State Committee for Science and Technology, and the Chairman of the Council of the International Institute of Applied Systems Analysis (IIASA) in Austria. As an aside, you will recall that Academician Kirillin, Chairman of the State Committee, and Dr. Gvishiani's immediate superior, resigned coincident with the Sakharov exile. I, for one, do not yet know what to make of that, but my instinct is that it is not a positive omen for the future.

I have known Academician Gvishiani since 1970, when he and I began the negotiations which resulted in the establishment of IIASA. Our working relationships have been direct, straightforward, and candid. It is, I believe, in our interest to talk carefully and seriously with Academician Gvishiani and his colleagues.

Our message will be clear: By flouting the standards of human decency, by creating an atmosphere of tension and fear, Soviet authorities have angered and alienated the scientists of the U.S. and of the West; in so doing, they have isolated their scientific community from the one resource they crave more than any other—the stimulation and creativity of free minds. That message will be conveyed in the presence of delegations from all of the other East European nations. May it strike home.

I hope, Congressmen Fascell, Zablocki, and Brown—and colleagues—that we can convey this message effectively.

SEPTEMBER 8, 1973.

Academician M. V. KELDYSH,
President, NAUKA,
Moscow, U.S.S.R.

I have been asked to report to you both privately and publicly the concern of the Council of the National Academy of Sciences of the United States for the welfare of NAS foreign associate member Andrei Sakharov whose political and social views have been expressed in the spirit of free scholarly inquiry, which is an essential element of scientific progress. Harassment or detention of Sakharov will have severe effects upon the relationships between the scientific communities of the U.S. and the U.S.S.R. and could vitiate our recent efforts toward increasing scientific interchange and cooperation. More detailed message follows.

PHILIP HANDLER,
President, National Academy of Sciences.

Ms. DERIAN. Dr. Handler, I have looked forward to this particular panel ever since the hearing was scheduled and I regret that I have to leave. But, I would like to say that I thought your testimony was not only excellent, but extremely important.

The papers that you refer to, we would like very much to be able to enter in the record if you consider them suitable for that and everyone would be extremely interested in hearing your views of the conference when you get back as well as those of the fellow members of the delegation.

With great regret, I have to leave. I feel very frustrated by it.

Dr. HANDLER. Let me introduce my colleague, Paul Flory, distinguished chemist and an aggravated gentleman.

Mr. BROWN. Well, that's an appropriate introduction, Dr. Flory, that you are an aggravated gentleman. I think a lot of Members of the Congress are interested in that kind of reaction. They get a little aggravated themselves. We are very pleased to have you here and to note that you will be going to this meeting to speak for our country. We welcome you, sir.

Dr. FLORY. Thank you very much, Mr. Chairman. It is a privilege to be here. I wasn't sure whether I heard Phil Handler correctly, whether he said aggravated or aggravating. Either might apply. I hope the other side will conclude for the latter in Hamburg.

With your permission, I should like to convey my views on East-West scientific relations in the recent past and in the future. The wave of arrests and convictions of Soviet scientists in the late 1970's for their advocacy of human rights spurred many American scientists to reconsider their commitments to cooperation with the U.S.S.R. in the spirit of détente.

Protests to the Soviet authorities were numerous, both from individuals and from scientific organizations in the United States, but, in my opinion, they were generally ineffective. More concrete actions such as boycotts of meetings and withdrawal of cooperation in joint undertakings elicited strong reactions from the Soviet authorities. Let me clarify that remark in relation to what has been said before and what Dr. Handler has said so forcefully.

I am not advocating a total boycott of scientific relations with the Soviet Union. However, I merely want to make the point that concrete actions such as boycotts and a refusal to cooperate have brought sharp responses.

I would like to offer two instances from my own experience. About 2 years ago when the wave of arrests and trials was accelerated and following the Orlov conviction, I had written letters to President Aleksandrov of the Soviet Academy of Sciences deploring these acts. Because I was scheduled to attend and participate as the opening speaker in a very large scientific meeting in Tashkent in October of that year, I took occasion to advise him that I was seriously considering withdrawing. A copy of that letter is submitted for the record.

[The letter follows:]

STANFORD UNIVERSITY
STANFORD, CALIFORNIA 94305

DEPARTMENT OF CHEMISTRY

July 13, 1978

Academician Anatoly Aleksandrov
President, USSR Academy of Sciences
14 Leninsky Prospekt
Moscow B-71, RSFSR, USSR

Pear Professor Aleksandrov:

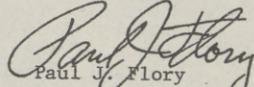
You are no doubt aware of the widespread revulsion generated in the United States and other western countries by the bizarre charges brought against Yuri Orlov, Anatole Scharansky and Alexander Ginsburg. Their innocence of any actions beyond those rights considered basic in civilized countries, and affirmed in the Helsinki agreements, is well documented. The fact that their trials are conducted behind closed doors testifies to the innocence of the ones indicted. These circumstances are well known. It is not the purpose of this letter to reiterate them.

Rather, I wish to stress the impact of the foregoing events on scientific and intellectual cooperation between our countries. Free exchange of ideas between individual scientists is utterly essential to such cooperation. International scientific meetings are accepted as a major forum for such exchanges, both through formal presentations in assembled meetings and, most importantly, through private discussions held in conjunction with such meetings or at other times and places.

The repressive measures currently being perpetrated in the Soviet Union are blatantly inimical to free exchange of ideas. Science itself cannot flourish in such an atmosphere. Moreover, if Soviet scientists who engage in discussions with foreigners are liable to charges of treason, then they must refrain from exposing themselves to the dangers of conferring with foreigners.

Current circumstances create a dilemma for those of us who have steadfastly believed in international scientific cooperation as one of the avenues for achieving peace and for advancing human welfare. Our participation in scientific meetings in the Soviet Union that are subject to the inevitable constraints of the current oppressions promises to be of dubious merit, both from the standpoint of scientific value and from the opportunities afforded for advancing mutual understanding between peoples of our two countries. We must therefore reconsider our commitments to participate in such meetings.

Sincerely,



Paul J. Flory
Member of the National
Academy of Sciences
and Nobel Laureate

PJF:dkc

cc: His Excellency Anatoliy F. Dobrynin
Ambassador of the USSR
Washington, D. C. 20036

I also wrote to the chairman of the organizing committee conveying the same message.

In contrast to previous letters, this one brought prompt responses. In addition to pleas by telephone from Moscow, the first vice president of the Soviet Academy called on me at Stanford in the company of the omnipresent Russian "observer." He offered all conceivable inducements to participate in the Tashkent meeting. However, because he refused help for the imprisoned scientists and others, I canceled my commitment eventually and boycotted the meeting, as did seven other Americans invited to deliver main lectures.

As the second example, the informal group, "Scientists for Orlov and Shcharansky," with which I have collaborated, secured some 2,400 signatures from scientists committing themselves to refuse, or to limit drastically, their participation in point activities with the Soviets. Our actions drew vigorous denunciations from the Soviet authorities. These were voiced by one of their foremost radio commentators, Valentin Zorin, and reiterated in a long editorial published in Pravda on April 23, 1979.

These responses denouncing the positions we had taken were, I believe, almost without precedent. The editorial in Pravda charged that we opposed international scientific cooperation and allowed politics to supersede science. A strange form of hypocrisy, I might say. A copy of our reply signed by five Nobel laureates and dated July 12, 1979, is submitted for the record.

I cite these instances to illustrate the sensitivity of the Soviets to disruption of scientific ties with the West. Although protests are of little avail, measures that would isolate them from the currents of science in the world at large have brought indignant responses, evidently instigated at high levels of the bureaucracy.

Soviet science is dependent on the West in two respects. First, authoritarian control of science and the severe limits they place on intellectual and professional freedom stifle initiative and creativity. Their scientific enterprise is very large, numbering well over 1 million. But, for the reasons mentioned, it is disparately unproductive of strategic advances that affect the course of science. To a large extent, it must draw on research in other countries for fresh concepts and novel directions.

Second, and more important, the Russians harbor a pathological desire for external contacts—a desire conditioned perhaps by four centuries of proscriptions on travel abroad and on contacts with foreigners.

Those of us who have made personal acquaintances with our scientific counterparts are vividly aware of this attitude. Cessation of these contacts, meager though they are, would undermine the morale of Russian scientists in whom the state has made lavish investments commencing in Stalin's time.

Coming to recommendations, let me state at once that I favor a complete ban on technology transfer to the U.S.S.R. under prevailing conditions. Such a ban should include surreptitious pirating of technological know-how, reputed to be widespread within our borders.

Even if the Soviets were to remove their troops and police from Afghanistan, if they desisted from fomenting upheavals in other countries, and if they released scientists and others imprisoned for advocacy of human rights, I would nevertheless urge that scientific cooperation with the U.S.S.R. and their satellites be conducted along lines departing from those that have been countenanced in the recent past. Here I refer to the fact that we—and I certainly include myself in the “we”—have allowed ourselves to engage in cooperative scientific endeavors in which their side is controlled officially.

[The document referred to is as follows:]

SCIENTIFIC TIES AND HUMAN RIGHTS

American scientists have been accused of "obstructing cooperation" with scientists of the Soviet Union and of "endeavoring to reduce [scientific] ties or stop them altogether." These charges appeared in a long article entitled "Scientific Ties Serve Progress" which appeared in PRAVDA on April 23, 1979, over the signatures of five members of the Academy of Sciences of the USSR, two of them Vice-Presidents. This article followed two previous pronouncements in a similar vein, presumably emanating from official circles. They appear to have been instigated in response to a mounting tide of opposition among US scientists and engineers to the actions of the Soviet authorities against so-called dissidents, many scientists among them, who have had the courage to support the cause of human rights. Increasing numbers of Americans have withdrawn from participation in exchanges and other collaborative efforts with the USSR.

According to the PRAVDA article, "there are attempts to pressure American scientists to organize collections of signatures on all kinds of petitions and appeals." We are among the 2400 signers of "petitions" and "appeals" circulated by the informal group "Scientists for Orlov and Shcharansky" (SOS) which commit us to withhold or drastically limit our personal cooperation in US-Soviet scientific affairs. Four hundred French and 100 Australian scientists have taken similar positions. The Soviet spokesmen have misconstrued the basis for our actions and have gravely underestimated the depth and extent of the disaffection of American scientists engendered by the oppressive actions of the Soviet authorities. The SOS petitions are a mere sampling of the attitudes and convictions

prevalent among American scientists and engineers. The numbers of signatories could be increased greatly by a comprehensive solicitation, without "pressure" from our government or from any other quarter.

The authors of the PRAVDA article profess an abiding commitment to international cooperation in science for the welfare of all mankind. We applaud their stand and are genuinely pleased to share common ground with our Russian colleagues. We too are steadfast believers in the traditions of science as an endeavor that transcends national boundaries and political differences. Even before the first official agreement on scientific cooperation between our respective Academies of Sciences was consummated in 1959, we eagerly welcomed the prospect of cooperation with our colleagues in the Soviet Union. Many of us were among the first US citizens to cross the chasms of the Cold War.

In stark contrast to the professions of our Russian colleagues, the Soviet government has pursued policies that thwart cooperation and communication between our scientific communities. Anti-Semitism, as documented recently by eminent members of the American Mathematical Society, continues to poison the atmosphere of cooperation. The Soviet authorities have systematically imposed political restrictions on the selection of Russian scientists who are allowed to participate in international meetings and exchanges. It is common knowledge that the coveted privilege to attend scientific meetings abroad is under the control of the KGB. Russian scientists whose contributions have earned them worldwide recognition all too often are disqualified on political grounds. In their stead, persons with mediocre scientific

credentials typically comprise a substantial fraction of the Soviet delegation. Our invitations to distinguished Russian scientists to deliver lectures or receive prestigious awards have repeatedly been interdicted by the Soviet authorities. Secret police escorts have become customary adjuncts to Soviet scientific delegations abroad. These practices have corrupted the very concept of scientific cooperation.

In spite of the policies enforced by the Soviet authorities, most of us were willing to enter into cooperative endeavors with our Russian colleagues, many of whom we hold in the highest regard. It was our abiding hope that through personal contacts the oppressive policies would somehow be ameliorated. This hope was dashed by the convictions and harsh sentences of Yuri Orlov and Anatoli Shcharansky in 1978 for the "crime" of advocating basic, inalienable human rights. Their names were thus added to the list, already long, of dissidents imprisoned or committed to psychiatric hospitals.

In a recent broadcast (May 19), noted Soviet radio commentator Valentin Zorin has castigated us for threatening disruption of scientific ties without "having a way of learning the true circumstances of the [Orlov and Shcharansky] cases." Indeed, the records of the court proceedings are not at our disposal. Does Mr. Zorin have access to them? If so, he should disclose them in fulfillment of the responsibilities of his profession. The secrecy surrounding the trials is disturbingly reminiscent of the infamous trials of the Stalin era, trials that the Soviet government itself eventually exposed as shams.

Formal agreements on scientific cooperation are doomed to failure if leading scientists choose not to participate. If the Soviet government is genuinely eager to cultivate scientific ties and to engage the cooperation of scientists in the world at large, it must foster a climate free of political, ethnic and racial prejudice and persecution.

Christian B. Anfinsen
Nobel Laureate in Chemistry

Owen Chamberlain
Nobel Laureate in Physics

Max Delbrück
Nobel Laureate in Physiology
or Medicine

Paul J. Flory
Nobel Laureate in Chemistry

Edwin M. McMillan
Nobel Laureate in Chemistry

July 12, 1979

The Government makes the selections on their side. We, as Dr. Handler points out, participate as individuals. The result has been a police-controlled—KGB-controlled—scientific meeting. It is widely documented and there is much evidence clearly to show that Russian scientists invited to attend foreign meetings must be cleared by the KGB.

The Soviets have yielded in some cases but by no means to the extent that should be demanded of them. Therefore, I would suggest as a first step the scientific community, perhaps with the cooperation and help of the Government, reshape its criteria for participation along lines as follows:

1. Meetings and exchanges must be fostered in a climate conducive to free association of, and unfettered communication between, individual scientists. They must not be under the scrutiny of secret police.

2. Participants in cooperative endeavors must be selected solely on the basis of their scientific achievements, without regard for their political conformity, race or ethnic background.

3. Negotiations and arrangements should be in the hands of scientists, not governments.

4. Those who are invited by the host country must be allowed to accept.

5. Science areas chosen for collaboration or exchanges must offer prospects of benefit to both parties.

These are principles which I think we could wisely choose to insist upon in all international scientific cooperation.

Recent events notwithstanding, it would be a mistake in my opinion to rupture completely scientific relations with the U.S.S.R. Judiciously conducted cooperative endeavors could be of mutual advantage if compliance with the foregoing conditions was assured.

Science is inherently an international enterprise. We should not adopt policies inimical to this principle that is deeply rooted in the traditions of science.

[The prepared statement of Dr. Flory follows:]

STATEMENT BY PAUL J. FLOKY, EMERITUS PROFESSOR OF
CHEMISTRY AT STANFORD UNIVERSITY
PRESENTED BEFORE THE
HEARING JOINTLY SPONSORED BY THE COMMISSION ON SECURITY
AND COOPERATION IN EUROPE, THE SUBCOMMITTEE ON INTERNATIONAL
SECURITY AND SCIENTIFIC AFFAIRS, AND THE SUBCOMMITTEE ON
SCIENCE, RESEARCH AND TECHNOLOGY

January 31, 1980

Mr. Chairman, Members of the Sub-Committees of Congress here convened. I am Paul J. Flory, Emeritus Professor of Chemistry at Stanford University. I am a member of the National Academy of Sciences. In 1974 I was awarded the Nobel Prize for Chemistry and, in 1975, the National Medal of Science.

Today I appear, at your invitation, as a member of the Delegation to represent the United States at the Scientific Forum, mandated by the 1975 Helsinki Accords, and scheduled to be held in Hamburg, West Germany, February 18-29. With your permission, I should like to convey my views on East-West scientific relations in the recent past and in the future.

The wave of arrests and convictions of Soviet scientists in the late 1970's for their advocacy of human rights guaranteed in the Helsinki Accords spurred many American scientists to reconsider their commitments to cooperation with the USSR in the spirit of detente. Protests to the Soviet authorities were numerous, both from individuals and from scientific organizations in the United States. They were generally ignored, although they may have slowed the pace of further arrests. In contrast, more concrete actions such as boycotts of meetings and withdrawal of cooperation in joint undertakings elicited strong reactions from the Soviet authorities. Let me offer two instances from my experience that may be illustrative.

Whereas repeated letters to President Aleksandrov of the Soviet Academy of Sciences deploring Soviet actions against scientists brought no response, my letter dated 13 July 1978 (copy appended for the record) threatening to withdraw from a major international scientific meeting staged by the Russians in Tashkent in October of that year promptly brought entreaties from them urging me to attend. In addition to pleas by telephone from Moscow, the first Vice President of the Soviet Academy called on me at Stanford in the company of the ineludible Russian "observer." He offered all conceivable inducements to participate in the Tashkent meeting. In the end, I cancelled my commitment to deliver the opening lecture and boycotted the meeting, as did seven other Americans invited to deliver main lectures.

The informal group "Scientists for Orlov and Shcharansky," with which I have collaborated, secured over 2400 signatures from scientists committing themselves to refuse or to limit drastically their participation in joint activities with the Soviets. Our actions drew vigorous denunciations from the Soviet authorities. These denunciations were voiced by one of their foremost radio commentators, Valentin Zorin, and reiterated

in a long editorial published in Pravda on 23 April, 1979, over the signatures of five officials of the Soviet Academy of Sciences. The editorial charged that we opposed international scientific cooperation and allowed politics to supersede science. A copy of our reply signed by five Nobel Laureates and dated 12 July, 1979, is appended herewith. As expected, Pravda did not choose to publish our reply. It appeared in "Science" and in "Chemical and Engineering News" and was broadcast by VOA and BBC.

I cite these instances to illustrate the sensitivity of the Soviets to disruption of scientific ties with the West. Although protests are of little avail, measures that would isolate them from the currents of science in the world at large have brought indignant responses, evidently instigated at high levels of the bureaucracy.

Soviet science is dependent on the West in two respects. First, authoritarian control of science and severe limits on the intellectual and professional freedom of their scientists stifles initiative and creativity. Their scientific enterprise is very large - numbering well over a million scientists - but, for the reasons cited, it is disparately unproductive of strategic advances that affect the course of science. To a large extent it must draw on research in other countries for fresh concepts and novel directions.

Secondly, and possibly more importantly, the Russians harbor a pathological desire for external contacts - a desire conditioned perhaps by four centuries of proscriptions on travel abroad and on contacts with foreigners. Those of us who have made personal acquaintances with Russian scientists are keenly aware of their yearning for closer contacts with the outside world and with the West in particular. A journey to a meeting outside the USSR is the most coveted reward a Soviet scientist can be granted. Cessation of these contacts, meager though they are, would undermine the morale of Russian scientists in whom the State has made lavish investments commencing in Stalin's time.

Coming to recommendations, let me state at once that I favor a complete ban on technology transfer to the USSR under prevailing conditions. Such a ban should include surreptitious pirating of technological "know-how," reputed to be widespread within our borders. Necessary steps to suppress such espionage should be implemented without delay.

Even if the Soviets were to remove their troops and police from Afghanistan, if they desisted from fomenting upheavals in other countries, and if they released scientists (and others) imprisoned for advocacy of human rights, I would nevertheless urge that scientific cooperation with the USSR and satellite countries be conducted along lines departing from those that we have countenanced in the recent past. The following are suggested as minimum conditions for scientific cooperation:

1. Meetings and exchanges must be fostered in a climate conducive to free association of, and unfettered communication between, individual scientists. They must not be under the scrutiny of secret police.
2. Participants in cooperative endeavors must be selected solely on the basis of their scientific achievements, without regard for their political conformity, race or ethnic background.
3. Negotiations and arrangements should be in the hands of scientists, not governments.
4. Those who are invited by the host country must be allowed to accept.
5. Science areas chosen for collaboration or exchanges must offer prospects of benefit to both parties.

Recent events notwithstanding, it would be mistaken in my opinion to rupture completely scientific relations with the USSR. Judiciously conducted cooperative endeavors could be of mutual advantage if compliance with the foregoing conditions was assured. Science is inherently an international enterprise. We should not adopt policies inimical to this principle that is deeply rooted in the traditions of science.

Mr. BROWN. Thank you very much, Dr. Flory.

Now, if we can hear from Dr. Acker who is the president of Kansas State University, we will question all three of the panelists.

Dr. ACKER. Thank you, Mr. Chairman.

My name is Duane Acker and I am president of Kansas State University. I consider it a pleasure and a privilege to be invited to present testimony to you, to Chairman Fascell and to the Commission and subcommittee members.

I speak from the vantage point of one with some responsibility to enhance the functioning of a specific component of the academic community, a specific institution, but also mindful of the relationship of scientific progress and scientific exchange to the economic growth of a country or a sector of the country and to the quality of life, as well as to the development of our international trade.

Malnutrition and food supply are crucial problems for more than 60 percent of the world's population. The most urgent needs are for increases in food calories and in the intake of high quality protein. The world's effectiveness in dealing with staggering food needs depends critically on new scientific understandings that may advance agricultural productivity.

The development of the intellectual and physical resources needed to meet food requirements throughout the world will require the concerted efforts of researchers and practitioners in governments, international agencies, foundations, universities, and industry.

Finding patterns for their successful collaboration will result in continued and expanded generation of the basic knowledge which can be applied to the production and processing of agricultural products.

Scholarly interchange, where people of all backgrounds debate, challenge and are challenged, is one of the freedoms existing in the scientific community. I consider it a requirement of those who participate in the scientific community. It also serves as a dramatic illustration to all who witness it, that free and open exchange in ideas is a constructive endeavor.

Any government's inhibition of scholarly exchange should be considered a suppression of a fundamental right and, in fact, interference with the responsibility of the scientist. It is, in fact, a deterrent to progress toward solving the world's staggering food problem.

As related to food and agriculture, the exchange of scientific and technological information has important implications for the United States.

First, and most obviously, the Nation profits from the exchanged information itself. Second, international scientific and technological exchange programs provide us the opportunity to evaluate agriculture worldwide. Third, international scientific and technological exchanges foster economic trade. Fourth, international exchange contributes to a better understanding of nations and peoples.

I would like to elaborate briefly on these components using illustrations from Kansas State University which is the Kansas land-grant university. Our institution's experience would most probably be similar to those of the land-grant school in each of your States.

During the past 3 years, seven Kansas State faculty members have visited the Soviet Union, and they are listed in my prepared testimony. I would like to use two specific illustrations from among the

many these faculty can provide to discuss how this Nation benefits from international exchange.

For example, our most fertile source for alternate plant types of our principal crops is the Soviet Union. The best plant breeding materials we can get to improve our alfalfa and other legumes can be and have been obtained from the U.S.S.R. Ladak, an old and valuable Russian alfalfa variety, is extremely important to our alfalfa breeding programs.

Dr. N. E. Hansen, an American horticulturalist, traveling by train and other mode, including oxcart, made six visits through Russia between 1897 and 1915. He brought back plant specimens which are the ancestors of alfalfas and wheats that enhance the agricultural productivity of the Great Plains and grapes, pears, apples, apricots, melons, and flowering trees that today enhance the quality of living on the Great Plains.

Dr. Larry Erickson, a member of the KSU chemical engineering faculty, met Dr. Ales Prokop, a Czechoslovakian microbiologist, while they were both at the University of Pennsylvania. They shared laboratory facilities and eventually interest in improving knowledge useful for designing processes in which microbes grow for the productive purposes.

Their work has resulted in important basic research in microbial proteins, an area of enormous interest to European agricultural scientists contemplating the use of microbial proteins for food and feed purposes.

Between 1967 and today, Drs. Erickson and Prokop have collaborated on seven scientific papers. Dr. Erickson has traveled to Prague three times, and Dr. Prokop has been to Kansas State University.

As a result of his work with Prokop and because of his work related to hydrocarbon fermentation, the Soviets invited Dr. Erickson to the U.S.S.R. He has been there four times under the National Academy of Science and National Science Foundation programs.

Dr. Erickson shared his knowledge and in return, studied Soviet work on the application of mass and energy balance regularities in the fermentation process. He continued the Soviet work, looking at energetic aspects of the fermentation process and at energetic efficiency of the fermentation process.

This led to a better understanding of the energetics of conversion of glucose to ethyl alcohol, the utilization of biomass. The application of Dr. Erickson's findings will allow for more efficient, thus more economical production of ethyl alcohol for fuel, a matter of prime importance today in the United States. The Department of Energy is now funding Dr. Erickson's continued research.

In both basic and applied research, the United States profits greatly from the exchanged technological and scientific information itself. As related to food and agriculture, international scientific and technological exchange programs provide the United States opportunity to evaluate agriculture worldwide.

By visiting a country, observing its crops, talking with its agriculturists, and working in its research institutes, we are in a better position to estimate that nation's agricultural capabilities, current and future.

For more than 20 years, Kansas State University has had a good partnership with Justus Liebig University in Giessen, West Germany. We have exchanged undergraduate and graduate students, and

a few faculty. Recently, our two universities formed the Joint Council for Advanced Studies of Agriculture in the centrally planned economies to promote and advance research activities and scholarly exchanges pertaining to the Eastern European and Soviet agricultural development.

This semester, the council is sponsoring a speaking tour to five midwestern universities for a professor at Giessen, considered to be the top specialist today in the field of Soviet and Eastern European agriculture.

A major international conference on Soviet and East European agriculture, scheduled for Giessen in June 1981, will bring together the world's best scholars in that area.

As related to food and agriculture, international scientific and technological exchanges foster economic trade.

An important component of the Kansas State University College of Agriculture is the Food and Feed Grain Institute, financed largely by the U.S. Agency for International Development. Since its inception 14 years ago, the Institute has provided technical assistance to scientists, technicians, and government officials from nations throughout the world.

In tours, short courses, and seminars, potential grain buyers learn how to store, ship, process, and market this country's most abundant grains. The result has been consistently increased grain trade from the learning, usually on our campus, on how to handle the grains that we have for sale.

Of the 35 nations signing the Helsinki accords which authorize the upcoming scientific forum, all but seven have taken part in the programs of our Feed and Food Grain Institute. This type of scientific and technological information exchange has resulted in increased economic trade.

As you are well aware, the nations of Western Europe are especially important customers for our agricultural goods as many nations of Eastern Europe are potential customers. It is vital that we maintain strong, free, and open interchange on all levels with all of these nations.

As related to food and agriculture, international scientific and technological exchanges contribute to a better understanding of nations and peoples.

In the exchange process, special attention should be paid to agricultural exchanges because this is an area of readily acknowledged excellence. The land-grant universities are recognized everywhere, especially in the Soviet Union.

Our experience with Soviet visits in agriculture have been good. Our faculty and students have learned from them while they are learning from us.

Additionally, within the context of scientific and technological exchange, foreign visitors to this country have the opportunity to see how a democracy and a free enterprise system works. We, of course, can not be sure to what degree our visitors share their American experience when they return home. But I suspect they are much like we are and tell their colleagues about their findings and their impressions.

Visitors to American industries and family businesses and farms suddenly realize how each contributes to our society. They see how

the management of the business by a family, by educated individuals, with many involved in the decisionmaking processes strengthens our whole society.

Visitors to an American campus have the opportunity to witness free expression, to see how an administrative structure of an American university works, to watch collegial, participatory decisionmaking, to observe management and planning and how a university operates as part of a broad society. Visitors can learn of the importance of citizen-constructed boards of regents, elected legislators and elected Governors.

Our exchanges are often a most efficient way to demonstrate American students, faculty, and citizens freely involved in the discussion of social, political, and economic issues in which human rights play an important part.

We must continue to provide opportunities for our visitors to watch the democratic processes of academic freedom and to bear witness to this Nation's belief in and support of the open exchange of ideas inherent to academic freedom.

I would like to borrow, Mr. Chairman, thoughts from the Monday, January 28 editorial in the Kansas City Times entitled "Spirit of Andrei Sakharov." It said in part:

The United States cannot be quiet out of fear of what the Russian absolutists might do as a consequence. We cannot let their warped standards of propriety and paranoia dictate our response to those very sicknesses * * * Free societies cannot measure their worth against the idiotic repressions of closed societies. They can only measure their courage and will to remain free against the spirit of such a Russian as Andrei Sakharov.

In our relations with the Soviet Union, we must always keep clearly before us our own objectives. We want to maximize mutual understanding, and this requires an approach which is methodical, persistent and realistic.

We should have enough confidence in ourselves to welcome a dialog, and this should be carefully planned and executed without any illusions or Utopian expectations.

And, because scientific and technological exchanges provide us with important and useful information; provide us the opportunity to evaluate agriculture world-wide; foster economic trade; and contribute to a better understanding between nations and peoples, I believe it is in the best interest of the United States to encourage their continuation.

My thanks to you.

[The prepared statement of Dr. Acker follows:]

Chairmen Fascell, Zablocki and Brown; Commission and Subcommittee Members:

Thank you for inviting me to present testimony regarding issues central to scientific progress and the academic community.

Malnutrition and food supply are crucial problems for more than 60 percent of the world's population. The most urgent needs are for increases in food calories and in the intake of high quality protein. The world's effectiveness in dealing with staggering food needs depends critically on new scientific understandings that may advance agricultural productivity.

The development of the intellectual and physical resources needed to meet food requirements throughout the world will require the concerted efforts of researchers and practitioners in governments, international agencies, foundations, universities, and industry. Finding patterns for their successful collaboration will result in the continued and expanded generation of the basic knowledge which can be applied to the production and processing of agricultural products.

Scientific interchange, where people of all backgrounds debate, challenge and are challenged, is one of the freedoms existing in the scientific community. It serves as a dramatic illustration to all who witness it, that free and open exchange of ideas is a constructive endeavor.

Any government's inhibition of scholarly exchange should be considered a suppression of a fundamental right and is in fact a deterrent to progress toward solving the world's staggering food problem.

As related to food and agriculture, the exchange of scientific and technological information has important implications for the United States.

Testimony by Dr. Duane Acker, President of Kansas State University, Manhattan, Kansas, before the Commission on Security and Cooperation in Europe, the Subcommittee on International Security and Scientific Affairs, and the Subcommittee on Science, Research and Technology. Washington, D. C., January 31, 1980

First, and most obviously, the nation profits from the exchanged information itself. Second, international scientific and technological exchange programs provide us the opportunity to evaluate agriculture world-wide. Third, international scientific and technological exchanges foster economic trade. Fourth, international exchange contributes to a better understanding of nations and peoples.

Let me elaborate briefly on these components using illustrations from Kansas State University which is the Kansas land-grant university. Our institution's experiences would most probably be similar to those of the land-grant school in each of your states.

During the past three years, seven KSU faculty members have visited the Soviet Union.

Lawrence Hagen, USDA Wind Erosion Lab, an adjunct professor in the Department of Agronomy

Dr. Spencer Tomb, a botanist and a professor in the KSU Division of Biology

Dr. Walter F. Kolonosky, an assistant professor in the Department of Modern Languages

Dr. Jacob Kipp, an associate professor in the Department of History

Dr. Joseph Hajda, professor in the Department of Political Science

Dr. Floyd Smith, Director of the KSU Agricultural Experiment Station

Rod Walker, associate professor in the Department of Music

Dr. Larry Erickson, professor in the Department of Chemical Engineering

Dr. Hajda conducted a study tour for 12 KSU students in the USSR during January, and Rod Walker conducted a tour for the KSU Concert Choir in the USSR and Poland during January.

I would like to use two specific illustrations from among the many these faculty can provide, to discuss how this nation benefits from international exchange.

For example, our most fertile source for alternate plant types of our principal crops is the Soviet Union. The best plant breeding materials we can get to improve our alfalfa and other legumes can be obtained from the USSR. LADAK, an old and valuable Russian alfalfa variety is extremely important to our alfalfa breeding programs.

During November of 1979, Dr. Floyd Smith, director of the Kansas State University Agricultural Experiment Station, was in the Soviet Union, primarily to learn about their corn and grain sorghum production. The Soviets, aware of Dr. Smith's wheat expertise, provided him special tours of the nurseries of their most famous wheat breeders. He returned to Kansas with a vivid impression of the Russian capability for the breeding and production of hard red winter wheat.

American plant breeders continue to use Russian wheat varieties to improve the cold hardiness of wheat in our northern states.

By visiting the USSR academies of science and research institutes and by observing Soviet plant cultivation practices, we obtain important scientific information related to the survival of common plants under the most rigorous climatic conditions.

Dr. N. E. Hansen, an American horticulturist, traveled throughout Russia between 1897 and 1915. He brought back plant specimens which are the ancestors of alfalfas and wheats that enhance the agricultural productivity of the Great Plains and grapes, pears, apples, apricots, melons, and flowering trees that today enhance the quality of living on the Great Plains.

Similarly, many of this nation's animal breeds are from Europe. Our cattle--Herefords, Angus, Shorthorn, Holsteins--are all of European descent.

Dr. Larry Erickson, a member of the KSU chemical engineering faculty, met Dr. Ales (pronounced Alesh) Prokop, a Czechoslovakian micro-biologist, while they were both at the University of Pennsylvania. They shared laboratory facilities and eventually interest in improving knowledge useful for designing processes in which microbes grow for productive purposes. Their work has resulted in important basic research on microbial proteins, an area of enormous interest to European agricultural scientists contemplating the use of microbic proteins for food and feed purposes. Between 1967 and today, Drs. Erickson and Prokop have collaborated on seven scientific papers. Dr. Erickson has traveled to Prague three times, and Dr. Prokop has been to Kansas State University.

As a result of his work with Prokop and because of his work related to hydro-carbon fermentation, the Soviets invited Dr. Erickson to the USSR. He has been there four times under the National Academy of Science and National Science Foundation programs. Dr. Erickson shared his knowledge and in return studied Soviet work on the application of mass and energy balance regularities in the fermentation processes. He continued the Soviet work, looking at energetic aspects of the fermentation process and at energetic efficiency of the fermentation process.

This led to a better understanding of the energetics of conversion of glucose to ethyl alcohol. The application of Dr. Erickson's findings will allow for more efficient, thus more economical, production of ethyl alcohol for fuel, a matter of prime importance today in the United States. The Department of Energy is now funding Dr. Erickson's work.

In both basic and applied research, the United States profits greatly from the exchanged technological and scientific information itself.

As related to food and agriculture, international scientific and technological exchange programs provide the United States opportunity to evaluate agriculture world-wide.

By visiting a country, observing its crops, talking with its agriculturists, and working in its research institutes, we are in a better position to estimate that nation's agricultural capabilities, current and future.

Because of many visits by American agricultural scientists and technologists, we can now talk about world food production and include the Soviet component with more wisdom. To expand U.S. agricultural trade with other parts of the world, it is important that we be fully apprised of the food situation in the Soviet Union and in the Eastern European nations.

For more than 20 years, Kansas State University has had a good partnership with Justus Liebig University in Giessen, West Germany. We have exchanged undergraduate and graduate students, and a few faculty. Recently, our two universities formed the Joint Council for Advanced Studies of Agriculture in the Centrally-Planned Economies to promote and advance research activities and scholarly exchanges pertaining to the Eastern European and Soviet agricultural development. This semester the Council is sponsoring a speaking tour to five Mid-American universities for one considered to be the top specialist, a Professor at Giessen, today in the field of Soviet and Eastern European agriculture.

A major international conference on Soviet and East European agriculture, scheduled for Giessen in June, 1981, will bring together the world's best scholars.

As related to food and agriculture, international scientific and technological exchanges foster economic trade.

An important component of the Kansas State University College of Agriculture is the Food and Feed Grain Institute. Since its inception 14 years ago, the Institute has provided technical assistance to scientists, technicians, and government officials from nations throughout the world. In tours, short courses and seminars potential grain buyers learn how to store, ship, process, and market this country's most abundant grains. The result is increased grain trade.

Of the 35 nation's signing the Helsinki accords which authorize the up-coming "Scientific Forum," all but seven (Greece, the Holy See, Iceland, Liechtenstein, Malta, Monaco, and San Marino) have taken part in the programs of our Feed and Food Grain Institute. This type of scientific and technological information exchange has resulted in increased economic trade.

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We should have enough confidence in ourselves to welcome a dialogue, and this should be carefully planned and executed without any illusions or Utopian perceptions.

Conclusion---Summary

And, because scientific and technological exchanges provide us with important and useful information, provide us the opportunity to evaluate agriculture world-wide, foster economic trade, and contribute to a better understanding between nations and peoples, I believe it is in the best interest of the United States to encourage their continuation.

Mr. BROWN. Thank you very much, Dr. Acker.

Gentlemen, this is the last vote of the evening and I'm going to go over and try to make it. If you will be so kind as to remain, we will try and finish up the questions as soon as we get back. It should be not more than 10 minutes.

[Voting recess.]

Mr. BROWN. The hearing will be in order.

I want to express my very deep thanks to the panel for their patience in the rather extensive hearings with frequent interruptions this afternoon. I know that most of you recognize that these kind of difficulties are typical of our schedule here, but it is an imposition, and I do appreciate your tolerating it.

Dr. Handler, I was struck by the fact that your panel here is an excellent illustration of the diversity of thought that exists in the American scientific community. Not that there is a fundamental disagreement but there is a substantial difference in the emphasis given by these gentlemen.

I wonder if you see that as giving any difficulties for the American delegation in the meeting, or contributing to the strength of the meeting?

Dr. HANDLER. I really thought that it contributes to our strength.

Mr. BROWN. Do you think that the meeting could evolve by its own action the sort of framework that Dr. Flory suggests for the exchange of science between countries?

Dr. HANDLER. I don't believe that Dr. Flory and Dr. Acker were really in general disagreement. Dr. Acker gave emphasis to some of the real benefits of the program. It really isn't a completely one-way flow which is an easy assumption some of us sometimes make.

Dr. Flory wants some ground rules for decency in the way we do all this. I don't think Dr. Acker disagrees with those.

Mr. BROWN. My question had no—

Dr. HANDLER. I understand. It's just as well that our delegation is not of a single mind as we go to this meeting. But in a funny way, I suppose that these differences have to be translated in our internal behavior in the United States, what ground rules we choose to apply to our relationships with the Soviet Union whereas with respect to the problems which we shall be examining when we are in Hamburg I think we are quite of one mind and I can explain that about the rest of the entire delegation.

Mr. BROWN. Dr. Acker, on the subject of agricultural research and exchanges which you have so well described and the values will be a topic for discussion at this meeting, this will of course be in the framework where we have cut off shipment of grain to the U.S.S.R. and where there are proposals being advanced that this would be an aperture time to establish an international grain reserve, a very controversial kind of a proposal in the past, particularly in the Midwest. I wonder if you see any possibility that this whole situation might force us in that direction of diverting substantial quantities of grain to some sort of a global grain reserve to be used in the event of large scale hunger or something of that sort?

Dr. ACKER. If I understand your question, Mr. Chairman, I see the imposed embargo as bringing about several forces which move us toward the establishment of an international grain reserve or, at least, a national grain reserve. It probably moved us in that direction as a result of many pressures within this country.

Mr. BROWN. That's correct, yes. We have those pressures mainly because the very existence of that large amount of grain raises the question of what can be done with it. I'm asking, is this a propitious time to increase our efforts to establish a grain reserve and whether or not at the meeting such as the one that you will be attending is a forum which would be a good one for that issue to be brought up.

Dr. ACKER. I do not think that this forum is a likely forum for the discussion of an international grain reserve. I think of a different setting for that type of discussion, a setting that would involve those immediately responsible for the management of production and holding and marketing facilities in the various countries whereas I think this forum is largely a scientific exchange forum.

Mr. BROWN. Dr. Flory, you obviously feel that this is a forum in which we can discuss the kind of a framework that you have suggested for international agreement—for international scientific exchange.

Do you think that a substantial number or majority of the participants in this forum would look sympathetically upon the kind of proposal you just suggested?

Dr. FLORY. Do you mean, Mr. Chairman, participants from other countries?

Mr. BROWN. Yes. I'm inclined to feel that it—if it will reassure you—that a majority of the Congress will. But, I'm wondering how the scientific community will feel.

Dr. FLORY. Thank you. It's difficult to know. I think we only have scattered information. Dr. Handler has mentioned some. I expect substantial support from the French, and from the Canadians if they go, and presumably from a number of other countries, support for the views that I think most of us are prepared to uphold strongly.

Perhaps this is an added reason for participating in the meeting, in order to support our friends and have them support us. Yes, I think there will be a reasonable consensus in the West.

Mr. BROWN. Dr. Handler, you have indicated a willingness to give the Congress, members of the committees involved in this hearing, the benefit of the reaction of the participants from the United States in this forum. I would like to extend that as a specific invitation.

We would like to invite each of the members, without necessarily trying to seek a consensus, but in the same spirit that they are going there, as individuals to give the Congress through these committees their own evaluation of the results of this forum and what it portends for improvement in the quality of our science exchanges and the improvement of respect for human rights in the countries that are involved.

[The report of the conference and Dr. Handler's research are contained in the appendices.]

Dr. HANDLER. I'm sure that the entire delegation would welcome such an opportunity, Mr. Chairman.

Mr. BROWN. Mr. Ritter, do you have some questions?

Mr. RITTER. Yes.

First, Mr. Chairman, I'd like to request that the testimony sent to the subcommittee for this particular hearing of Valentin Turchin be included in the record. That is his testimony for the subcommittee, plus his letter entitled on the "Scientific Forum to Convene at Hamburg February, 1980," which I believe was printed up today.

Mr. BROWN. Without objection, that will be made a part of the record.

Mr. RITTER. Thank you very much, Mr. Chairman.

[The material mentioned above follows:]

VALENTIN F. TURCHIN
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Forest Hills, New York 11375
(212) 544-0041

Hon. George E. Brown
Chairman,
Subcommittee on Science, Research and Technology
US Congress

30 January 1980

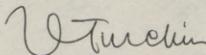
Dear Mr. Brown:

May I respectfully submit to the Subcommittee on Science, Research and Technology my testimony for the hearing to be held on January 31, 1980 .

Enclosures:

- (1) The testimony on 3 pages.
- (2) The appendix "On the scientific forum to convene in Hamburg, February 1980", on 4 pages.

Yours sincerely



Valentin F. Turchin

TESTIMONY

for the hearing of the Committee on Science, Research and Technology
on January 31, 1980

by Valentin F. Turchin

The Soviet invasion of Afghanistan marks the collapse of the policies based on what may be called "the principle of symmetry". In particular, the approach to the problem of relaxation of international tension known as "the policy of detente" has been based on this principle. It states that the post-Stalin Soviet leaders are as willing to reduce international tension and eliminate conflicts as the Western leaders are, and that the reason for the hostility between East and West is just mutual fear and distrust, a hangover from the "cold war". Therefore, the argument went on, we only should show our good will clearly enough, and this will support "doves" in the Soviet party bureaucracy while making the fears of "hawks" unfounded.

This presumption, however, has been completely wrong. There is no symmetry of motivations, there is rather an "anti-symmetry". Free flow of people and ideas, which is inseparable from a true international cooperation, has been always considered extremely dangerous by the Soviet bureaucracy. They want good relations with the Western nations only if and to the extent these nations help them to hold their totalitarian power inside their own country. They want trade and international prestige through such undertakings as Olympic games, but they do not want interference on behalf of political prisoners. They may not want a global nuclear war, but they want a certain level of international conflicts and instability, as well as expansion of their sphere of influence. The oppression inside the country and external aggression are two aspects of the same policy, which is a direct consequence of the position of the party bureaucracy as a privileged class holding power through a ruthless and all-embracing dictatorship. A democratically elected government need not justify its right to govern: the fact of being elected is the justification. A dictatorship must be constantly

justified and defended. The very existence of a free and prosperous West is an indictment on the Soviet system and a threat to its chieftains.

The difference between "hawks" and "doves" (if any) in the Kremlin is not that the "doves" are more "liberal", or hate Western democracies less than the "hawks". It is preposterous to think that the doves need demonstrations of the peaceful intentions of the West in order to hold them out to the hawks. On the contrary. The doves are those who believe more in the ability of the West to hit back, and therefore profess caution. This is the anti-symmetry; doves in the West support and encourage hawks in the USSR, while the hawks support the doves.

It took about ten years of systematic encouragement of the Soviet hawks to create an atmosphere in which the Soviets deemed it possible to invade an independent third world country. Simultaneously with becoming more aggressive, the Soviet rulers cracked down on the human rights movement. The year 1979 was marked by a sharp increase in repressions, which passed unnoticed by the Western public opinion. Let me mention only most well-known human rights activists who were arrested during last three months: T.Velikanova, Yu.Grimm, V.Sokirko, father D.Dudko, V.Abramkin, V.Sorokin, father G.Yakunin, R.Kadyev, M.Soglovlov, L.Regelson, A.Terlackas, Yu.Sasnauskas, V.Kalinichenko, M.Prutianu, V.Streltsiv, A.Pozniakov, M.Gorbal, V.Goncharov, A.Stasevich, V.Mikhailov, A.Gotovtsev, T.Shchiphkova. The logical continuation (although, I am afraid, not conclusion) of this course of action was the detention and exile of academician A.Sakharov.

The measures taken by President Carter in the present critical situation are proper, if not sufficient. The notion of human rights emphasized by Carter at the beginning of his presidency should be reemphasized once more. One must bear in mind that the only hope for a peaceful and secure world is in the success of the human rights movement in the USSR. The pressure on the Soviet rulers should be exerted with the view of compelling them to release political prisoners and curb repression inside the country, not only to stop aggression outside. Otherwise the roots of the aggression will remain and will produce new and new sprouts.

A boycott of Olympic games will be a significant blow on the prestige of the ruling class in the eyes of the population in the USSR.

So will be a boycott of scientific and cultural contacts, if duly explained as an inevitable reaction of free people on the violations of human rights in the Soviet Union. In particular, the Scientific Forum to convene in Hamburg in the framework of the Helsinki Accord should be boycotted if the Soviets do not release Prof. Yuri Orlov and the other members of Helsinki Watch groups (see appended article).

To succeed, the boycotts must be widely supported and uncompromising. It would be a good idea to suspend all contacts for a specified term, say a year, provided that this idea is shared by the public and not just imposed by Government or Congress. After a year, a decision could be taken on the basis of the Soviet behaviour, whether to stop the boycott or continue it, like it was suggested in the case of the Jackson amendment, which proved instrumental in the long run. The boycotts should concern only the USSR and not its satellite countries, which do not have a freedom to choose their way.

The Soviet leadership has shown that they completely ignore all appeals and protests. In the present situation nothing that falls short of really hurting measures as boycotts and embargoes can make any impact on the Soviets. Verbal exercises will only amuse and encourage them.

V. Turchin

Valentin F. Turchin
Professor of Computer Science
The City College,
The City University of New York

Appendix: an article by the same author On the scientific forum to convene in Hamburg, February 1980 .

(A shortened version of this article is published in
Physics Today, January 1980, p. 11 .)

ON THE "SCIENTIFIC FORUM"
TO CONVENE IN HAMBURG
FEBRUARY 1980

by
Valentin F. Turchin

Next February 18-29 an international meeting will take place in Hamburg, FRG. It is referred to as the "Scientific Forum" by the Final Act of the Helsinki Accord of 1975, where this concept was first introduced, and by the concluding document of the Belgrade meeting, which reconfirmed the decision to convene the Scientific Forum. A preparatory meeting of experts was held in June 1978, where the "agenda and modalities" for it were worked out.

The experts meeting defined the aims of the Hamburg Forum in the following words:

"The Scientific Forum will be held in conformity with the relevant provisions of the Final Act, in the form of a meeting of leading personalities in science from the participating states to broaden and improve co-operation and exchanges in the field of science and thus to continue the multilateral process initiated by the Conference on the Security and Cooperation in Europe."

What is this multilateral process?

The idea of the Helsinki Accord, as seen from the West, was to promote security and co-operation in Europe by formally recognizing the post-war borders in exchange for a formal Soviet pledge to observe basic human rights and to remove obstacles impeding the free flow of information and ideas. It is because of this supposed give and take that the Helsinki Accord was regarded universally not as just one more retreat by the West but, hopefully, as a way to make the Soviets behave in a more civilized, if not humane, manner.

However, the Soviet side, having signed the Accord and celebrated it as a great victory, safely ignored its part of the bargain. Not only did the Soviet rulers fail to liberalize their policies, they sharply stepped up repression in connection with the Helsinki Accord itself. Soon after the signing of the treaty eleven Soviet citizens in Moscow established a public "Helsinki Watch" group to monitor Soviet compliance with the humanitarian provisions of the Final Act. The group was led by Prof. Yuri Orlov, a prominent physicist, corresponding member of the Academy of Sciences of the Armenian SSR. Analogous groups were formed in the Ukraine and other Soviet republics, and then in other countries, including the United

Valentin F. Turchin is a former Soviet dissident, chairman of the Amnesty International group in Moscow. He emigrated to the USA in 1978 and is now teaching computer science at the City College, the City University of New York.

States. Thus Prof. Orlov initiated an international citizens' movement which supports the goals of the Helsinki Accord by monitoring the compliance of the participating governments with the obligations which they assumed in that agreement.

The Soviet government responded to this initiative with arrests. Since February 1977, more than 20 members of Helsinki Watch groups in the Soviet Union have been arrested, tried, and sentenced to long terms of imprisonment. Prof. Orlov, who is now 55, was sentenced to 12 years' deprivation of freedom, beginning with 7 years in strict regimen prison camp.

It is true that nobody in the USSR takes the regime's word at its face value. Prof. Orlov and his friends understood that they could be arrested. And still many believed that the arrests of Helsinki monitors would be impractical for the Kremlin, because of the implications for the important Helsinki Accord. To put Helsinki monitors into prison would be such an obvious and defiant violation of the Helsinki Accord that it would endanger its very existence.

But the KGB strategists reasoned better. They reckoned that they would get away with it, and they did. Some Western officials protested, but the Soviets experienced no real trouble. It never came close to even mentioning the possibility of rescinding the Helsinki Accord. The result: instead of becoming the first working example of a direct formal link between human rights and political relations, the Helsinki Accord became just one more in the long row of examples that teach the difference between what politicians say and what they mean. It became an invitation to consider human rights a sort of sauce or dressing on international agreements, which is useful to produce a good impression at home and abroad, but should not be taken seriously. The Helsinki Accord downgraded the concept of human rights, instead of upgrading it.

But let us come back to scientists. The trials of Yuri Orlov and Anatoly Shcharansky, as well as the continuing imprisonment of biologist Sergei Kovalev, sent a wave of indignation among the scientists of Europe and North America. Many announced that they would not take part in any scientific exchanges with the Soviet Union until Orlov, Shcharansky and Kovalev are freed. I am sure that it made due impression on the Soviets and saved from arrest some unknown number of potential prisoners. Unfortunately, the boycotting scientists are only a small minority; should they be more in numbers, the effect would be more spectacular. But there are committees, such as SOS ("Scientists for Orlov and Shcharansky") in the USA and the Committees of Mathematicians and Physicists in France, which continue the work on behalf of their colleagues in Soviet prisons.

While a minority of scientists are concerned about human rights in the world and try to induce the Soviet regime to release the imprisoned scientists, the representatives of the institutionalized majority (the American delegation, for example, is to be led by Philip Handler, President of the National Academy of Sciences) will go to Hamburg to continue the "multilateral process" that led physicist

Yuri Orlov, computer scientist Anatoly Shcharansky, and other Helsinki monitors into Soviet prisons. With all the best intentions the Western scientists gathering in Hamburg may have, their main achievement will be the endorsement of the status quo with respect to the Helsinki Accord and the imprisoned human rights activists. Because the Scientific Forum is a political event par excellence. It is not to coordinate scientific research between America, Belgium, France, etc. that the Forum will convene, nor even to coordinate research between the Western countries and the Soviet bloc countries. All those things could be done, if necessary, in technical meetings, without bearing any relation to the Helsinki Accord. Its goal is to approve "the multilateral process" as it is, and to tie to it some specific agreements and technical arrangements in the field of science. The scientific and public reputation of the prominent scientists who take part in the Forum will be given to this cause.

Human rights are not mentioned in the agenda of the Scientific Forum. But the agenda does provide a possibility to discuss obstacles to East-West co-operation. Suppose for a moment that some of the participants use it to raise the issue of human rights and, specifically, the imprisonment of Prof. Orlov and others. Unfortunately, there is no reason to be optimistic about the results. One can predict what will happen from the experience of other international scientific conferences. Those scientists who are prepared to take a strong action in protest over the imprisonment of a scientist, or official refusal to permit the journey of an invited scientist, etc, invariably find themselves in minority, so that only a very mild, if any, resolution can be passed. Of course, even a mild resolution is welcome and makes the overall human rights balance positive when it is an addition to a quintessentially non-political event: a scientific conference. But, the Scientific Forum is essentially a political event. The more than probable failure of potential human rights activists to secure an adequate response to the repressions in the USSR will only stress the overall victory of the Soviets. "Although a miserable handful of spiteful enemies of detente," Soviet papers will say, "tried to hamper the work of the Scientific Forum, the scientific community showed that it wholeheartedly supports the growth of East-West co-operation and the principle of non-intervention into the internal affairs proclaimed by the Final Act of the Helsinki Accord."

Yuri Orlov's health is rapidly deteriorating in the awful conditions of a Soviet prison camp. His wife, who visited him on August 21, wrote that he looked extremely emaciated and thin; his teeth are decaying. He is forced to work on a machine-tool, his head and spine ache, and he cannot fulfill the daily work quota. Three times he has gone on hunger strike to get back his confiscated scientific notes and to protest other arbitrary actions. Still he is not allowed to exchange letters with scientific contents, even with his son, who is also a physicist.

No better is the condition of Anatoly Shcharansky, whose eyesight is deteriorating, and Sergei Kovalev, who underwent a serious operation. Mykola Rudenko, a talented writer and the organizer of the Ukrainian Helsinki group, is a disabled veteran of World War II; one can imagine his suffering. The condition of another Ukrainian Oleksa Tykhy is so bad that he may die any day.

I believe that there should be no Scientific Forum so long as Prof. Orlov and the other Helsinki monitors are imprisoned. By taking part in the Forum, scientists would signal their acceptance, if not approval, of the way the Soviets comply with the Helsinki Final Act.

V. Turchin

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Mr. RITTER. I would like to question the panel for a moment on how they view the Olympic boycott. What are their personal opinions on the Olympic boycott? Dr. Handler?

Dr. HANDLER. In all honesty, Mr. Ritter, I have found that that's a very touchy subject in several ways, the principal one being the ease of analogy of going to the Olympics and going to Hamburg or going to a scientific meeting that's to be convened in Novosibirsk, or wherever.

I really don't think the analogy stands very well when it's examined very closely.

Mr. RITTER. You would support not going to the Olympics?

Dr. HANDLER. I would hold the Olympics to be more analogous to the various other things that we are cutting off. Just as we are not going to have a series of bilateral seminars that are already scheduled. Part of the program that we are keeping is the more or less one-for-one kind of program.

We will continue that.

Mr. RITTER. Yes. I was considering the multilateral forum of a large group of nations itself—

Dr. HANDLER. If the CSCE meeting were about to meet in Moscow, I would have second, third and fourth thoughts about it, but it's a meeting in Hamburg at the invitation of the Federal Republic of Germany. I find that a great distinction.

Mr. RITTER. Dr. Flory?

Dr. FLORY. I concur that there is a major qualitative difference between science exchange, scientific cooperation—

Mr. RITTER. I'm thinking of the Hamburg meeting precisely in the same context with the Moscow Olympics.

Dr. FLORY. If it were in Moscow?

Mr. RITTER. Now, I'm thinking of the scientific forum to be held at Hamburg and its comparison with the Moscow Olympics.

Dr. FLORY. Its impact on Moscow?

Mr. RITTER. People have said that we are not supposed to mix politics and sports and we are not supposed to mix politics and science.

Dr. FLORY. I don't look on this as sport. For my personal pleasure, I would gladly be released from the obligation to go to Hamburg. If I were a sports fan going to the Olympics, or if I were participating in the Olympics, my attitude would be entirely different.

Mr. RITTER. Isn't the attitude of the athlete analogous to those of the scientists, that they can build bridges, human bridges, individual bridges and that they are not to be mixed with politics?

Dr. FLORY. I doubt that we shall be effectively building bridges in the context of this meeting. What we once hoped to accomplish through our cooperative scientific endeavors is perhaps being accomplished in a few areas in a few projects of cooperation, but generally our efforts have failed.

No; I don't look on the Hamburg meeting as an opportunity to build that kind of personal contacts.

Mr. RITTER. Because having read—well, at least four out of five of your preconditions or conditions that you say judiciously conducted cooperative endeavors could be of mutual advantage if compliance with the foregoing conditions can be assured. Well, the first four,

there has been no real compliance, as we all know. I think the mutual benefit is often complied with. That is at least the attempt to insure mutual benefit. But, given that we don't have those conditions, you know, are we banging on steel doors with our fists while they use this as justification for their legitimacy under the Helsinki accords, the Final Act?

Dr. FLORY. These conditions address what I would call normal scientific meetings in which the thrust of the meeting is for hard science.

Mr. RITTER. We know—

Dr. FLORY. The meeting of the Scientific forum is about science, but not a scientific meeting as we ordinarily use the term. Maybe that poses a major difference. It's about science, but does not comprise science itself.

Dr. HANDLER. May I come back to your question? As I understand it, the Helsinki Accord is called an agreement. It is not a treaty. There are no sanctions specified anywhere in that agreement for anyone who violates any of its provisions.

The only opportunity we have to take someone to task and say that "This is what you agreed to do, and this is the way you have agreed to behave and do it by confrontation, face to face, are the meetings specified in the Helsinki Act itself.

Otherwise, we can write letters to the editor of the New York Times, or we can send letters to President Aleksandrov, to which he probably will not respond. He responds to mine, but he does not respond to most. We can write letters to the Procurator General which he does not acknowledge.

Here is a built-in opportunity to have two dozen very senior Soviet scientists, academicians, sitting in front of us and we can talk to them. Whether they will be listening is uncertain. Whether they will bring the message home is uncertain.

Mr. RITTER. Obviously, the positive side. The negative side is that in the face of all that they have done in this past year, we still legitimize the science and technology basket by participating.

Dr. HANDLER. It's a human rights basket, mostly that is a problem. And, there are 35 signatory nations. We and the Soviets are but two. All of the delegations from all of the other Eastern bloc nations will be there and listening, or, I hope they will.

I assume there is no way to undo the Helsinki Act.

Mr. RITTER. Their response at the highest level is likely to be "so what?"

Dr. HANDLER. Quite conceivably, and I said in my statement, I have precious little hope. My statement said as much. But I think it's worth the try. I think that to stay away is to forgo the opportunity and, indeed, to allow them the privilege of escaping the kind of international scrutiny for which this machinery was established.

It may not be terribly effective, but I think not doing it is even less effective.

Mr. RITTER. That's a good question.

Dr. FLORY. May I comment?

Mr. RITTER. Of course.

Dr. FLORY. If the Helsinki Accords machinery were to be scrapped, that's an issue that goes beyond this meeting. If it were to be scrapped,

then the answer is obvious. It seems to me that if we regard the Helsinki Accords still as binding documents, then the Hamburg meeting is a part thereof.

It would seem obligatory, therefore, that we do what we can, however little that might be. We should not overlook the impact of our presence and what we hope to say on some, at least, of the uncommitted or less committed Eastern bloc countries.

They will also be represented there. I would be cautiously hopeful that we may have some impact on them, and certainly we should support our friends and allies.

Mr. RITTER. Dr. Acker?

Dr. ACKER. I see the Olympics and this forum as sharply different, primarily because of location.

Mr. RITTER. Thank you, Mr. Chairman.

Mr. BROWN. Gentlemen, thank you very much for your contribution to our hearing this afternoon and your patience in tolerating the many interruptions. We appreciate it very much and we wish you the very best of luck in your trip to Hamburg.

Before calling the last panel, I am going to call Andrei Tverdokhlebov who is a longtime Soviet human rights activist, physicist, and close friend of Andrei Sakharov. Along with Sakharov and Valery Chaldize, Mr. Tverdokhlebov helped to form one of the first dissident groups in the U.S.S.R., the Moscow Human Rights Committee, and he was instrumental in establishing a section of Amnesty International in the Soviet Union. In 1976, he was sentenced to 5 years of internal exile for "anti-Soviet fabrications," and emigrated from the Soviet Union on January 22, 1980. He has very recently arrived in this country from Moscow where he has been in close touch with Andrei Sakharov and I ask him to make a brief statement at this time. Would he come forward?

We welcome you, Mr. Tverdokhlebov, and you may correct the pronunciation of your name, if you will. As you well know, the Congress and the people of the United States are very much concerned about the condition of Andrei Sakharov. It is a matter which is, of course, being discussed at great length not only in this hearing today, but in the entire scientific community and amongst the American public to a very great extent.

We would welcome your report to us this afternoon and any views that you would like to express on this matter.

STATEMENT OF ANDREI TVERDOKHLEBOV, SOVIET PHYSICIST AND HUMAN RIGHTS ACTIVIST

Mr. TVERDOKHLEBOV. Thank you.

One is often asked why so many Soviet physicists become involved in human rights activities. Why is there such a high percentage of Soviet physicists and mathematicians among Soviet human rights activists?

For example, Andrei Sakharov, Yuri Orlov, Tatiana Velikanova, Lev Regelson, Robert Nazaryan, and Anatoly Shcharansky. I have mentioned here only some well known mathematicians and physicists who are now imprisoned for human rights actions.

In the 1940's and 1950's, physics because of its many military applications, became the most prestigious branch of Soviet science.

Physics was allowed the exclusive privilege of freedom, and it was given the best possible material support.

Therefore, faculties of physics and mathematics had the greatest choice among students who wanted to study these subjects. On the average, 1 out of 20 to 30 students was chosen for these faculties.

Furthermore, the authorities had to go beyond their usual ideological limits in the selection of such students, since rockets and bombs required special knowledge and high technical qualifications.

This is my answer to the question why so many Soviet physicists became involved in human rights activities.

It seems to me that this question would not arise in regard to professional publicists, cultural figures and sportsmen—that is, those professions which are normally in the public eye. Such a phenomenon would have been more in line with the Western cultural traditions. One example: American athletes showed their protest at racial discrimination during the Olympic games by raising their gloved hands.

At present, however, physics and mathematics have less prestige in the eyes of Soviet officials. I do not know which professional group will take the place of physicists and mathematicians in regard to human rights activism. The general cause cannot be found in tightened ideological control in all areas of culture.

I do not share the opinion that most Soviet citizens are apolitical, taking refuge by supporting ideological slogans at public events. On the contrary, I think many Soviet citizens are really involved in the internal political processes.

In fact, these people are working and following in the footsteps of that political trend which became predominant in the late 1920's and early 1930's in the U.S.S.R. and which then took a back seat in the midfifties.

It seems to me, that my latest comments are relevant to the theme of the scientific forum and of the hearing today—the implications of recent international events such as the Afghanistan invasion for the future of East-West scientific cooperation, including cooperation with the People's Republic of China. I think these are extremely important problems.

In addition, I hope that my remarks will help American scientists formulate ideas and methods for the support of their colleagues in the U.S.S.R.

[The prepared statement of Mr. Tverdokhlebov follows:]

OPENING REMARKS OF ANDREI TVERDOKHLEBOV

One is often asked why so many Soviet physicists become involved in human rights activities. Why is there such a high percentage of Soviet physicists and mathematicians among Soviet human rights activists? For example, Andrei Sakharov, Yuri Orlov, Tatiana Velikanova, Lev Regelson, Robert Nazaryan, and Anatoly Shcharansky. I have mentioned here only some well known mathematicians and physicists who are now imprisoned for human rights actions.

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In addition, I hope that my remarks will help American scientists formulate ideas and methods for the support of their colleagues in the USSR.

Mr. BROWN. Thank you very, very much, Mr. Tverdokhlebov. Let me ask you just one question. What course of action on the part of the American scientific community would have the greatest effect in changing the course of action which the Soviet Government has now undertaken, one of strong, drastic reaction? I won't detail the many kinds of strong, drastic reactions, but it might include, say, cutting off all scientific contact, or do you think it would be best to maintain a course which maintained the maximum possible scientific communication while making smaller changes which did not alter the basic framework of the relationship?

Mr. TVERDOKHLEBOV. I think the main thing is that American scientists should not retreat from their concern with support of human rights activists in the Soviet Union. I have faith in the creative abilities of American scientists also in this regard and am confident that they themselves will find the best methods.

Mr. BROWN. Mr. Ritter?

Mr. RITTER. Dr. Tverdokhlebov—and incidentally, that name means of the hard bread. That's a strong name.

Mr. TVERDOKHLEBOV. Thank you.

Mr. RITTER. What is your opinion of the communication that we have received and that the technical community has received from Dr. Valentin Turchin regarding an attempt upon part of the Western and particularly the American scientific community to stay away and not give legitimacy to the Hamburg Scientific Forum?

Mr. TVERDOKHLEBOV. One cannot isolate one action from another one. In the United States, it has been said that international cooperation would act as a restraint on Soviet domestic and international policies. Recent events would seem to have shown your assessment to have been accurate.

I would like to say that, nevertheless, this popular opinion was correct. The lack of success of this policy is because of other factors which have entered into the picture and should not be attributed to scientific cooperation.

In short, in response to your question, I would like to say that you can't isolate one particular approach from a series of other approaches in regard to solution of the problem which you have raised. I have not yet had the opportunity to meet with Valentin Turchin and discuss with him what he meant in addition to his suggestion that American scientists boycott the scientific forum. I'm sure that he had a series of ideas in mind.

And therefore, I cannot at this point say if he was correct in regard to that one concrete suggestion which he made.

Mr. RITTER. Thank you, Mr. Chairman.

Mr. BROWN. Do you have any information with regard to the condition of Dr. Sakharov that you might be able to report to us at this time?

Mr. TVERDOKHLEBOV. I don't know.

Mr. BROWN. Thank you very much. We have no further questions. We very much appreciate your being here today to give us the statement that you have.

Mr. TVERDOKHLEBOV. Thank you.

Mr. BROWN. I'd like now to call the last panel to come forward. This is a panel representing various scientists and scientific organizations. This distinguished panel is composed of the following people: Anthony Ralston, former president of, and representative for, the Association for Computing Machinery; Dr. Max Gottesman, Committee of Concerned Scientists, National Cancer Institute, National Institute of Health; Prof. John Edsall, professor emeritus, Harvard University, chairman of AAAS Committee on Scientific Freedom and Responsibility; Dr. Herman Feshbach, head, Department of Physics, Massachusetts Institute of Technology.

Gentlemen, I know you have waited a long time and I owe you many apologies for the delay that has occurred here this afternoon. We are very privileged to have you here.

STATEMENTS OF A PANEL CONSISTING OF ANTHONY RALSTON, FORMER PRESIDENT, ASSOCIATION FOR COMPUTING MACHINERY; DR. MAX GOTTESMAN, COMMITTEE FOR CONCERNED SCIENTISTS, NATIONAL CANCER INSTITUTE, NATIONAL INSTITUTE OF HEALTH; PROF. JOHN EDSALL, PROFESSOR EMERITUS, HARVARD UNIVERSITY AND CHAIRMAN OF AAAS COMMITTEE ON SCIENTIFIC FREEDOM AND RESPONSIBILITY; AND DR. HERMAN FESHBACH, HEAD, DEPARTMENT OF PHYSICS, MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Mr. BROWN. I don't know how you have organized yourselves. Are we going to go in order of age, or good looks, or what? [Laughter.]

Dr. FESHBACH. As we are called by the chairman.

Mr. BROWN. All right. Dr. Edsall, would you start first since you look the most eager?

Dr. EDSALL. Thank you, Mr. Chairman.

Since the hour is late, I will not try to read all of my testimony, but emphasize some of the major points.

Mr. Brown, the full text of your testimony will be included in the record and you may focus in whichever way you wish.

Dr. EDSALL. I would emphasize I share, of course, our sense of outrage over the treatment of Dr. Sakharov and over the Russian invasion of Afghanistan. But, I will address myself particularly, in connection with the Hamburg forum, to the second part of the stated business of that forum, which is, promote the expansion of contracts, communications, and exchange of information between scientific institutions and among scientists.

When it comes to attempting to expand such contact and communication, we can propose some important changes to the Russians. It is well known that there are distinguished Soviet scientists who are invited to take part in international conferences abroad. They often face great obstacles in obtaining passports and permission to travel. And these difficulties were documented by Dr. Zhores A. Medvedev in a book that is entitled "The Medvedev Papers" in the English translation. It was written more than 10 years ago, while he was still in the Soviet Union.

He was refused permission to return to the Soviet Union and has been living in England for some years. The troubles that he has noted still continue. A 1978 editorial in *Science* signed by Philip Abelson says that :

The organization and conduct of a large international meeting is a huge task. Almost invariably, the organizers find that by far, their worst headaches come from the Russians. Many of them send in abstracts and announce their intention to participate. But when the time comes perhaps half will be permitted to attend, thus leaving gaping holes in the schedule of papers. In other instances, a group of uninvited or unscheduled people will show up demanding space on the program. The paper of an invited distinguished scientist will often be read by a party hack. When the international meeting is held in Russia, there are usually visa problems. The international scientific community should not tolerate such forms of behavior.

My personal belief is that if they send substitutes to meetings who are not qualified scientists, we should admit them to the meeting, but we should refuse any opportunity for them to speak, since they are not the qualified scientists who had been invited.

Also, an effective exchange of information and communication among scientists requires, among other things, prompt and complete circulation of scientific publications. The American Association for the Advancement of Sciences has encountered extensive censorship of its principal journal, *Science*, in the Soviet Union.

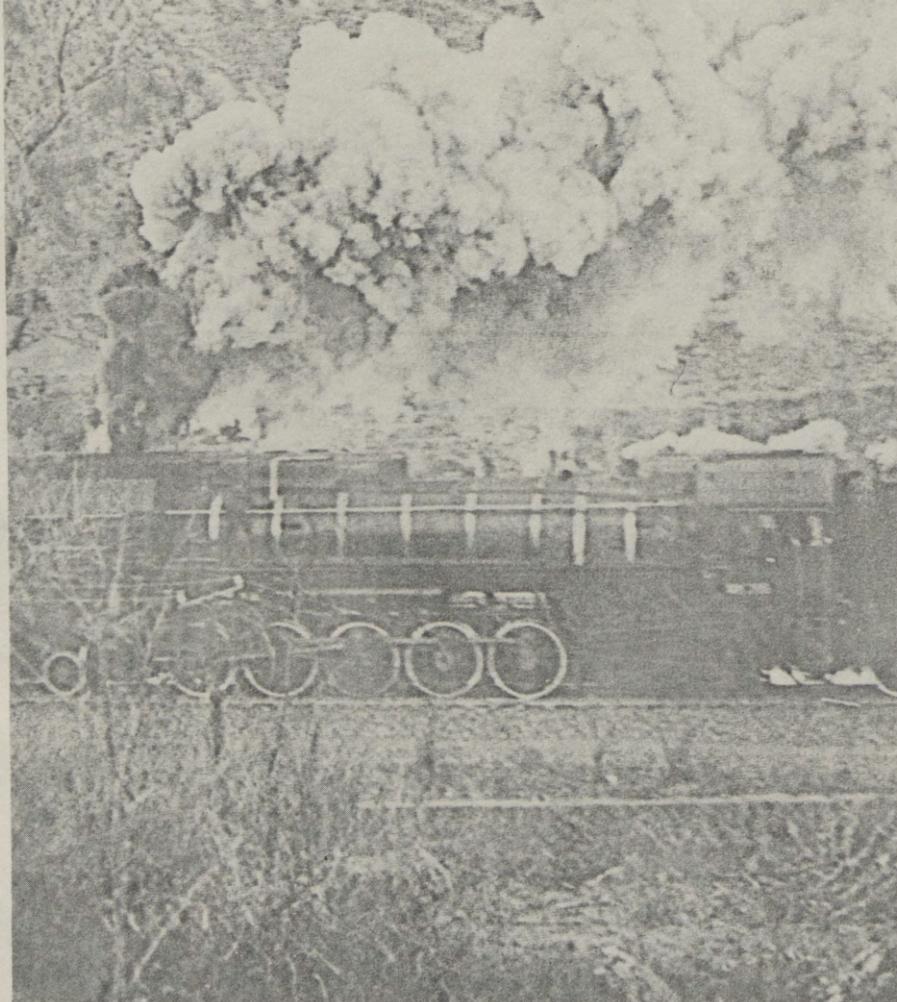
I have here a striking example of this. Look at the issue of the 9th of February 1979.

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The American Association for the Advancement of Science was founded in 1848 and incorporated in 1874. Its objects are to further the work of scientists, to facilitate cooperation among them, to foster scientific freedom and responsibility, to improve the effectiveness of science in the promotion of human welfare, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.

This is the issue as it appeared in this country. You will see that there is a picture of a locomotive on the cover. This happens to be a Chinese locomotive.

The Russian version of the cover of this issue was simply a blank, with the word Science and the date. Usually, in the Russian version, they print what is on the cover, but in this case they did not. Inside, there were several articles about Chinese science in this issue. These were all deleted from the Russian version. Numerous articles dealing with such matters as the controversy over laetrile and various other items were also deleted.

Altogether, in the course of a year, some 21 issues of Science had material removed in this way, many of the deleted articles dealing with items that could not conceivably have been considered dangerous for Soviet scientists to hear.

But certainly, articles relating to such topics as human rights, Soviet-American relations and the People's Republic of China have been consistently deleted. Mr. William Carey, the executive officer of AAAS sent a courteous but emphatic protest, concerning these deletions from Science to President Anatoliy Aleksandrov of the Soviet Academy of Science. As yet, Mr. Carey has received no reply.

We hope that the Hamburg Forum will consider the matter of censorship of material in scientific journals, and that the U.S. delegation will urge the free transmission of scientific journals, complete and intact, across national boundaries everywhere.

I believe that one significant result of the Science Forum that might be suggested by our delegation would be the creation of a working group charged with collecting and reviewing reports regarding obstacles to international scientific cooperation.

Because of the decentralized and pluralistic nature of scientific communication, it is very difficult to evaluate the overall impact of individual passport and visa restrictions, the random substitution of invited conference speakers by others who are unqualified, or ad hoc restrictions on scientific publications.

These actions inevitably affect the process of international scientific communication, but there is at present no monitoring group to collect and review these restrictions.

A working group established by scientists from the Helsinki signatory nations could study and identify specific barriers to scientific cooperation. If the necessary resources for such a group were not available, the Forum might draw upon the International Council of Scientific Unions (ICSU), which has two subcommittees charged with reviewing restrictions on ICSU-sponsored meetings and identifying other barriers to the pursuit of science.

The Forum could, for example, request ICSU to provide a formal report on this issue to the Helsinki signatory nations at their next meeting in Madrid. I urge our delegation to recognize the importance of establishing such a group to identify obstacles to scientific communication if they are to be taken seriously by those interested in improving existing methods of scientific cooperation.

The Forum will presumably consider the larger issues of scientific exchange between the United States and the Soviet Union and its satellites. Here, I would draw an important distinction between exchanges in basic science and in technology.

President Carter has halted certain types of sales and exchange programs in the area of advanced technology, for reasons of policy with which I agree. However, in the area of basic science that offers no immediate applications in technology, I would hope that exchange will continue, though perhaps on a diminished scale.

The agenda of the Hamburg Forum does not include the larger issues of human rights and their violation. Nevertheless, such issues inevitably have a powerful influence on our views concerning scientific communication and exchange of information with the Soviet Union.

I have emphasized our deep concern about human rights, about not only Sakharov, but about other scientists such as Yuri Orlov and Sergei Kovalev who were imprisoned primarily for their activities on behalf of human rights and the monitoring of the Helsinki Accord. There is also the more widely publicized case of Anatoly Scharansky: the mistreatment of these scientists has created profound anger and dismay among many American scientists.

These matters are not on the official agenda of the Hamburg Forum, but we hope that they will be on the minds of our delegation and others, who will convey to the Soviet delegates our deep concern about these violations of human rights, in the course of informal discussions at the meetings.

That's all I would attempt to say.

[The prepared statement of Dr. Edsall follows:]

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TESTIMONY TO THE COMMISSION ON SECURITY AND COOPERATION
IN EUROPE, THE SUBCOMMITTEE ON INTERNATIONAL SECURITY AND
SCIENTIFIC AFFAIRS, AND THE SUBCOMMITTEE ON SCIENCE, RESEARCH
AND TECHNOLOGY, U.S. HOUSE OF REPRESENTATIVES

BY

JOHN T. EDSALL

CHAIRMAN

COMMITTEE ON SCIENTIFIC FREEDOM AND RESPONSIBILITY
AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

JANUARY 31, 1980

I appreciate the honor of taking part in these hearings.

My name is John Tileston Edsall. I am Professor Emeritus of Bio-chemistry at Harvard University, and Chairman of the Committee on Scientific Freedom and Responsibility of the American Association for the Advancement of Science. It is in the latter capacity that I have been asked, by the officers of the Association, to testify at the present hearings relating to the Conference on Security and Cooperation in Europe. Because I received the invitation to testify, on very short notice, I have not been able to submit this testimony for review by the AAAS Committee, so that it necessarily represents my personal views. The statement has been reviewed by the AAAS Executive Officer, William D. Carey, who has expressed agreement with it, and I believe that these views are shared by many other scientists.

This hearing has been called to discuss the "Scientific Forum", scheduled to be held in Hamburg, from February 18 to 29. My remarks are addressed entirely to the second part of the stated business of the Forum, namely "...to promote the expansion of contacts, communications, and the exchange of information between scientific institutions and among scientists." Two months ago these matters would have been considered a part of our normal activities in East-West relations. Although there were already many obstacles to free communication and exchange of information, especially between the United States and the Soviet Union, I believe that you would not then have felt it necessary to hold hearings on the subject before the Forum. The events of the last month have

radically changed all that. The Soviet invasion and occupation of Afganistan has created shock and outrage in this country, and has led President Carter, among his other actions, to cancel certain sales to, and exchanges with, the Soviet Union involving American high technology. Moreover, the action of the Soviet Government in stripping Academician Sakharov of his honors, and sending him into internal exile, has aroused indignation and alarm among American scientists. It is a move intended, not to promote, but to inhibit "contacts, communication, and exchange of information" among scientists, and in that sense it could be read as a signal that the USSR is consciously opposing the objectives of the Hamburg Forum. We have also received much information indicating that the Soviet Union has decided to crack down harder than ever on dissenters. As strained as is the present situation between the United States and the Soviet Union, we have to keep talking, if possible, so that we do not lose touch altogether. The Forum provides an opportunity for scientists from different countries, who share common interests and common criteria of judgment regarding most purely scientific problems, to carry on mutual discussions in a time of turmoil.

When it comes to "the expansion of contracts, communication and exchange of information", there are important changes that we can propose to the Russians. It is well known that distinguished Soviet scientists who are invited to take part in international scientific conferences abroad often face great obstacles in obtaining passports and permission to travel; even though they are eager to accept such invitations they may be obstructed by administrative obstacles. Organizers of international scientific conferences, here and elsewhere, have experienced such problems again and

and again; Dr. Zhores A. Medvedev has described in detail, from the point of view of a Russian eager to maintain international scientific contacts, the complicated and frustrating bureaucratic maneuvers that prevented him from attending conferences abroad, at which he had been invited to make major addresses, and also prevented him from accepting an invitation to undertake joint research with colleagues in the United States. (See "The Medvedev Papers" Macmillan, London 1971). These experiences relate to the 1960s; the situation may have improved somewhat since then, but many of the same difficulties certainly still remain. As noted in a 1978 editorial in the AAAS journal, Science, signed by Philip Abelson:

The organization and conduct of a large international meeting is a huge task. Almost invariably the organizers find that by far their worst headaches come from the Russians. Many of them send in abstracts and announce their intention to participate. But when the time comes perhaps half will be permitted to attend, thus leaving gaping holes in the schedule of papers. In other instances a group of uninvited or unscheduled people will show up demanding space on the program. The paper of an invited distinguished scientist will often be read by a party hack. When the international meeting is held in Russia there are usually visa problems. The international scientific community should not tolerate such forms of behavior". (September 29, 1978)

It has been difficult to know how to deal with such cases of substitute speakers. One does not wish to be unduly rude to the substitute, but I think it should be made plain to him in such cases that, though he is welcome to listen to what goes on, he is definitely not invited to be a speaker. I think that our delegates at the Hamburg Forum should emphasize the fact that such substitute speakers are unacceptable to us, and that such practices should cease.

Effective communication and exchange of information among the scientists of the world requires, among other things, prompt and complete circulation of scientific publications. The American Association for the Advancement of Science, however, has encountered extensive censorship of its principal journal, Science, in the Soviet Union. In a period of less than a year, from March 17, 1978 to February 2, 1979, material was deleted from at least 21 issues of Science before the journal was circulated in the Soviet Union. All the letters in the May 5, 1978 issue, for example, were deleted; these dealt with human cloning, the Japanese wartime nuclear effort, and other topics. In the June 16 issue, they again deleted all the letters: on tanker safety, on solar energy in 2000, on paraquat pyrolysis products, and on the postponement of visits by physicists to the Soviet Union. Later, they deleted News and Comment articles on the British National health system, on biological warfare and smallpox eradication, and on budget cutting in Congress and its relation to the science budget. In general all articles and letters relating to human rights, to Soviet-American relations, and to the People's Republic of China were deleted; other material in the same section of a given issue was often deleted also, probably, in many cases, in order to make the excisions less obvious by removing an entire page or more. The well known British journal, Nature, has suffered similarly. More purely technical scientific journals are much less subject to scrutiny and possible mutilation before they can be circulated in the Soviet Union.

On October 17, 1979, Mr. William D. Carey, Executive Officer of the AAAS, sent a courteous but emphatic protest, concerning these deletions from Science,

to President Anatoliy Aleksandrov of the Soviet Academy of Science. As yet Mr. Carey has received no reply. We hope that the Hamburg Forum will consider the matter of censorship of material in scientific journals, and that the United States delegation will urge the free transmission of scientific journals, complete and intact, across national boundaries, everywhere.

We have to recognize that the changes proposed here to facilitate scientific communication are fairly certain to be rejected by the Soviet delegation. It is not the scientists themselves who impose these restrictions on the free flow of information, and though they are inhibited from speaking frankly to us on these matters I feel pretty sure that many of them are inwardly unhappy about the restrictions imposed upon them. These are imposed by bureaucrats who are carrying out government policy as they understand it, and Soviet policy clearly inhibits free discussion of many issues.

I fear that our delegation will make little headway on these issues, and the Soviet delegation may be under instructions not to discuss them. I believe, however, that it is worth while to reiterate these matters at the Hamburg Forum, and to do so in close cooperation with the delegations from Western Europe, and from other countries sympathetic with our point of view.

One important result of the Science Forum that might be suggested by our delegation would be the creation of a working group charged with collecting and reviewing reports about obstacles to international scientific cooperation. Because of the de-centralized and pluralistic nature of scientific communication, it is very difficult to evaluate the overall impact of individual visa restrictions, the random substitution of conference speakers or participants, or ad hoc restrictions on scientific publications. These actions inevitably

affect the process of international scientific communication, but there is at present no monitoring group to collect and review these restrictions. A working group established by scientists from the Helsinki signatory nations would study and identify specific barriers to scientific cooperation. If the necessary resources for such a group were not available, the Forum might draw upon the International Council of Scientific Unions, which has two subcommittees charged with reviewing restrictions on ICSU-sponsored meetings and identifying other barriers to the pursuit of science. The Forum could, for example, request ICSU to provide a formal report on this issue to the Helsinki signatory nations at their next meeting in Madrid. I urge our delegation to recognize the importance of establishing such a group to identify obstacles to scientific communication if they are to be taken seriously by those interested in improving existing methods of scientific cooperation.

The Forum will presumably consider the larger issues of scientific exchange between the United States and the Soviet Union and its satellites. Here I would draw an important distinction between exchanges in basic science and in technology. President Carter has halted certain types of sales and exchange programs in the area of advanced technology, for reasons of policy with which I agree. However, in the area of basic science that offers no immediate applications in technology, I would hope that exchanges will continue, though perhaps on a diminished scale.

The agenda of the Hamburg Forum does not include the larger issues of human rights and their violation. Nevertheless such issues inevitably have a powerful influence on our views concerning scientific communication and

exchange of information with the Soviet Union. The imprisonment of Yuri Orlov and Sergei Kovalev, primarily for their activities on behalf of human rights and the monitoring of the Helsinki Accord, and the more widely publicized case of Anatoly Shcharansky, have created profound anger and dismay among many American scientists. The latest reports are that all these three scientists are being kept under exceptionally harsh prison conditions; their health has deteriorated badly and their lives may be in danger. Some 2500 U.S. scientists have signed declarations of support for Orlov and Shcharansky in particular, many of them proposing to stop all cooperative scientific activities with the Soviet Union until Orlov and Shcharansky are freed, others calling for a reduction of scientific contacts short of a complete boycott. Most of these steps were taken in 1978, long before the current crisis in relations. The cases of Orlov, Shcharansky, and Kovalev will not be on the agenda at Hamburg, but their ghosts will be present.

Thus there are formidable obstacles to the success of the Hamburg Forum. Nevertheless, I do not think that we should, at this stage, give up the attempt to hold it. Sooner or later we shall have to return to dialogue with the Russians. It may be easier to do so in the future if we can maintain some sort of communication now. If it proves, however, that no effective discussion of scientific communication and exchange of information can take place at the Hamburg Forum, then I believe that the Forum should be canceled even if the delegates are already assembled, and that we should then wait for some more auspicious time to resume the discussion in future.

I should emphasize my belief that the Russian scientists do want to talk to us, and that they are probably even more troubled than we are by the obstacles to free communication; these obstacles are imposed, not by them, but by the Soviet government.

Mr. BROWN. Thank you very much, Professor Edsall. I am very much impressed with your statement and the practical demonstration that you had of the inhibition of communication, shall we say? If you would help our staff with some of the specific data on these changes and deletions from Science, I think I'd like to include at least a representative sample of those in our hearing record so that other Members of the Congress can see in detail what we are talking about.

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October 17, 1979

Academician Anatoliy P. Aleksandrov
President
Academy of Science of the U.S.S.R.
Leninskiy prospekt, 14
Moscow
U.S.S.R.

Dear Academician Aleksandrov:

For some years the American Association for the Advancement of Science has honored an agreement with VAAP which permits our journal Science to be reproduced and sold within the U.S.S.R. The current agreement with VAAP has one more year before it expires.

I must tell you that we are deeply troubled by the excessive censorship of material which appears in Science. In the year ending last February, censorship was exercised twenty-one times, and it has continued with unreasonable severity.

The standard Soviet response to our objections is that "we reproduce what is of interest to Soviet scientists." We are asked to believe that Soviet scientists are not interested, for example, in material relating to human cloning, Japanese wartime nuclear effort, environmental health, tanker safety, solar energy, health care in Cuba, science for development, Congressional funding of scientific research, technology creep and the arms race, the Nobel physics prize, and arms control.

The issue of Science for February 9, 1979, is perhaps the most shocking case of Soviet censorship. This issue contained accounts of our visit to scientific institutes in the People's Republic of China, and showed on the cover of Science a Chinese locomotive. Your censors killed the cover and all of the reports on what is happening in Chinese science. We cannot believe that Soviet scientists "are not interested" in the state and prospects of science in China.

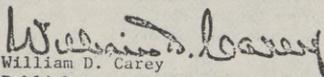
Soviet censors systematically strike out all material in Science relating to human rights and the difficulties of dissident and refusenik scientists. While

we are accustomed in our country to a free press and regret very much its absences elsewhere, at least we can comprehend the political motive for that kind of censorship. It will not discourage us from continuing to publish such material from time to time.

As to the present censorship of Science over matters not related to the human rights question, we are unwilling to let it pass without vigorous protest. Your own scientists cannot fail to observe the extent of censorship of Science. Scientists in more than 130 countries outside the U.S.S.R. are reminded sharply and repeatedly that Soviet authorities do not trust the judgment and reliability of their own scientists, even to the extent of controlling what they may read. For our part, we object deeply to Soviet mutilation of Science.

Because VAAP has told us that these decisions are the responsibility of other organs of the Soviet government, it is impossible for us to discuss this problem usefully with VAAP. Our hope is that the Soviet Academy of Science, for which American scientists have such great respect, will take steps to reduce the severity and arbitrariness of censorship of Science in the interests of improving good will between the American and the Soviet scientific communities -- an objective we share in common, and for which we have both worked very hard indeed.

Sincerely,


William D. Carey
Publisher

/lal

cc: Dr. Philip Handler, President, U.S. National Academy of Sciences
The Honorable Frank Press, The White House
The Honorable Cyrus Vance, U.S. Secretary of State
Dr. V.K. Dobroselskiy, Science Counsellor, Embassy of the U.S.S.R.

see list...

Articles Deleted from Russian SCIENCE March 17, 1978 - February 2, 1979

<u>ISSUE</u>	<u>DATE</u>	<u>ARTICLE</u>
4339	April 21, 1978	1977 report of the executive officer AAAS Council Meeting, 1978
4341	May 5	<u>letters</u> (all): human cloning, science, the bad image, Japanese wartime nuclear effort: a cover up? <u>AAAS news</u> (all): committee on scientific freedom and responsibility, science heart research book, June meetings, for the library, annual meeting survey results, symposium on energy and development, environmental health theme of 1st NYAS science week.
4345	June 2	<u>News and Comment</u> : problem of succession at science office at State, new study of land based aircraft questions need for aircraft carriers, Handler protests Orlov trial
4347	June 16	<u>letters</u> (all): tanker safety, physicists postpone visit to Soviet Union, solar energy in 2000, paraquat pyrolysis products <u>News and Comment</u> (all): health care in Cuba, briefing (DOE, Eskimos honor whale quota, UNGSTD), cloning, President and science adviser push for foundation for development
4349	June 30	<u>News and Comment</u> : angel dust, briefing (technology and third world, Yalow declines ladies' award, peace academy, bio- energy, geneticists boycott Moscow Congress)
4350	July 7	<u>AAAS news</u> (all): Hans Nussbaum retires, NSF Chautauqua courses. media interns, board of directors election, Kirtley Mather obit.
4352	July 21	<u>News and Comment</u> (all): Turin shroud, Britain's national Health
4353	July 28	<u>News and Comment</u> (all): Britain's national health, briefing (laetrile, clones, ERA, DuPont's drug institute post) biological warfare and smallpox eradication, Congress' budget cutting and science
4354	August 4	<u>News and Comment</u> (all): Peter Bourne, American-Soviet relations - cancelled computer, briefing (astronauts' shuttle, trends in doctorates, test tube babies, endangered species act), paraquat
4355	August 11	<u>Letters</u> (all): human rights, cuban health care, animal rights <u>Articles</u> : human issues in human rights (Kates)
4357	August 25	<u>Letters</u> (all): Horatio Alger on work, Moscow Genetics Congress <u>Association Affairs</u> : AAAS Annual Elections

<u>ISSUE</u>	<u>DATE</u>	<u>ARTICLE</u>
4361	September 22	<u>News and Comment</u> (all) technology creep and arms race, nuclear stockpile testing, IQ debate <u>Book reviews</u> (all): Soviet science, cooperative equilibria in physical biochemistry, the hypothalamus, books received
4362	September 29	<u>Editorial</u> : US-Soviet scientific relationships <u>News and Comment</u> (all): technology creep and arms race, Rasmussen reactor safety study, DNA rules
4364	October 13	<u>Letters</u> (all): chemists withdraw from Soviet symposium <u>Annual Meeting</u>
4365	October 20	<u>Letters</u> (all): scientific exchange with Soviets, nitrates, saccharan, Vietnamese universities, shroud study <u>News and Comment</u> : technology creep and arms race, OSTP faults energy research quality
4369	November 17	<u>News and Comment</u> : science show for children being developed for tv
4371	December 1	<u>Research News</u> : 1978 Nobel Prize in physics <u>AAAS News</u> : 1978 election results, board trip to PRC, Committee on Scientific Freedom and Responsibility procedures
4372	December 8	<u>News and Comment</u> (all): arms control chief, Piltown, Harvard and core curriculum, budget <u>Annual Meeting</u>
4373	December 15	<u>News and Comment</u> briefing (utility industry cool to voltage reduction project, CONAES study, energy siting facility) anti-Semitism alleged in Soviet Mathematics
4375	January 5, 1979	<u>AAAS News</u> : Margaret Mead, socio-psychological prize, San Francisco meeting, Asian regional seminar, annual meeting notes
4379	February 2	<u>News and Comment</u> : normalization brings first exchange of US-PRC scientists, Middle East investments in US universities, briefing (DOE, AAAS, technology foundation)

Dr. EDSALL. All right.

Mr. BROWN. Now, Dr. Ralston, would you like to proceed?

Dr. RALSTON. Thank you, Mr. Chairman.

I, too, will try to shorten the written statement in the interest of time.

On behalf of the Association for Computing Machinery I wish to express my appreciation for the invitation of the commission and the subcommittees to appear before you as a representative of ACM, the largest—over 40,000 members—and the oldest of the scientific and educational societies in computing.

I am specifically representing Daniel McCracken, president of ACM, who is unable to be here today. I am myself a past president of ACM. What I shall try to do in the next few minutes is to represent to you the attitudes of the ACM council, the main governing body of the association, toward science policy and human rights as evidenced by various actions of the council over the past few years. I do this to emphasize that it is not just recent international events which suggest the need for a firm science policy toward the Soviet Union.

Following that, I shall try to extrapolate these attitudes, in a necessarily personal way, to the purposes of this hearing.

ACM has been active on the scientific freedom and human rights fronts for some years now. Briefly summarized, the major focuses have been:

Activity beginning in 1975 on behalf of Valentin Turchin, a Soviet refusenik computer scientist, in support of his desire to come here from the Soviet Union; this activity continued until 1977 when Dr. Turchin was finally allowed to emigrate; we have, of course, no means by which to estimate how much effect our letters, telegrams, statements and so forth had on this happy result. Continuing public support for Anatoly Shcharansky since his case first came to Western attention; as yet, this has not had its desired effect but at least ACM has played an important role in bringing this case to the attention of the world.

A 1977 resolution that ACM would not "cooperate with or co-sponsor any meetings to be held in the U.S.S.R." in view of Russian restrictions on scientific freedom and on the freedom of computer people; this has been called in Science magazine "perhaps the most drastic official action to date" by an American scientific or technical society.

I should make it clear, however, that ACM's human rights interests are not focused on the Soviet Union alone. We currently have knowledge of some 40 computer scientists whose human rights we have reason to believe have been violated.

The cases of these 40 are featured by President McCracken in his president's letter to the members of ACM in the current issue of ACM's major publication, the Communications of the ACM. One of those is a Russian and the other is an East German.

In this letter he states:

Our professional brothers and sisters are suffering profound deprivation of the most basic personal and scientific freedoms. I am immensely proud that at such a time of crisis ACM has been at the forefront of the scientific community in responding to their cries for help. I hope with all my heart that we will continue to do so.

And it is not inappropriate in these times for me to mention that several years ago, ACM refused to charter a chapter in Iran on the grounds that the human and scientific freedoms of computer scientists there could not be reasonably assured.

Of course, in ACM, as in all other similar societies which have involved themselves in human rights matters, there is no unanimity among the members that such activities are appropriate for a scientific-educational society. My perception is that among the people who oppose such activity, there are:

Those who believe that we cannot be effective and that, therefore, such activities only serve to divert energy from the "normal" pursuits of societies like ACM and, those who believe that any activity with political implications is inappropriate for a scientific-educational society.

While admitting that measurements of effectiveness are almost impossible, I must also state my belief that the notoriety given by societies like ACM and by other bodies including the U.S. Government itself to human rights violations has not only heightened awareness of these individual tragedies but, in a number of cases, has persuaded governments that emigration of dissidents or refuseniks is preferable to continuing adverse publicity.

Perhaps the strongest evidence to support this view comes from the people affected who, perhaps without exception, support those actions. When ACM passed the resolution of noncooperation with scientific meetings in the Soviet Union, Andrei Sakharov noted that we had "hit exactly the right nail." I feel sure that even the grim events of last week have not changed his mind on this score.

We do not choose the rules by which the game is played. It is not the United States and the West more generally but others who have injected politics into science.

In this respect, science is not unlike sports, although my point here is rather different from the one of Congressman Ritter a few moments ago. For example, the reduction or cancellation of scientific exchanges hurts individual scientists just as an American boycott of the Olympic Games would hurt individual athletes. But with science, as with sports, individual sacrifice may be necessary to achieve the broader goals of human rights and national policy.

We in ACM are keenly cognizant of the fact that computer technology is among the most important in the world today. The potential for the use of this technology to improve the human condition is immense but the potential to use it for repressive purposes is not inconsiderable.

Moreover, more perhaps than in any other area of science and technology, the United States and the West are preeminent in computing. The leverage that results thereby should be used responsibly and cautiously. But, it would be cruel folly to suggest that it is inappropriate to use it to further the human rights of our colleagues in other countries as well as for other bona fide national purposes.

Your focus today is the upcoming Scientific Forum in Hamburg and the role the United States should play in that Forum. I have always believed that scientific cooperation and joint projects between nations are not only an avenue of scientific progress, but also an effective means of creating understanding between nations not achievable by other means.

It was, therefore, acutely painful, I am sure, for many of the members of the ACM Council who voted for the resolution severing scientific ties with the Soviet Union to do so.

But they had come to the conclusion that bona fide scientific cooperation is impossible and the other benefits of such contacts are unachievable, and, with few exceptions—some of which were mentioned by Dr. Press and Dr. Acker—have not been achieved when the choice of the scientists involved in such exchanges is made on political, not scientific grounds, and when considerable numbers of one's disciplinary colleagues are persecuted or jailed.

Therefore, quite aside from recent international events, it would have been—and of course, still should be—incumbent on the American delegation to the Scientific Forum to make it unmistakably clear that the future of scientific cooperation between the United States and the Soviet Union is gravely imperiled by the policies of the Soviet Government toward its own scientists. Without changes in these policies, the mutual benefits of such cooperation just cannot be achieved.

There are, of course, counterarguments. It has been claimed that only through scientific exchanges with the Soviet Union can we keep our finger on the pulse of Soviet science. Perhaps, but I see little evidence that the benefits of this have outweighed the reciprocal benefits to the Soviets.

In addition, too often, these exchanges have been accompanied by what amounts to official abandonment of the cause of the dissident and refusenik scientists.

Others argue that quiet diplomacy with one's Soviet colleagues in a business-as-usual atmosphere within scientific exchanges or within international scientific organizations is the best way to promote the welfare of persecuted colleagues. I have, however, never seen any even anecdotal evidence of accomplishment which support this view.

Finally, there is compelling argument that only through such exchanges do American scientists have the opportunity to visit refusenik and dissident scientists who are otherwise cut off from their professions.

Surely, it is true that no American scientists visiting the Soviet Union should miss the opportunity to attend, for example, the famous weekly Moscow seminar of refusenik and dissident scientists.

But I believe it likely that, great though the solace this provides, these Soviet scientists would be among the first to argue that a policy of firmness and quid pro quo is the best eventual hope for ameliorating their position.

I conclude by calling your attention to the clause in the Final Act that singles out "competent organizations" and "institutions" as among the partners in scientific exchanges. Scientific societies like the one I represent are uniquely positioned to further the cause of scientific freedom and the human rights of scientists.

On the one hand, they represent large numbers of scientists, among them the scientific elite, and carry, therefore, a weight not available to individual effort. On the other hand, as non-governmental organizations, they are less likely than the Government itself to be involved with situations in which face can be saved only by intransigence.

These societies represent, therefore, not only a central portion of American scientific life but, because of this, a vehicle deserving of

support from all quarters as they travel the difficult, frustrating, and often contentious road on which science, politics, and human rights are intermixed.

If I might make one supplementary remark to respond to your initial question about the resolution you and Congressman Hollenbeck have introduced, it seems to me that it strikes the right note in the sense that it suggests but does not require the cancellation of exchanges and leaves up to the individual scientist and groups of scientists the decision on whether to do this themselves.

I think it's particularly important that governments like that of the Soviet Union see these actions as being broadly representative of the scientific community. In that sense, I think it strikes just exactly the right note.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Ralston follows:]

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Association for Computing Machinery

ANTHONY RALSTON

REPLY TO:

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Testimony Submitted to the Commission on Security and
Cooperation in Europe, the Subcommittee on Inter-
national Security and Scientific Affairs and the
Subcommittee on Science, Research and Technology,
House of Representatives of the Congress of the
United States

31 January 1980

by

Anthony Ralston
Past President (1972-74) of the
Association for Computing
Machinery

Science Policy and Human Rights

On behalf of the Association for Computing Machinery (ACM) I wish to express my appreciation for the invitation of the Commission and the Subcommittees to appear before you as a representative of ACM, the largest (over 40,000 members) and oldest of the scientific and educational societies in computing. I am specifically representing Daniel McCracken, President of ACM, who is unable to be here today. I am myself a past president of ACM. What I shall try to do in the next few minutes is to represent to you the attitudes of the ACM Council, the main governing body of the Association, toward science policy and human rights as evidenced by various actions of the Council over the past few years. And, then I shall try to extrapolate these attitudes, in a necessarily personal way, to the purposes of this hearing.

ACM has been active on the scientific freedom and human rights fronts for some years now. Briefly summarized, the major focuses have been

- activity beginning in 1975 on behalf of Valentin Turchin, a Soviet refusenik computer scientist, in support of his desire to come here from the Soviet Union; this activity continued until 1977 when Dr. Turchin was finally allowed to emigrate; we have, of course, no means by which to estimate how much effect our letters, telegrams, statements etc. had on this happy result.
- continuing public support for Anatoly Scharansky since his case first came to Western attention; as yet this has not had its desired effect but at least ACM has played an important role in bringing this case to the attention of the world.

- a 1977 resolution that ACM would not "cooperate with or cosponsor any meetings to be held in the USSR" "in view of Russian restrictions on scientific freedom and on the freedom of computer people" (ACM Council resolution, 21 October 1977); this has been called in Science magazine "perhaps the most drastic official action to date" by an American scientific or technical society.

I should make it clear, however, that ACM's human rights interests are not focused on the Soviet Union alone. We currently have knowledge of some 40 computer scientists whose human rights we have reason to believe have been violated. While the large majority of these are Russian, two are Argentine and one East German. The cases of two of these 40 are featured by President McCracken in his President's letter to the members of ACM in the current (January 1980) issue of ACM's major publication, the Communications of the ACM. In this letter he also states:

"Our professional brothers and sisters are suffering profound deprivation of the most basic personal and scientific freedoms. I am immensely proud that at such a time of crisis ACM has been at the forefront of the scientific community in responding to their cries for help. I hope with all my heart that we will continue to do so."

And it is not inappropriate in these times for me to mention that several years ago ACM refused to charter a chapter in Iran on the grounds that the human and scientific freedoms of

computer scientists there could not be reasonably assured.

Of course, in ACM, as in all other similar societies which have involved themselves in human rights matters, there is no unanimity among the members that such activities are appropriate for a scientific-educational society. My perception is that, among the people who oppose such activity, there are

- those who believe that we cannot be effective and that, therefore, such activities only serve to divert energy from the "normal" pursuits of societies like ACM and
- those who believe that any activity with political implications is inappropriate for a scientific-educational society.

The former group have their counterparts not just in other societies but in the world at large among those who believe that no statements or actions of the kind alluded to above will ever influence the behavior of governments which engage in suppression of human rights and scientific freedom. While admitting that measurements of effectiveness are almost impossible, I must also state my belief that the notoriety given by societies like ACM and by other bodies including the United States Government itself to human rights violations has not only heightened awareness of these individual tragedies but, in a number of cases, has persuaded governments that emigration of dissidents or refuseniks is preferable to continuing adverse publicity. Perhaps the strongest evidence to support this view comes from the people affected who, perhaps without exception, support those actions. When ACM

passed the resolution on noncooperation with scientific meetings in the Soviet Union, Andrei Sakharov noted that we had "hit exactly the right nail". I feel sure that even the grim events of last week have not changed his mind on this score.

With those who think that societies like ACM should not engage in any activity with political overtones, I believe that science and politics are better not mixed since science is the preeminent example of an activity which should be transnational and is most effectively pursued with minimum interference from politicians or cognizance of politics. But we do not choose the rules by which the game is played. It is not the United States and the West more generally but others who have injected politics into science. In this respect science is not unlike sports. Thus, for example, the reduction or cancellation of scientific exchanges hurts individual scientists just as an American boycott of the Olympic Games would hurt individual athletes. But with science, as with sports, individual sacrifice may be necessary to achieve the broader goals of human rights and national policy.

We in ACM are keenly cognizant of the fact that computer technology is among the most important in the world today. The potential for the use of this technology to improve the human condition is immense but the potential to use it for repressive purposes is not inconsiderable. Moreover, more perhaps than in any other area of science and technology, the United States and the West are preeminent in computing. The leverage that results thereby should be used responsibly and cautiously. But it would be cruel folly to suggest that it

is inappropriate to use it to further the human rights of our colleagues in other countries as well as for other bona fide national purposes.

Your focus today is on the upcoming Scientific Forum in Hamburg and the role the United States should play in that Forum. The purposes of the Forum, namely to promote increased scientific contacts, communications and information exchange, surely have the full support of the members of ACM as they do also of all American scientists and technologists. In relation to the Third World there is no controversy; such contacts have much to contribute to, quoting the Helsinki Final Act, "the effective solution of problems of common interest and the improvement of the conditions of human life." But the important question before you and before the American delegation to the Forum is scientific relationships between the West and the Soviet bloc.

I have always believed that scientific cooperation and joint projects between nations are not only an avenue of scientific progress but also an effective means of creating understanding between nations not achievable by other means. It is, I think, this belief which has led the American scientific community to support the principle of scientific exchanges and cooperation more strongly than could generally be justified by the prospects for scientific advance itself. It was, therefore, acutely painful, I am sure, for many of the members of the ACM Council who voted for the resolution severing scientific ties with the Soviet Union to do so. But they had come to the conclusion that bona fide scientific

cooperation is impossible and the other benefits of such contacts are unachievable

- when the choice of the scientists involved in such exchanges is made on political, not scientific grounds and
- when considerable numbers of ones disciplinary colleagues are persecuted or jailed for advocating basic human rights, including their own to emigrate, or when their sole "crime" has been to try to persuade their own government to abide by agreements it had formally entered into.

Therefore, quite aside from recent international events, it would have been -- and, of course, still should be -- incumbent on the American delegation to the Scientific Forum to make it unmistakably clear that the future of scientific cooperation between the United States and the Soviet Union is gravely imperiled by the policies of the Soviet government toward its own scientists. Without changes in these policies the mutual benefits of such cooperation just cannot be achieved.

There are, of course, counterarguments. It has been claimed that only through scientific exchanges with the Soviet Union can we keep our finger on the pulse of Soviet science. Perhaps, but I see little evidence that the benefits of this have outweighed the reciprocal benefits to the Soviets. In addition, too often these exchanges have been accompanied by what amounts to official abandonment of the cause of the dissident and refusenik scientists.

Others argue that quiet diplomacy with ones Soviet colleagues in a business-as-usual atmosphere within scientific exchanges or within international scientific organizations is the best way to promote the welfare of persecuted colleagues. I have, however, never seen any even anecdotal evidence of accomplishment which supports this view.

Finally, there is the compelling argument that only through such exchanges do American scientists have the opportunity to visit refusenik and dissident scientists who are otherwise cut off from their professions. Surely it is true that no American scientists visiting the Soviet Union should miss the opportunity to attend, for example, the famous weekly Moscow seminar of refusenik and dissident scientists. But I believe it likely that, great though the solace this provides, these Soviet scientists would be among the first to argue that a policy of firmness and quid pro quo is the best eventual hope for ameliorating their position (see, for example, the article by Valentin Turchin in the September 1978 Bulletin of the Atomic Scientists).

I conclude by calling your attention to the clause in the Final Act that singles out "competent organizations" and "institutions" as among the partners in scientific exchanges. Scientific societies like the one I represent are uniquely positioned to further the cause of scientific freedom and the human rights of scientists. On the one hand they represent large numbers of scientists, among them the scientific elite, and carry, therefore, a weight not available to individual effort. On the other hand, as non-governmental organizations,

they are less likely than the government itself to be involved with situations in which face can be saved only by intransigence. These societies represent, therefore, not only a central portion of American scientific life but, because of this, a vehicle deserving of support from all quarters as they travel the difficult, frustrating and often contentious road on which science, politics and human rights are intermixed.

Mr. BROWN. Thank you.

This is an extremely difficult area to legislate in, as I'm sure you are aware, because of the many complexities which you have indicated. There is no way that you can instill through legislation an increased sense of injustice or a rise in the level of consciousness among scientific groups or anything of that sort, which is, of course, necessary in situations of this sort.

I would call on Dr. Gottesman next, representing the Committee of Concerned Scientists.

Dr. GOTTESMAN. Thank you, Mr. Chairman.

Mr. Chairman, on behalf of the Committee of Concerned Scientists, I wish to thank you very much for holding these significant and timely hearings. I am appearing this afternoon as cochairman of the Committee of Concerned Scientists, which is an independent national organization of 4,000 American scientists devoted to the protection and advancement of scientific and human rights for colleagues throughout the world. Since 1972 we have been developing and coordinating programs within the American scientific community on behalf of oppressed colleagues.

We, as all Americans, are deeply disturbed by the Soviet invasion of Afghanistan. Moreover, we believe that it must be demonstrated clearly to the Soviet Union that the world regards this aggression as reprehensible. But we feel, as do our fellow citizens, that the actions taken to demonstrate to the U.S.S.R. our resistance to Soviet aggression must not lead irreversibly toward military conflict between our two countries. They must also not violate a basic American policy, which is promotion of the free flow of ideas among different countries. We must assure that the channels of communication between the Soviet Union and the United States remain open. It is our view that the American delegation to the scientific forum will be in a unique position to convey our views on the importance of international scientific exchange, in improving the quality of life for all mankind, and on the need to remove impediments placed in the way of this exchange.

I think it's appropriate to draw a distinction between restricting the sale of high technology to the Soviets and restricting scientific exchange. The former is a valid and effective response to Soviet military aggression because it is directed at the transfer of material with potential military value. Restricting scientific exchange, on the other hand, is not likely to move the Soviets to withdraw their troops from Afghanistan or to prevent similar acts of aggression against other countries. Furthermore, since scientific findings are published eventually in international journals, limiting exchange would not deny the Soviets access to American scientific advancement.

The Soviets, however, have frequently and notoriously interfered with scientific exchange. They have prevented their citizens from attending international conferences, from receiving scientific journals and from meeting Western visitors. Some Soviet scientists have been imprisoned for attempting to implement these basic rights, which are guaranteed in the Helsinki accords.

In our view Soviet interference with free scientific exchange provides the only valid reason for the U.S. Government to restrict scientific exchange. Such restriction should come only as direct, explicit, and limited response to specific Soviet violations. This approach

would deprive the Soviets of the argument that we were impeding the free flow of people and ideas, and allowing politics to intrude on scientific progress. Such specific responses have, in the past, provided us with sufficient leverage to influence Soviet policy. In some instances we have been able to ease the repression of some Soviet scientists, allowing them to attend certain scientific conferences and even to emigrate from the U.S.S.R.

We also wish to note that American scientists on official visits to the U.S.S.R. often attend scientific seminars at the homes of dissident and refusenik Soviet colleagues. These dissidents and refuseniks who have been denied the possibility of pursuing their scientific careers, rely heavily on American contacts to remain viable as scientists, and in some instances, to avoid imprisonment.

The enforced internal exile of academician Sakharov, detained by Soviet police while en route to a seminar at the Academy of Sciences, is a repulsive violation of the Helsinki accords, and has elicited an expression of outrage from the entire scientific community. The repression of Dr. Sakharov must adversely affect scientific exchange programs with the U.S.S.R. In our view it calls for a strong but calibrated response. For some Americans a boycott of a specific scientific exchange program would be appropriate. We urge other Americans to continue to participate in exchanges and to use these opportunities to stress to the Soviets our belief that repression of dissident and refusenik scientists violates the guarantees of human rights in the Helsinki Accords, threatens all scientific exchange, and indeed, the continued peaceful coexistence of the United States and the U.S.S.R.

It should be noted that the Soviet Government has failed to deprive Academician Sakharov of his membership in the Academy of Sciences of the U.S.S.R. Such action requires a $\frac{2}{3}$ majority vote, decided by secret ballot. This suggests that the members of the Academy of Sciences are resisting their Government's attempts to harass Dr. Sakharov. We should regard this as an indication that the Soviet scientific community may not be in full sympathy with its Government's policy of persecuting dissident and refusenik scientists. We believe that continued exchanges with our Soviet colleagues can only strengthen their resolve.

We also suggest that the American scientific community, in response to the Soviet attempts to stifle Dr. Sakharov, bar from exchange programs certain Soviet participants, who are not directly engaged in scientific work. Excluding some bureaucratic officials, "interpreters," and other nonscientists could be effective; these are often the people who are responsible for the persecution of dissidents and refuseniks. It would, furthermore, not compromise our position that free scientific exchange is our best hope for supporting the human rights of scientists and others in the Soviet Union.

Concurrently, we propose that Soviet discriminatory practices in granting visas to enter the U.S.S.R. on exchanges and in allowing their scientists to travel abroad for this purpose, be met with firm opposition. In instances when selected American members of a delegation are denied visas, the remainder of the delegation should be encouraged to register its protest by withdrawing from the program. Furthermore, when the Soviets, applying criteria of political reliability, substitute inferior scientists for those who are qualified, we

should reject their choices for the exchange even if such action results in its cancellation. By instituting these measures we can underscore our aversion to political constraints on scientific exchange?

Having discussed problems in the conduct of scientific exchanges, we would now like to explore the scientific forum as a vehicle for dealing with these problems.

We believe that the United States should honor its commitments to the advancement of scientific exchange among nations, as delineated in the international agreements to which it is a signatory. Recognizing that scientific advancement brings with it the improvement in the quality of human life, we maintain that discussions at the scientific forum should focus on specific suggestions for improving "forms and methods of cooperation."

The final act of the Helsinki Conference on Security and Cooperation in Europe (CSCE) in 1975 called for a meeting of scientists to discuss "current and future developments in science and to promote the expansion of contacts, communications, and exchange of information between scientific institutions and scientists." Coming some 4½ years after the Helsinki Conference, the Scientific Forum is intended to follow up on the implementation of Basket II of the Final Act, which deals with scientific and technological cooperation. A major part of the agenda includes three substantive areas of consideration by "appropriate subsidiary working bodies." They are the exact and natural sciences, medicine, and the humanities and social sciences.

It is the conviction of the Committee of Concerned Scientists that the Scientific Forum can make its most significant contribution by stressing the structure of international scientific relationships rather than the substantive scientific problems. By concentrating on current and future developments in science as such—the first part of the Final Act's mandate—the Forum would cover the same ground as the hundreds of international scientific meetings that already take place annually. Moreover, it would only cover this ground inadequately, since the breadth of topics to be considered would make adequate coverage extremely difficult.

In our view, the U.S. delegation should focus primarily on the second portion of the Helsinki Final Act's mandate for the Forum—that is, on evaluating current modes of scientific interaction among individuals and institutions of the signatory countries. This is, indeed, the position taken by the United States at the CSCE experts meeting in Bonn in July. In this area a large number of questions beg for discussion, including the following:

Are international scientific organizations, as presently constituted adequately furthering exchanges?

If they are not, what correctives need to be instituted?

If, as discussions at the planning meeting last summer revealed, certain countries feel isolated from international science, why is this so, and what can be done to remedy the situation?

In particular, delegates from the United States and other countries should discuss, in a constructive but forthright manner, the obstacles that exist to the kind of free scientific interchange envisioned in the Helsinki Final Act. They should attempt to determine why Soviet and Eastern bloc governments and academic officials exclude from scientific activities those who have sought permission to emigrate, in ac-

cordance with the Helsinki Final Act, or have spoken out for full implementation of the act itself. They should also ask why Soviet and Eastern bloc scientists invited to international conferences are frequently not permitted to attend.

This discussion should by no means be limited to the Soviet Union and its allies. A number of American computer scientists have complained that our Government is interfering, on grounds of national security, with their right to communicate freely the results of their research.

The Forum should begin to formulate proposals designed to break down harmful intrusions on free interchange. For example, national security considerations have been invoked as a reason to limit cooperation at various times and on various projects. At the Forum, scientists could begin to formulate guidelines limiting the impingement of security interests on international scientific cooperation.

The signatories of the Helsinki Final Act recognized that scientific advancement brings "the effective solution of problems of common interest and the improvement of the conditions of human life." Scientific progress, however, is dependent on free international exchange of scientists and scientific information.

We believe that the testimony we have presented underscores our abiding commitment to the continuation of existing exchange agreements with the Soviet Union. With the proper focus, the Scientific Forum can do much to enhance the quality of these exchanges for our mutual benefit. We hope this meeting will be a milestone in the progression towards the full implementation of the Helsinki Final Act. Thank you, Mr. Chairman.

Mr. BROWN. Thank you very much, Dr. Gottesman.

Now, Dr. Feshbach, the head of the Department of Physics at MIT, a very distinguished man in every way.

Dr. FESHBACH. Thank you, Congressman Brown. I would like to add that at the present moment, as of a week, I am also president of the American Physics Society and that's really why I'm here.

We, of course, had no time to prepare a statement which I can say has been validated by a vote of council or the executive committee. So, what I will say today is my own. I believe that it's also what a great number of our members feel.

I will skip in my testimony the work we have done over the last several years in the human rights area with work in Argentina and the U.S.S.R. as well as Czechoslovakia, Romania, and the Philippines. I would like to make one small comment en route with regard to sending journals.

We have made the practice of sending American journals to the Soviet Union and we have documented evidence that they are not received. I think that's important. One recipient is Dr. Yuri Golfand. We have sent him all the issues of the Physical Review Letters in 1979. There are 50 of those. He got seven. That's the typical story. We also have some anecdotal information with regard to Dr. Azbel which is included in my prepared testimony.

Let me turn immediately, however, to the case of Dr. Sakharov who is one of many dissidents and refuseniks who have been subjects of oppression by the Soviet authorities. I might parenthetically note that I have been personally involved with Dr. Sakharov and I am very proud of that.

Dr. Sakharov was exiled because of his eloquent and courageous actions calling attention to the violation of human rights in the Soviet Union. His exile has generated a massive protest by U.S. scientists.

The American Physical Society, through the public statement of its retiring president Lewis Branscomb, and through a telegram I have sent to Alexandrov, president of the Academy of Sciences of the U.S.S.R., has registered its distress and disapproval of the actions of the Soviet authorities.

We have called attention to the destructive impact these actions will have upon the bridges which have been built up over the years between the United States and the U.S.S.R. scientists. At this moment, Branscomb's statement is being circulated throughout the physics community and we anticipate that a large number of our colleagues will endorse that statement.

We can interpret these events as well as the resignation of Kirillin as signaling the ascendancy of the hard liners in the Soviet Union and a reduction of the importance attached to scientific collaboration in Soviet policy.

If this is so, whatever leverage U.S. scientists may have had in the past to ameliorate the difficulties of our colleagues, the dissident and refusenik scientists, has been correspondingly reduced. Under these circumstances, a boycott, as advocated in a statement of several thousand scientists last year, would be an ineffective gesture and certainly a minor perturbation relative to the more massive actions being taken by the U.S. Government such as the grain embargo or the withdrawal from the Olympic games.

On the basis of these considerations, it would seem best to continue to keep open communication between scientists of both countries in the interest of scientific progress as well as to preserve the channels to the more liberal elements in Soviet society.

But, we must now add a condition, however, that any such activity should not be construed as approval either implicitly or explicitly of the repressive actions taken against Sakharov, the dissidents or the refusenik scientists. Indeed, our disapproval must be explicit. This condition has always been important but it is now doubly so because the exile of Dr. Sakharov foreshadows a more intense level of repression.

I might mention, by the way, that 1½ years ago I was a member of a group that was supposed to go to the Soviet Union. That was the time when the Orlov-Shecharansky problem came to a head and we canceled our visit at that time.

I see no problem in maintaining contact under these circumstances on an individual level. Indeed, we should be careful that agencies of the United States do not overreact, because of the present crises, by setting up barriers which would substantially inhibit communication and visits of individual scientists.

At the official level, programs like those of the National Academy of Sciences and the Department of Energy should be continued, but certainly with no increase. I have gathered that Dr. Press thinks they should be decreased to some extent.

But some thought should be given to transmitting our disapproval of the actions taken in violation of the rights of scientists, as exemplified by the exile of Dr. Sakharov. I won't attempt to be more specific, but it is clear that this could occur at the meetings of the organizing committees and at the conferences themselves.

Finally—and this point has been emphasized by many of the speakers this afternoon—finally, meetings should be held only if they are significant scientifically which implies that all those attending can make important contributions to the scientific goals of the conference.

If these suggestions are followed, we shall be able to repeatedly express our deep concern for the rights of Soviet scientists, but, at the same time, we will be able to engage in profitable scientific discussions.

It may be difficult because there may be many U.S. citizens who will not be willing to be involved in such meetings and, on the other hand, we have the problem, as has been emphasized, with getting qualified Soviet attendees.

I think I'll stop here.

[The prepared statement of Dr. Feshbach follows:]

(check)

The American Physical Society

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Testimony to the Committee on Science
and Technology U.S. House of Representatives

by

Professor Herman Feshbach
(President of the American Physical Society)

January 31, 1980

My name is Herman Feshbach. I am head of the Department of Physics of the Massachusetts Institute of Technology and recently I became President of the American Physical Society (APS). It is my intention today to outline the experience of the Society in the area of human rights. This activity of the APS is several years old, being carried on for the society by its Committee on International Freedom of Scientists (CIFS). Most of our efforts have been in behalf of physicists who have been victims of repressive actions by their home governments, notably Argentina and the USSR as well as Czechoslovakia, Rumania and the Philippines. The objectives of these APS activities has been to preserve and to enhance freedom of scientific communication and in general to oppose the restraints on scientific activities associated with the suppression of the human rights of individual scientists. Points of particular concern are unreasonable restrictions on the freedom to attend scientific conferences, on the freedom to publish in scientific journals, on the freedom to have access to scientific literature and unreasonable restrictions on the freedom to pursue their scientific interests and to communicate with other scientists via normal channels including international travel.

APS presidents have sent numerous letters of increasing concern on behalf of oppressed scientists in the countries named above. The Society has supported through written communications the Moscow Conference on Collective Phenomena and individual members have attended these meetings (see Appendix A).

The fourth of these meetings will be held April 13-15, 1980. We have helped to sustain the scientific work of oppressed scientists by sending APS journals, such as the Physical Review and Physical Review Letters. We try to help them maintain normal postal and telephone communication with the scientific community so that for example they can submit their research for publication in reputable scientific journals. We have on occasion successfully expedited the emigration of oppressed scientists making use of our contacts with the State Department and members of Congress. In these endeavors we were joined by other groups and individuals. The APS gave testimony to the Helsinki Commission on Soviet violations of the Helsinki Accords in June, 1977 and to the O.A.S. Inter-American Commission on Human Rights on human right violations in Argentina.

The Argentinian situation is particularly severe, featuring abduction, arbitrary arrest, torture and murder. Our letters of inquiry and protest have yet to receive a satisfactory reply. A very few individuals have been allowed to emigrate including Maximo Vittoria, Juan Gallardo, and most recently Elena Sevilla.

In Rumania we came to the aid of Dr. Constantin Pomponiu who had been arrested and deprived of his doctoral title by the state authorities. He was finally allowed to leave primarily because of the intercession of Senator Jackson's office which called attention to the Jackson-Vanik Amendment.

In the Philippines, as a result of an international effort, which lasted 2 years, Dr. Roger Posadas was released from a concentration camp and allowed to resume his duties at the University of the Philippines.

In Czechoslovakia we came to the support of Vladimir Lastuvska, a nuclear physicist who was arrested for attempting to sign Charter 77 and for possessing anti-state literature. He has been sentenced to a three year prison term. APS efforts have had little effect in securing his release.

With regard to the Soviet Union we have about 60 cases (see Appendix B) in our human rights files. There are persistent problems with regard to the receipt of APS journals as reported by Dr. Yuri Golfand, a member of the Moscow seminar. Golfand had received only seven issues of the fifty Physical Review Letters Vol. 42 and 43 sent to him in 1979 (see Appendix C). We are currently sending him and Dr. Yuri Orlov the Physical Review Letters. We have recently received reports that Dr. Orlov is not being allowed to do any physics and the likelihood of his receiving our journal is very small.

The personal experiences of Dr. Mark Azbel, a very well known physicist, graphically present the problems faced by the oppressed scientists of the USSR. Dr. Azbel had to wait 4 1/2 years until he was allowed to emigrate in June, 1977. He was a professor at the Landau Institute for Theoretical Physics. Because of his desire to emigrate, Professor Khalatnikov, Director of the Landau Institute, together with Professors Gorkov and Larkin compelled Azbel to leave the institute in order "not to endanger the institute and its collaborators". His name and books were removed from the scientific literature. During Azbel's period as a refusnik, he was informed by Academician Kapitza, Editor in Chief of the Soviet scientific journal JEPT, that he could not publish Azbel's papers without "an expert's" certificate. Since Azbel received practically none of the mail sent to him from the West, it was

also quite difficult to publish in western journals and to remain abreast of Western scientific research. In late 1976 and early 1977, William Fowler, then President of the APS protested by letter and telegram to Academician Alexandrov Chairman of the Soviet Academy of Sciences about non-delivery of Physical Review Letters to Azbel for the Moscow Seminar. Finally in March, 1977 a telegram came back from Alexandrov "Mark Azbel mentioned in your cable and letter does not work in the Academy of Sciences of the USSR I have no information of the so-called seminar of Mark Azbel".

The recent exile of Academician Sakharov brings sharply to our notice the conflict between the goals of the Helsinki Accords and of the official scientific interaction with Soviet scientists. Dr. Sakharov was exiled because of his eloquent and courageous actions calling attention to the violation of human rights in the Soviet Union. His exile has generated a massive protest by U.S. scientists. The American Physical Society, through the public statement of its retiring president Lewis Branscomb (see Appendix D) and through a telegram (see Appendix E) I have sent to Alexandrov, President of the Academy of Sciences of the USSR, has registered its distress and disapproval of the actions of the Soviet authorities. We have called attention to the destructive impact these actions will have upon the bridges which have been built up over the years between U.S. and U.S.S.R. scientists. At this moment Branscomb's statement is being circulated throughout the physics community. We anticipate that a large number of our colleagues will endorse this statement.

We interpret these events as well as the resignation of Kerillin as signalling the ascendancy of the "hard liners" in the Soviet Union and a reduction of the importance attached to scientific collaboration in Soviet policy. If this is so whatever leverage U. S. scientists may have had in the past to ameliorate the difficulties of our colleagues, the dissident and refusnik scientists, has been correspondingly reduced. Under these circumstances, a total boycott, as advocated in a statement of several thousand scientists last year, would be an ineffective gesture and certainly a minor perturbation relative to the more massive actions being taken by the U.S. government such as the grain embargo, or the withdrawal from the Olympic Games. Obviously there will be many who will be so repelled by the Soviet actions that they will not wish to participate in bi-lateral meetings. But I believe that there are nother methods of protesting Soviet actions which should also be implemented.

On the basis of these considerations, it would seem best to continue to keep open communication between scientists of both countries in the interest of scientific progress as well as to preserve the channels to the more liberal elements in Soviet society. But we must now add a condition that any such activity should not be construed as approval either implicitly or explicitly of the repressive actions taken against Sakharov, the dissidents or the refusnik scientists. Indeed our disapproval must be explicit. This condition has always been important but it is now doubly so because the exile of Dr. Sakharov foreshadows a more intense level of repression.

I see no problem in maintaining contact under these circumstances on an individual level. Indeed we should be careful

that agencies of the U.S. do not over-react, because of the present crises, by setting up barriers which would substantially inhibit legitimate communication and visits of individual scientists.

At the official level, programs like those of the National Academy of Sciences and the DOE should be continued but some thought should be given to transmitting our disapproval of the actions taken in violation of the rights of scientists, as exemplified by the exile of Dr. Sakharov. I won't attempt to be more specific but it is clear that this could occur at the meetings of the organizing committees and at the conferences themselves. Finally meetings should be held only if they are significant scientifically which implies that all those attending can make important contributions to the scientific goals of the conference.

If these suggestions are followed we shall be able to repeatedly express our deep concern for the rights of Soviet scientists but at the same time we will be able to engage in profitable scientific discussions.

I would now like to turn to testimony prepared for this meeting by Professor Victor F. Weisskopf.

Mr. BROWN. We would like to include the statement of Dr. Weisskopf. That will be included in the record at this point.

Dr. FESHBACH. I could read the last—I had in mind to read the last page of Dr. Weisskopf's testimony. If you would like me to do that, I will be happy to.

Mr. BROWN. I don't think so. I have read the statement already. It's an excellent statement. And the other additions to your testimony will also be included in the record at this point.

[The full statements and the documents referred to are as follows:]

Testimony to the Committee on Science and Technology
United States House of Representatives

I am Victor F. Weisskopf, Institute Professor at the Massachusetts Institute of Technology in Cambridge, Massachusetts. A few weeks ago I had the honor of receiving the National Medal of Science from the President of the United States. All through my life I have had many occasions to observe the Russian scientific scene. In 1932, I spent 8 months as a guest of a scientific institution in Kharkov and I returned several times for meetings and conferences until 1936 when Stalinism closed the border. In 1956, I was among the first United States group that visited the Soviet Union after the death of Stalin. Since then I visited that country many times in trying, together with many colleagues, to establish scientific contact between the Soviet Union and the Western world.

Our scientific relations with the Soviet Union must be reexamined, in view of two most unfortunate actions of the Soviet government--the military occupation of Afghanistan and the expulsion of Sakharov from Moscow. The first is of eminent importance for the future of the world power balance; it may be the first step toward the Soviet domination of the Middle East. The second is of particular importance for our scientific relations with the Soviet Union.

As in all questions of this kind, one must avoid emotional overreaction that usually leads to a vacillating policy of too strong measures followed by too weak ones.

I would like to recommend the maintenance of the formal scientific relations with the Soviet Union. I am against any breaking or restricting the presently existing official agreements

of this nature. Naturally, there will be a reduction of scientific intercourse since many scientists would now refuse to accept invitations from the Soviet Union or would be reluctant to engage in new collaborative enterprises, but in my opinion, this should be left to the judgement of the individual as it has been in the past.

Let me give the reasons for my recommendation.

First, I would like to point out that there is a difference between scientific collaboration and holding the Olympic games in the Soviet Union. The games would be widely covered by the public media and would be used extensively as a means of propaganda to show through the erection of "Potemkin Villages" how peaceful and well organized things are in the Soviet Union. Scientific meetings or collaborative efforts, however, hardly get any publicity and they do not lend themselves to any kind of national propaganda.

Second, it is important to realize that the scientific community in the Soviet Union contains people who are inclined to condemn provocative military action and racial discrimination; they have a great deal of hidden (sometimes not so hidden) sympathy for the dissidents and, in particular, for Sakharov. This relatively lenient treatment of Sakharov may have been more to placate his internal supporters in the scientific community than his foreign friends. I am referring to those scientists who have participated in the USA-Soviet collaborations; they mostly are engaged in basic science or in non-military applied research. To my knowledge, there is a much stricter separation in the Soviet Union between those who work on weapons development and those engaged in basic science. The former group may represent a different political spectrum and are rarely involved with meetings or other collaborative efforts.

Third, the scientific collaboration does not give any immediate support or advantages to the industrial or military potential of the Soviet Union. This is so because the results of basic science have their effects on tactical applications, at best, a few decades later. At that time, the political situation may be quite different. Moreover, the relevant results of that type of research are widely published and cannot be kept from the Soviet Union in any case.

There are advantages of scientific collaboration for both sides. In some of the fields, the Soviets have initiated new ideas (fusion research is an example). The common exploitations of their and our new ideas further science on both sides. It is true that their science profits more than ours, but there are a few important fields in which they have helped us too.

The most important reasons for my recommendations are these:

A. There is a fundamental ethical and also political value in maintaining a scientific world community that stands above the political turmoil of the day. Science is a supra-national and supra-ideological concern in which humankind as a whole participates. During the continental blockade of the Napoleonic wars, a British non-magnetic ship was allowed to ply the continental waters in order to measure the earth's magnetic fields. In 1776, during our Revolutionary War, the British allowed a team of Bostonian astronomers into the British occupied part of northern New England in order to observe a total eclipse.

I believe it is important that the United States uphold the principle that science belongs to all humanity and stands above the

vagaries of political strife. It should serve, and has served in the past, as a bridge for mutual understanding and peace in a divided world.

B. We should not lose contact with one of the best elements of Soviet society with a group which basically agrees with our value scale and--in contrast to the avowed dissidents--who may have a significant influence on the future developments in the Soviet Union. If, as we hope, the present spirit will not lead to a catastrophe, there is a chance that, sooner or later, the character of the Soviet regime may change again for the better. We ought to invest some capital in this possibility; scientific relations are most suitable for this investment since their maintenance does not strengthen the Soviet potential to any serious extent but it strengthens the idea of the supra-national character of science and mutual understanding. It leaves open the possibility for discussion of political issues even during times of stress as the Pugwash movement has shown in the past.

C. Scientific collaboration has been of advantage to science in general. It is unavoidable that it will be weakened in the near future because of the understandable emotional reaction of many United States scientists against the recent happenings. But, we ought not to cut the scientific relations with the Soviet Union completely. We should leave open the door for eventual resumption of these relations on the previous level or above. We should keep the official agreements intact if a bridge had to be used again to a greater extent in better times.

Appendix A: Report on Trip to Soviet Union by
Bernard R. Cooper and John Parmentola

REPORT ON TRIP TO SOVIET UNION
TO VISIT REFUSNIK SCIENTISTS

Bernard R. Cooper
Dept. of Physics
West Virginia University
Morgantown, WV 26506

and

John Parmentola
Dept. of Physics
Massachusetts Institute of Technology
Cambridge, MA 02139

The Third International Conference on Collective Phenomena (i.e. the third international conference organized by the Soviet Refusnik scientists) took place on December 27-29, 1978 in Moscow. Three American, seven French, one British, and about thirty Soviet scientists participated in the conference. Originally, there were to be eight American participants; however, five were denied visas. We were two of the five denied visas. We decided to try again to obtain visas after a slight delay, and succeeded in doing so without incident. Our objective was to visit the Refusnik scientists: (1) to provide them with some scientific contact and information, (2) to obtain firsthand information about their situation, (3) to discuss ways in which we and the physics community could help them. We visited Moscow from February 24 to February 28 and Leningrad from February 28 to March 3, 1979. We attended and participated in one of the weekly Sunday seminars held in Victor Brailovsky's apartment in Moscow, and visited with several Refusniks in Moscow and Leningrad.

This report is in three parts: (I) we will present facts which we gathered on our visit; (II) we will present strategies and future activities which have been suggested; (III) we will summarize our general impressions of the Refusnik situation in both Moscow and Leningrad.

I. Facts

1. There has been a sizeable increase in allowed Jewish emigration; however, the number of Refusniks (i.e. those left behind) has been increasing proportionately. The difficulty for physicists to obtain permission to leave is especially bad. Their skills are particularly valued in the Soviet Union, i.e. physicists are viewed as being quite "useful" and have

high status. Secrecy of past research activities is often used as a pretense for barring emigration.

There are about 200 Refusnik families in Moscow, 25 of which are those of scientists. In Leningrad there are also about 200 Refusniks, of which about half or three quarters became Refusniks in the past year. There are 15 Ph.D. Refusniks in Leningrad (2 physics, 4 mathematics, 4 chemists, 5 engineering scientists) and 6 physicists (2 being Ph.D.'s as noted above).

2. Since the Orlov and Shcharansky trials, the Refusniks have perceived an attenuation in the American scientific community's human rights activities. Furthermore, from their point of view, there appear to be inconsistencies in the Carter Administration's human rights policies and also in those of the National Academy of Sciences. The exchange agreements signed during the Press visit to Moscow in February and by the N.A.S. in Washington a day later were cited. Great distress was expressed by Refusniks in both Moscow and Leningrad over the fact that these signings followed only a few days after A. Shcharansky's right to a semiannual visit from his mother had been cancelled. According to the Refusniks in Moscow, the Soviet government has taken advantage of this perceived weakness by stating through its media that it is taking a hard line with Carter, and that the U.S. should not meddle in Soviet internal affairs.

3. There are three separate scientific Refusnik seminars in Moscow: the Brailovsky Sunday seminar (oriented toward the physical sciences), the Lerner Monday seminar (oriented toward systems analysis and cybernetics), and the Meiman seminar (oriented toward mathematics). There is one scientific Refusnik seminar in Leningrad which meets every Monday at 7:00 p.m.

from mid-September to early June. This meets in the apartment of A. Taratuta and is headed by A. Kagan (seminar is oriented toward applied mathematics).

4. The Leningrad Seminar group has requested scientific journals and magazines (e.g. Science, Physics Today, Scientific American). We have arranged for these to be sent. Science and Physics Today are being sent by the AAAS and AIP respectively, and Scientific American through an informal arrangement.

5. The participants in the Brailovsky Seminar are planning an international conference in October or November in honor of the 100th birthday of A. Einstein.

Some details

Victor Brailovsky has been denied the right to pay income tax on his tutoring income. This could result in parasitism prosecution under Soviet law. The Rector of Moscow State University, Academician Logunov, has admitted to not signing a letter stating that there was no secrecy involved in Irina Brailovsky's work.

II. Suggested Strategies and Activities

1. Future visits of American scientists should include scientific discussions with official Soviet scientists as well as Refusnik scientists. These discussions should be open in the sense that it is made clear to Soviet officialdom that Refusnik scientists are respected as scientists in

the international scientific community and continue to contribute to the advancement of science through their scientific work and discussions with their colleagues abroad. Excellent examples of this activity were the recent visits of M. Kruskal (Princeton applied mathematician) and Nobel Laureate Arno Penzias.

2. Visiting American scientists should pursue frank discussions, both here and in the Soviet Union, with official Soviet scientists who can influence and expedite the emigration procedures for specific Refusniks. A partial list of official Soviet scientists and corresponding Refusniks is attached. Also included are a few official Soviet addresses and one operating Refusnik telephone number in Moscow.

3. It has been suggested, specifically by Solomon Alber, a mathematician and self-taught lawyer, that the role of lawyers, and in particular the A.B.A., is particularly important now because of the refusal of the judiciary of the Soviet government to issue a copy of the verdict in the case of Shchransky. This is necessary for appeal. (At the request of Shcharsky's mother, Alber was prepared to act as Shcharansky's Counsel during his trial, but this was not permitted.)

III. General Impressions

Everyone we talked to felt that pursuing activity II.2 is a very effective way of facilitating their release. This was especially emphasized by the Leningrad refusniks who felt that scientific administrators are very receptive to discussions with their colleagues from abroad.

Our impression is that the degree of anti-semitism is very strong; that it is severe, and getting worse. During all of our discussions, this was a recurring theme and it was especially emphasized for the field

of mathematics. Most of the situation we discussed in item I.1 can be accounted for by this phenomenon. Many young Jews are becoming Refusniks because their professional opportunities are being blocked.

As for the Refusniks themselves, one feels a tremendous admiration for their courage and their ability to pursue their science under great pressures. Their enthusiasm about their science and perserverance to obtain their freedom and regain their respectability as scientists leaves a lasting and a most profound impression.

NAMES AND ADDRESSES OF DIRECTORS & ADMINISTRATORS RESPONSIBLE FOR REFUSENIKS

Refusenik

Prof. Solomon Alber
Chernogolovka Pervaya U1 16/28
Moscow, RSFSR, USSR

Jacob L. Alpert
2-Oi Mosfilmousky Peroluk 21/198
Moscow 119285, RSFSR, USSR

Irina Brailovsky
Vernadskogo 99/1/128
Moscow, RSFSR, USSR

Dr. Vladimir Dashevsky
Akademicheskaya 7-A, Apt. 10
Troitzk, Moskovskaya 143092
RSFSR, USSR

Yuri Golfand
Leninsky Prospekt 44/134
Moscow 117334
RSFSR, USSR

Abram M. Kagan
Ul. Karpinskogo 14, Apt. 86
Leningrad K-256, USSR

Arkady I. Leonov
Acad. Il'yushin St. 1/54
Moscow 125319, RSFSR, USSR

Alexander Lerner
Dimitry Ulyanov Street 4/2/322
Moscow B333, RSFSR, USSR

Administrator

Academician H.N. Semenov, Director and
Academician Talroze, Deputy Director
Institute of Chemical Physics
Vorobyevskoye Chausee 2
Moscow, V-133, RSFSR, USSR

Academician Vladimir Vasilievich Migulin, Dir.
Institute on Earth Magnetism and Radio Wave
Propagation (IZMIRAN)
Academy of Sciences of the USSR
142092 P/O Akademgorodok
Moskovskoi OBL, USSR

Academician Anatoly Logunov, Rector
Moscow State University
Leninsky Gory
Moscow, RSFSR, USSR

Academician Vladimir Vasilievich Migulin, Dir.
Institute on Earth Magnetism and Radio Wave
Propagation (IZMIRAN)
Academy of Sciences of the USSR
142092 P/O Akademgorodok
Moskovskoi, OBL, USSR

Academician Gennady A. Basov, Director and
Academician Vitaly L. Ginzburg, Chairman
of Department
Physical Institute
Academy of Sciences of the USSR
Leninsky Prospekt
Moscow, RSFSR, USSR

Academician L.D. Fedayev, Director
Steklov Mathematical Institute
Krannoputilovskaya 2
Leningrad, USSR

Prof. Liebrovitch, Deputy Director and
Academician Ishlinsky, Director
Institute of Problems in Mechanics
Academy of Sciences of the USSR
Moscow, RSFSR, USSR

Academician V.A. Trapeznikov
Institute of Control Science
Profsoiuznaya Street
Moscow, RSFSR, USSR

Refusenik

Naum Meiman
Naberezhnaya Gorkovo 4/22/57
Moscow, RSFSR, USSR

Emil Mendzheritzky
Usievicha St. 8/89
Moscow, RSFSR, USSR

Yuri Kalenov
Krasnoarmeiskaya 10/7/51
Moscow, RSFSR, USSR

Lev Ulanovsky
Obrucheva 3/1/64 **EMIGRATED**
Moscow 117421, RSFSR, USSR

Marks Kovner
156 Gorky St., Apt. 3
Gorky N-6
RSFSR, USSR

Semen Jantovsky
26 Bakinsky Komissarov Street 3/3/240
Moscow 117571, RSFSR, USSR
Doctor of Chemical Sciences

Dr. Yuri Cherniak
Shchelkovskoje Shosse
98/57/74
Moscow, 105523, RSFSR, USSR

Administrator

Academician A.P. Aleksandrov, President
Academy of Sciences of the USSR
14 Leninsky Prospekt
Moscow B-71, RSFSR, USSR

Dr. N.S. Lidorenko, Director
All-Union Scientific Institute of Current
Sources
Moscow 1-164, USSR

Academician Vitaly I. Goldansky, Deputy
Director
Institute of Chemical Physics
Vorobyevskoye Shosse
Moscow, RSFSR, USSR

Academician Belotzerkovsky, Rector
Moscow Physical-Technical Institute
Dolgoprudny
Moscow, RSFSR, USSR

Prof. A. G. Ugodchikov, Rector
Gorky State University
Prospekt Gagarina 23
Gorky, RSFSR, USSR

Academician A. V. Gaponov
Gorky Research Radiophysical Institute
ul. Semashko
Gorky, RSFSR, USSR

Yuri N. Khristoradnov, First Secretary
Regional Committee, Communist Party of
the Soviet Union
Gorky, RSFSR, USSR

Academician N.M. Emanuel
Institute of Chemical Physics
Academy of Sciences of the USSR
Vorobyevskoye Chausee 2b
Moscow V-334, RSFSR, USSR

Minister of Aircraft Industry
Vasilij Kazakov
Ulanskij per 16

Academician Anatoly Logunov, Rector
Moscow State University
Leninsky Gory, Moscow, RSFSR, USSR

Academician Vernov, Director
Institute of Nuclear Physics
Moscow State University
Moscow, RSFSR, USSR

Appendix B: List of refusniks adopted by the
APS

<u>Name</u>	<u>City</u>	<u>Specialty</u>
Pavel Abramovich	Moscow	Computer Science
Solomon Alber	Moscow	Mathematics and Physics
Jacob Alpert	Moscow	Mathematics and Physics
Piotr Balshem	Tashkent	Physics
Mark Berenfeld	Moscow	Physics
Benjamin Bogomlny	Moscow	Mathematics
Yuly Borodovsky	Tashkent	Computer Science
Elizaveta Bykova	Tbilisi	Physics
Abram Englin	Moscow	Chemistry
Viktor Faermark	Moscow	Chemistry
Eitan Finkelshtein	Vilnius	Physics
Fima Flomenblit	Krasnodar	Computer Science
Daniel Fradkin	Leningrad	Mathematics
Valentin Ganin	Moscow	Mathematics
Vladimir Gertsberg	Kiev	Mathematics
Isay Goldshtein	Tbilisi	Physics
Yuri Golfand	Moscow	Physics
Boris Gurevich	Moscow	Chemistry
Alexander Ioffe	Moscow	Mathematics
Abram Kagan	Leningrad	Mathematics and Physics
Yuri Kalenov	Moscow	Geology
Gennady Khasin	Moscow	Mathematics
Vladimir Kislik	Kiev	Physics
Israel Klein	Tashkent	Physics
Mark Kushnir	Chernovtsy	Physics
Bronislav Lainer	Moscow	Physics
Mosey Liberman	Bendery	Physics
Erna Lubenskaya	Leningrad	Chemistry
Osnis Marat	Chernovtsy	Mathematics
Efim Pargamannik	Kiev	Physics
Vilen Partisponian	Leningrad	Chemistry
Lev Raibshsteinas	Vilnius	Physics
Vladimir Raiz	Vilnius	Physics
Royak Viacheslav	Bendery	Computer Science
Gregory Rosenstein	Moscow	Computer Science
Boris Ryvkin	Leningrad	Mathematics
Leonid Shabashev	Moscow	Chemistry
Evgeny Shakhnovich	Leningrad	Mathematics
Vladimir Shakhnovsky	Moscow	Mathematics
Valentin Simanovsky	Leningrad	Physics
Vladimir Slepak	Exiled in Siberia	Scientific Engineer
Aba Taratuta	Leningrad	Mathematics
Iosif Treistman	Kishinev	Mathematics
Grigory Velinzon	Leningrad	Computer Science
Leonid Volvovsky	Moscow	Computer Science
Iosif Yanovsky	Angarsk	Computer Science
Vladimir Shulemovich	Novosibirsk	Heat Physicist
Stanislan Yarzhembovsky	Leningrad	Mathematics
Irina Brailovsky	Moscow	Mathematical Physics
Viktor Brailovsky	Moscow	Computer Science
Aleksandr Lerner	Moscow	Computer Science
Naum Meiman	Moscow	Mathematics and P
Joseph Begun	Exiled in Siberia	Mathematics
Marks Kovner	Gorky	Mathematics and Ph
Iosif Golfman	Leningrad	Chemistry
Mark Reznik	Leningrad	Computer Science
Andrei Sakharov	Moscow-Gorky	Physics
Yuri Orlov	Moscow-in prison	Physics

Appendix C:

1. Testimony on problems of mail delivery to the Soviet Union before the Committee on Post Office and Civil Service U.S. House of Representatives

2. Letter from Dr. Yuri Golfand documenting journal delivery problems of the Soviet Union

MAILGRAM SERVICE CENTER
MIDDLETOWN, VA. 22645

MAILGRAM

4-033696E180002 06/29/79 ICS IPMMTZZ CSP BSNA
1 6172535349 MGM TDMT BOSTON MA 06-29 0150P EST

J PARMENTOLA
4 LONGFELLOW PL APY 1204
BOSTON MA 02114

Testimony on problems of mail delivery to the Soviet Union
before the Committee on Post Office and Civil Service U.S.
House of Representatives

THIS MAILGRAM IS A CONFIRMATION COPY OF THE FOLLOWING MESSAGE:

6172535349 MGM TDMT BOSTON MA 268 06-29 0150P EST
ZIP

PROFESSOR OWEN CHAMBERLAIN
2822 PRINCE ST
BERKELEY CA 94705

WE WOULD LIKE TO TAKE THIS OPPORTUNITY TO CONVEY SOME DISTURBING FACTS AND SUBSTANTIATE TESTIMONY WHICH WILL BE PRESENTED TO YOU BY PROFESSOR OWEN CHAMBERLAIN. RECENTLY WE VISITED THE SOVIET UNION WITH THE PURPOSE OF MEETING WITH REFUSNIK SCIENTISTS FOR BOTH SCIENTIFIC DISCUSSIONS AND FOR HUMANITARIAN REASONS. DURING ONE LENGTHY CONVERSATION OF FEBRUARY 25 1979 IN THE APARTMENT OF DOCTOR VICTOR BRAILOVSKY (ADDRESS: VERNADSKY PROSPEKT 99, BLDG 1, APT 128, MOSCOW) AND IN THE PRESENCE OF REFUSNIK LEADERS, DR VICTOR BRAILOVSKY DR YURI GOLFAND, DR SOLOMON ALBER, AND JACOB ALIPERT, WE WERE INFORMED THAT THE AMERICAN PHYSICAL SOCIETY JOURNAL, PHYSICAL REVIEW LETTERS, HAVE NOT BEEN RECEIVED SINCE JULY OF 1978. DR YURI GOLFAND, A PROMINENT AND WORLD RENOWNED PHYSICIST, EXPRESSED CONCERN OVER THE TOTAL LACK OF AVAILABILITY FOR REFUSNIK SCIENTISTS OF THIS JOURNAL THAT SERVES AS AN IMPORTANT SOURCE OF CURRENT WESTERN SCIENTIFIC RESEARCH WORK. THIS JOURNAL IS VITALLY ESSENTIAL TO THE ADVANCEMENT AND PRODUCTIVITY OF THEIR SCIENCE AND THEREFORE TO WORLD SCIENCE IN GENERAL. WITHOUT IT THEY ARE CUT OFF SCIENTIFICALLY FROM THE WEST AND THEREFORE MUST RELY ON INFREQUENT PERSONAL VISITS BY WESTERN SCIENTISTS FOR INFORMATION. DURING A DINNER WITH THE SAME REFUSNIKS ON FEBRUARY 27 THE SAME CONCERNS REGARDING THE LACK OF DELIVERY OF THIS JOURNAL WAS EXPRESSED. WE HOPE THIS INFORMATION IS OF VALUE TO YOU AND TRUST THAT THE IMPORTANCE OF THE DELIVERY OF THIS JOURNAL IS EMPHASIZED TO THE PROPER SOVIET AUTHORITIES
RESPECTFULLY YOURS

DR JOHN PARMENTOLA
DEPT OF PHYSICS
THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY
PROFESSOR BERNARD COOPER
DEPT OF PHYSICS
WEST VIRGINIA UNIVERSITY

13:51 EST

Letter from Dr. Yuri Golfand documenting journal delivery
problems of the Soviet Union

December 26, 1979

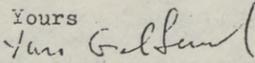
Bernard R. Cooper
Benedum Professor of Physics
West Virginia University
Department of Physics
College of Arts and Sciences
Morgantown, WV 26506

Dear Barry,

I am very glad to receive your letter. The situation
with Ph.R.L. does not change. This year I have received
the following copies: Vol. 42, NN 3, 14, 19, 21; Vol. 43,
NN 17, 18, 23. That's all.

You see it reminds a record of any random process.

I wish you happy New Year.

Yours

Yuri Golfand

Appendix D: Farewell address by APS President Lewis Branscomb on behalf of Dr. Sakharov

Farewell address by APS President Lewis Branscomb on behalf of Dr. Sakharov

In his farewell speech as President of The American Physical Society, Dr. Lewis Branscomb, today stated the following:

"Members of The American Physical Society at our annual meeting, in Chicago have been shocked and deeply distressed today to learn of the sudden official action in Moscow against Academician Andre Sakharov,

"Dr. Sakharov is not only one of the world's most brilliant physicists but has been an eloquent spokesman for free expression of scientific thought and the freedom of scientists in accordance with the principles of the Helsinki accords. I do not know what has happened to Dr. Sakharov, and hope he will be allowed to leave the USSR if authorities will no longer permit him his freedom.

"I am deeply concerned lest this news presages a new level of repression of scientists' freedom in the Soviet Union, and a further blow to international scientific cooperation and harmony. As President of The American Physical Society, I can only hope that our many respected scientific colleagues in the Soviet Union will join with us in doing whatever we can to reverse the downward spiral toward international calamity that Dr. Sakharov has worked so long and so eloquently to avoid."

Appendix E: Copy of telegram from Herman Feshbach
to Academician Alexandrov on behalf of Dr. Sakharov

Copy of telegram from Herman Feshbach to Academician Alexandrov
on behalf of Dr. Sakharov

"Members of the American Physical Society are shocked and deeply distressed by the sudden official actions taken against the physicist Academician Andre Sakharov. They are seriously concerned with the severe impact these may have upon the bridges built up over many years between the scientists of the U.S. and the scientists of the USSR. We urge you and your colleagues in the Academy of Sciences of the USSR to do all that you can on behalf of Academician Sakharov so that his and his wife's freedoms are restored and they return to Moscow."

Mr. BROWN. Gentlemen, I'd like to propound just one question and ask you to comment on it. For some reason or other, I have a rather utopian view of science as being practiced by individuals who are superior to politicians, more intelligent, detached, with better judgment and so forth.

When faced with a problem of the sort that we now have, the violation of civil rights specifically illustrated by Sakharov, but relating to many things throughout the world, not just in the U.S.S.R. and with the knowledge that you have of the conditions necessary for beneficial scientific interaction amongst the scientists of the world, do you think that it would be possible for the scientific societies themselves or individual leaders in the scientific community to come up with a framework based on something like the proposals made by Dr. Flory or Dr. Edsall? It would serve as a sort of a—as a standard for the conduct of scientific exchanges, personal exchanges, the exchange of information, conduct of international meetings, scientific meetings which in effect then we could measure the conduct of individual nations.

Whereas the Helsinki Agreements contain no sanctions, actually most of our exchanges take place within a framework of law. The 1972 agreements, generally speaking, and other types of legislation, perhaps gradually we could build this framework into a structure of law and preferably of international law. Is it conceivable that the scientific community could do this or when they get involved in the realm of politics, do they have the same problems that politicians do?

Dr. FESHBACH. I don't think there would be any problem in formulating what is a good scientific meeting. I think we all know that. That's part of our bread and butter, blood stream, what have you. The only question I would ask is whether it would be a good idea to make that as part of an international arrangement; namely, do we get the Soviets to sign off on it or do we treat it case by case?

Mr. BROWN. Well, that would enter into the whole question. The scientific community ought to make their own recommendations as to the kind of sanctions that should be imposed for failure to meet acceptable standards for scientific communication.

Dr. FESHBACH. I have no problem there. I mean the sanctions would be very simply you wouldn't have the meeting, for example. But, what I'm asking is whether this has to be formalized in an open way.

I want it formalized and I do want it open, but the question is, Do I get the Russians to sign it or do I just apply it?

Mr. BROWN. Well, you just might explore that at Hamburg and see what kind of reaction you get. I suspect the Russians wouldn't sign it. but the Russians are only a very small part of the international community. Even in the General Assembly of the United Nations, they are frequently outvoted. Dr. Ralston?

Dr. RALSTON. I'm not quite so sanguine as my colleague about the possibility of even getting such a structure established. My own experience with the various societies just in computing tells me that on many issues they find it as hard to agree as politicians often do.

I think that, as Dr. Feshbach says, there is no difficulty in getting agreement on what makes a scientific meeting bona fide. But, there is clearly a great deal of disagreement among the various scientific societies as to how one should set standards for political kinds of behavior in relation to scientific standards.

While I think the idea is a good one, I think the way to do it is to start with those societies who are sympathetic toward doing these things and then see if we can get the rest of the community to agree to it.

But, it's difficult in other countries as here. There has, for example, been quite a bit of controversy in Britain about how much scientists should be involved in these affairs. Thus, I think the idea is a good one, but very difficult to implement.

Mr. BROWN. Let me tell you the alternative. We have had some excellent suggestions here to illustrate how an ideal world would work. But in the absence of any rule of reason in this field, we are reacting on an ad hoc basis. This hearing is an ad hoc reaction to the Sakharov case. The Congress generally reacts that way and the results are not very satisfactory. A problem that I discuss frequently with the scientific community and I preach to them sort of, is that until they take an interest in setting standards involving this delicate field where politics and science intersect, they are going to be faced with standards that they don't like which are going to come from outside the field of science.

Dr. GOTTESMAN. Could I interject my own opinion? There is something about having a grassroots movement among scientists which gives it a strength which an organized movement doesn't have. It tells the Russians that this is a unanimous opinion that it's not being imposed by society or being imposed by the Government. It is very strong.

If all the scientists, by their ad hoc reasoning, come to the same conclusion, it has tremendous power.

Mr. BROWN. Dr. Edsall, since you made so many excellent suggestions for such a standard, would you like to comment?

Dr. EDSALL. The kind of monitoring that I suggested, I think, would probably have to be done on a voluntary basis. I think many scientists could be brought in on it. Ideally the International Council of Scientific Unions should be involved.

The trouble is they have Russians on most of the ICSU committees and the Russians might be able to veto the proposals for any effective action by such committees. I think it has to be done on a more voluntary basis. However, I think the support for this could be pretty widespread in this country and in many of the countries of Western Europe, and also Canada and Australia.

Mr. BROWN. The point that you make is in my opinion the strongest argument for having the scientific community do this themselves rather than having it done through a formal governmental structure. The people in the U.S.S.R. who are calling the shots are a bunch of hardnosed politicians. They know that over here, the Congress is dictated to by the robber barons of Wall Street and they pay no attention to the decisions that we make because they discount them on political grounds. They can't do this with the international scientific community. By virtue of that fact, voluntary standards established in a democratic way by the international scientific community would probably have a greater effect on them than the force of law passed by the U.S. Congress.

Dr. EDSALL. I think the concern should be not only with the proper freedom of organization and running meetings, but also with other forms of communication.

Mr. BROWN. I think it's despicable what they have done to Science magazine.

Dr. EDSALL. Letters and telephone calls and such should not be obstructed and the kind of censorship that is displayed by that issue of Science which I exhibited in the Russian version should be abolished if possible. You may not be able to stop it, but at least the facts should be brought out and exhibited, so that the international scientific community can see what is going on.

Mr. BROWN. You gentlemen, I'm sure, are all aware of the fact that we have an agreement with the Russians now with regard to the distribution of certain periodicals. We publish a Russian language magazine and distribute it over there. It's a very slick, glossy thing. They are prohibited from interfering with it. All we have to do is not interfere with their publication which is distributed over here. Both are propaganda—they are good propaganda organs, generally speaking, but they are propaganda. Why can't this be extended to the field of scientific communication? We wouldn't interfere with theirs and they won't interfere with ours.

Dr. FESHBACH. I don't think there is any problem with getting it physically into the Soviet Union. The problem is getting it into the hands of the Soviet dissidents.

Mr. BROWN. I always oversimplify things.

Dr. FESHBACH. It would be perfectly possible for example, in spite of Tony Ralston's demure, to set up a set of standards of what a good meeting could entail. We know it, but it might be useful to have it in black and white and let each group apply it as each event comes along. Try it here and let it spread throughout the rest of the world.

Mr. BROWN. I can assure you from long experience in trying to set up standards, there are just as many difficulties afterwards as there were before because they always have to be interpreted.

Dr. RALSTON. On the one hand, it's too bad it takes an incident like what happened to Sakharov to spur hearings like this or anxiety or action on the part of the scientific community.

These things have been going on for a long time and have needed the same kind of attention that we are giving them now. Still we should use this particular incident to do the kind of thing that you were suggesting, to mobilize the scientific community to do the kinds of things that we know have needed doing for a long time.

Mr. BROWN. Gentlemen, I would be delighted to spend a good deal more time discussing this with you, but you have sat through 4 hours of hearing here under difficult circumstances and I am not going to impose on you further. I do wish to state again how much I appreciate your willingness to help us build a record in this case and I think we have an excellent record that will help us to move forward in this area of science exchanges and related matters much more effectively.

Thank you very much. The meeting will be adjourned.

[Whereupon, at 6:01 p.m., the hearing was adjourned.]

APPENDIXES

APPENDIX A

REPORT

of the "Scientific Forum" of the Conference on Security and Co-operation in Europe.

In accordance with the provisions of the Final Act of the Conference on Security and Co-operation in Europe and of the report of the meeting of experts representing the participating States and their national scientific institutions held in Bonn from 20 June to 28 July 1978, the "Scientific Forum" took place in Hamburg, Federal Republic of Germany, from 18 February to 3 March 1980. It was held in the form of a meeting of leading personalities in science from the participating States.

During the opening session of the "Scientific Forum" the participants were welcomed by Hans-Ulrich Klose, Lord Mayor of the Free and Hanseatic City of Hamburg, and were addressed by Dr. Hildegard Hamm-Brücher, Minister of State, Ministry of Foreign Affairs, on behalf of the Government of the Federal Republic of Germany.

During the first working session of the Plenary representatives of UNESCO and the United Nations Economic Commission for Europe (ECE) made their contributions. Opening statements were made by representatives of delegations of the participating States.

Four subsidiary working bodies were established by the Plenary on alternative energy sources, food production, medicine, and the humanities and social sciences. Representatives of UNESCO and the ECE were invited to make additional contributions in these working bodies.

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The "Scientific Forum" discussed interrelated problems of common interest concerning current and future developments in science, and promotion of expansion of contacts, communications and the exchange of information between scientific institutions and among scientists.

In this context the subsidiary working bodies have considered the following areas and subjects:

Exact and Natural Sciences

Scientific research, in particular fundamental research, in the field of alternative energy sources

Exact and Natural Sciences

Scientific research, in particular fundamental research, in the field of food production

Medicine

Current trends in medical research, in particular in basic research and primarily on cardiovascular, tumor and virus diseases, taking into consideration the influence of the changing environment on human health.

The Humanities and Social Sciences

Comparative studies on the social, socio-economic and cultural phenomena, especially the problems of human environment and urban development.

The subsidiary working bodies also reviewed written contributions submitted to the "Scientific Forum".

On the basis of their deliberations they have drawn up reports which were reviewed by the Plenary and are included, as amended, in Annexes 1-4.

As a result of its proceedings the "Scientific Forum" concluded the following:

- Since the signing of the Final Act of the CSCE, there has been a significant expansion of international co-operation in research and training and in the exchange of information. Progress, however, has been greater in some areas than in others. It is observed that the present state of international scientific co-operation still requires improvements in various respects. Such improvements should be achieved bilaterally and multilaterally at the governmental and non-governmental levels through intergovernmental and other agreements, international programmes and co-operative projects, and by providing equitable opportunities for scientific research and for wider communication and travel, necessary for professional purposes.
- This goal can, however, be reached only by respect for all the principles and by full implementation of the relevant provisions of the Final Act. All participating States are, therefore, urged to observe the spirit and the letter of the Final Act, particularly with respect to conditions essential for international scientific co-operation.
- It is furthermore considered necessary to state that respect for human rights and fundamental freedoms by all States represents one of the foundations for a significant improvement of their mutual relations, and of international scientific co-operation at all levels.
- Appropriate support should be given to arrange advanced seminars and training courses for young scientists from participating and other States that would enable them to study new scientific methods for shorter or longer periods. Information about these activities and arrangements should be disseminated as widely as possible.

- The different levels of scientific development in particular fields in the participating States should be taken into account when pursuing scientific co-operation.
- It is recommended that the participating States study the possibility of convening a new "Scientific Forum", at a suitable date, depending on developments in science and in scientific co-operation among the participating States. The results of the "Scientific Forum" in Hamburg may be taken into account, as appropriate, by the participating States at the Madrid Meeting, scheduled for November 1980.

The participants expressed their deep gratitude to the Government of the Federal Republic of Germany for the excellent organization of the "Scientific Forum" and for the warm hospitality extended to them during their stay in Hamburg.

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ANNEX 1: Alternative Energy Sources

1. Introduction

The working body has examined the problems created by the rapid dwindling of easily accessible reserves of fossil energy and has reviewed the alternative solutions provided by other energy sources.

During the discussions it became apparent that the delegates from different countries had interpreted the term "alternative energy" in different ways. However, it was agreed that the following four main categories should be discussed as the energy options for the future:

Advanced utilization of fossil energy, nuclear energy (fission and fusion), solar energy (direct and indirect forms), and energy conservation. The working body has made no attempt to give priorities to the different options.

2. Need of fundamental research on various alternative energy sources

2.0 General

The working body notes that the questions of developing energy resources today are of vital importance. The further development of civilization in the economic as well as in the political fields depends on the possibility of satisfying demand for energy in industry, in the residential and service sectors, in transport, in food production, and in mining and processing of minerals.

In spite of the necessity for and possibility of the more economical use of energy, the demand for energy will continue to rise. The problem demands especially urgent solutions because of the diminishing energy resource represented by oil and gas.

That is why the task of scientific research in the field of energy is to supply during the next decade the reliable scientific basis for planning and use of all basic resources of energy. Such a basis should include forecasts on the environmental effects of the various types of energy, in particular improved assessments of the effects on the global and regional climate.

The working body recommends governments to use international co-operation for the fulfilling of this task.

It is not possible to give universal priorities for any research objectives as many countries have already found and applied technological solutions to problems relevant to their situation, whose relevance for other countries has yet to be investigated.

2.1 Problems of utilization of fossil fuels - efficiency and safety

The urgent need to increase utilization of low-quality fossil energy resources - coal, brown coal, oil shale and tar sand, lignite, peat etc., - as well as at the same time to tighten the environmental requirements make it necessary to develop ever more advanced combustion and conversion methods. In spite of the need for an intensified interest in more efficient and cleaner combustion methods as well as in the use of synthetic liquid and gaseous fuel from coal, oil shale, and tar sands and considering that several large demonstration projects exist, synthetic fuel production is still on a rather narrow basis. Both fundamental and applied research is needed on a broad front before synthetic liquid or gaseous fuels are capable of substituting for the natural hydro-carbons in commercial amounts.

Particular attention must be given to the problems of safety in deep mining and to the efficiency of production methods in both deep and open cast mining.

2.2 Nuclear energy

The problem of energy supply for the majority of participating countries cannot be solved without using nuclear energy for producing electricity and heat. The economic efficiency of nuclear fission technology has been established, the reliability has been shown to be good, and the environmental aspects are becoming well understood. All aspects of the nuclear fuel cycle will require continuing efforts to assure its full reliability and safety, in order to ensure public acceptability.

For the guarantee of further nuclear prospects the development of breeder reactors is necessary.

The working body states that not enough efforts have been made so far in the development of unconventional types of reactors.

The working body notes that research in the field of controlled thermonuclear fusion is nearing the level of scientific demonstration. Great efforts are necessary, however, to demonstrate even more urgently the technological feasibility of fusion.

2.3 Solar energy and other renewable energy sources

Many ways exist for the wider application of solar energy through direct and indirect methods, and in decentralized and centralized forms. In the long term they could contribute significantly to solve the energy problems. Some of these solar technologies are already in use, some are under development and some are still in the research stage. The same is true for geothermal and tidal sources of energy.

Besides the scientific and technical problems, however, there also exists a number of other open questions pertaining to the wider application of solar energy. Those questions involve for example economic, infrastructural, environmental, legal and administrative aspects. It is important that these problems are treated together with the scientific problems within a common framework, in order to ensure a balanced and optimal use of solar energy.

The tentative suggestions for promising solar energy research areas in the list below do not assign priorities. Further, the selection of areas to a certain extent reflects the specialities of the individual scientists in the working body. The list is therefore only indicative and should be open for revision.

- Energy storage is crucial to small and large-scale use of solar energy and also of great general importance.
- Solar heating, including systems for integration into local or district heating schemes.
- Energy from biosystems, especially production and conversion of fuels from wood, cultivated biomass etc.
- Solar electricity based on the industrial development of existing photovoltaic or photothermal techniques and on research on novel approaches.
- Basic research in photochemistry and photobiology.
- Scientific evaluation of future solar energy prospects on a national or regional scale.
- Integration of solar energy into existing energy systems, for different forms of energy and end-use requirements.

2.4 Energy conservation

Energy consumption and economic activity are very closely related. The principal way to optimize this relationship is conservation. The conservation should be aimed at minimizing energy losses, elimination of ineffective energy use, recycling of materials as well as development of energy saving processes and technologies. Much research and development activity is needed continuously for efforts on energy conservation in industry, in transportation, in buildings and in appliances and services of many kinds and on improvements in technology. This can be achieved through fundamental as well as applied research.

In this context the working body would stress the vital role of technological innovation.

3. International co-operation

Special attention must be paid to the problem of exchange and assessment of scientific and technical data. Individual and institutional scientific contacts are seen here as the best means. Strengthening of existing information centres is another, e.g. within the framework of ECE and UNESCO.

The working body supports the existing forms of international and regional co-operation, increased contacts amongst research organizations, including the framework of the United Nations special organizations, e.g. International Agency for Atomic Energy, UNESCO, Economic Commission for Europe etc., and non-governmental organizations e.g. International Council of Scientific Unions.

The forms of co-operation can include the organization of international conferences, symposia, schools, exchange of scientists between different countries and bodies, discussing research programmes on a regional or bilateral scale, and the working out and realization of joint international projects. The working body noted with approval the examples of international activity, such as INTOR carried out under the aegis of IAEA, and the energy project of IIASA.

The working body especially asks international organizations to take initiatives to promote co-operation in fields of advanced coal utilization technology, deep coal mining safety and solar energy.

The working body on alternative energy sources considers its meetings to have been useful. Since the energy problem is important and of a long-term nature, the working body proposes the continuation of this type of interdisciplinary scientific meeting.

The working body had a thorough discussion on all tasks on agenda item number 2. The content of these discussions are reflected both in this Annex and in the general conclusions contained in the Report of the "Scientific Forum".

Annex 2: Food Production

The future demand, and for many the present demand, for food and feed in the world, emphasized by the "Scientific Forum" of the CSCE, requires sustained research and development efforts in all aspects of the food system.

The need became evident, during the discussions of the Working Body, for more integrated multidisciplinary research, training at undergraduate ^{and} postgraduate level, exchanges of scientists and their interaction. Although the Working Body recognised the limits of their CSCE terms of reference, it agreed that food production was of world importance.

In plant genetics and breeding there is a need for international co-operation on development of more productive plants with higher photosynthetic capacity, more efficient capability to use available mineral nutrients, and better ability to withstand environmental stresses. In this research, scientists should make effective use of modern plant breeding techniques including haploid breeding and various tissue culture techniques in addition to standard methods to obtain crosses, noting the importance of wide crosses. In research on crop production, there is a need for co-operation on the development of energy-efficient management systems based on biological nitrogen fixation and other ecological means as well as the conservation and management of natural resources. The importance of plant protection was stressed as a means of reducing losses.

In the area of animal production, there is a need for more co-operative research on the genetic improvement of farm livestock; the control of infectious diseases, metabolic disorders and infertility; the increased use of non-protein nitrogen in the ruminant diet; animal housing, nutrition and improvement of the efficiency of management systems;

and elimination of stress susceptibility and improvement of products of animal origin.

Special attention is drawn to the need for international co-operation in identifying and preserving germ plasm of plants and animals in their natural ecosystems. This should include more, and more comprehensive, gene banks to preserve genetic materials for the benefit of plant and animal production in the future.

Fisheries contribute substantially to the food system. International attitudes should facilitate rather than hinder fisheries research. Continued international vigilance must be maintained on the effects on the stock of the size of catch and of pollution to ensure long-term benefits from this important natural resource.

Attention is drawn to the significant contribution that technology can make to the diminution of post-harvest losses and to the maintenance of the wholesomeness and nutritional quality of foods. More research is needed on alternative sources and economic production of basic food components such as proteins, essential amino acids, etc. Collective efforts should be expanded in the fight against all forms of malnutrition through the assurance of the natural quality of foods and protection against introduction of harmful contaminants during production, processing, storage and distribution. Intensified efforts are needed in the area of nutrition education both at academic and consumer levels and should include multidisciplinary behavioural studies on eating habits and food acceptance. In the final analysis, it is health and nutritional status that is the prerequisite for the well-being of all mankind.

The Working Body expressed confidence that existing governmental and non-governmental international organizations will be able to help in expanding research on the subjects to which attention is drawn in this report.

The Working Body thus had a thorough discussion on all tasks on agenda item number 2. The content of these discussions are reflected both in this Annex and in the general conclusions contained in the Report of the "Scientific Forum".

ANNEX 3 : Medicine

The outcome of the work of the subsidiary working body is presented in the following sections on cardiovascular, neoplastic and viral diseases. The working body had a thorough discussion on all tasks on agenda item number 2. The content of these discussions are reflected both in this Annex and in the general conclusions contained in the Report of the "Scientific Forum".

Cardiovascular Diseases

The various reports presented to the "Scientific Forum", and other information available, underline that cardiovascular diseases, where atherosclerosis and/or hypertension are involved, are of major concern in most participating countries. These two main and interrelated ailments with their complications - ischemic heart disease, cerebrovascular disease and peripheral vascular disease together show a high level of incidence and account for a high death rate.

Therefore it seems imperative that special efforts of basic research should be focused on the mechanisms of atherogenesis and causal mechanisms in essential hypertension. On the other hand, it emerges from the reports that there is also great need for help from the behavioural sciences in order to improve compliance both of doctors and the public especially with respect to advice in the interest of prevention and treatment. Preventive measures in childhood are worth a special research effort.

From the various reports it is seen that marked and diverse research efforts are already being made in most countries towards illuminating the mechanisms that lay behind these groups of diseases. A main effort also appears to be directed towards their prevention and treatment.

Since the etiology and pathogenesis of these diseases are far from being fully understood and since these ailments dominate the disease pattern in so many countries, it appears that they must be looked upon as fields for international concern and that fruitful patterns of international co-operation should be encouraged. Such co-operation should be looked upon as an effort being additional to the widespread research already going on in the different countries.

In order to identify projects and fields, related to cardiovascular diseases where international co-operation might be fruitful one could use the following list of 'indications' for such endeavour.

'Indications' for making a bi- or multinational co-operative effort in the cardiovascular field 1/

1. Co-operative research

1.1 international studies that exploit the transcultural differences in exposure to known or presumed risk factors (for instance in connexion with migration) to draw conclusions about causality either in a qualitative or a quantitative sense.

1.2 studies that require such large numbers of patients in order to come to a conclusion that these cannot be found in one single country. Large and complicated drug trials might be an example in point.

1.3 studies that are so costly that they can only be financed by a collaborative effort.

1.4 studies in which there is an abundance of patients of a certain kind say, with rheumatic heart disease, in one country and resources such as interested experts and/or financial support available in another country.

1.5 study projects that can only succeed if expertise in different fields from different countries is pooled.

1.6 study of occurrence, natural history and/or treatment of uncommon cardiovascular diseases that necessitates pooling of observations from different countries.

2. Evaluation

Comparative studies of the efficiency and effectiveness of different health care systems and health care practices in the fields of prevention, clinical medicine and rehabilitation.

1/ Here efforts are meant, that are distinct from research activities on a local or international co-operative basis, the results of which are then reported to audiences of scientific meetings and in the international literature.

3. Co-operative surveillance

Examples:

- a co-operative early warning system for the side effects of drugs.
- a co-operative early warning system for failures of certain types of electronic pacemakers.

4. Standardization of nomenclature

Examples:

- coronary angiogram
- congenital heart disease
- level of rehabilitation after myocardial infarction and cerebrovascular disease.

5. Standardization of procedures

Examples:

- determination of all blood lipids and lipoproteins used in epidemiological research.
- determination of prostaglandins.
- collection of epidemiological data.

6. Transfer of techniques

Examples:

- a systematic programme of practical courses in new and/or difficult biochemical determinations with an updated listing of such courses that is made internationally available.
- exchange of computer software in the field of epidemiology and clinical cardiology.
- facilitation of transfer of new or difficult techniques in the cardiovascular field.

7. Co-operative moves by scientists in the field of prevention

Example:

- simultaneously urge against cigarette consumption or in favour of food habits that can promote prevention.

CANCER

The group stresses that international co-operation in cancer research is necessary in order to achieve progress in the cancer problem.

Such international co-operation exists in Europe and throughout the world, and is carried out by a variety of governmental and non-governmental organizations and societies.

The group urges governments and other appropriate bodies to increase support for such organizations, so that existing programmes of international co-operations can be continued and enlarged. Due care should be taken to avoid unnecessary duplication. Progress of international collaboration in cancer research should be monitored periodically by the appropriate bodies.

The group requests that special emphasis should be devoted to the following:

- (1) Free dissemination of regional and local data on cancer and related etiological factors, and assistance for field studies.
- (2) Extension of cancer registries to include new regions and countries.
- (3) Extension of information exchange in cancer treatment, including data on screening, testing, toxicity, drug interactions and, where applicable, exchange of drugs. Elaboration of ethical principles.
- (4) Standardization of reagents, diagnostic methods and test systems.
- (5) Access to research facilities and data from health care systems.
- (6) Training courses, especially for young scientists in oncology and appropriate basic biology, including new methods.
- (7) Increased opportunities, especially for young scientists to learn new approaches in cancer research, by short-term and long-term fellowships.
- (8) Direct and rapid contact between working scientists in collaborating laboratories, by all available means of communication.

VIROLOGY

In spite of great achievements in the prevention of some of the most severe virus diseases, the relative and absolute importance of viruses as causes of acute and chronic infectious diseases has increased.

For this reason and being aware of the utmost importance of international co-operation, for example in the eradication of smallpox, the virologists feel that such co-operation is necessary in trying to solve some of the many important problems in virology. International co-operation exists already in the field of virology both in Europe and in the world and is carried out by several governmental and non-governmental organizations.

The virologists urge that the existing programmes in the field of virology should be continued and enlarged. Unnecessary duplication should be avoided.

Although partly covered by existing organizations and arrangements further international co-operation is required in the following :

- Rapid dissemination of information on epidemiology of virus diseases in the different regions.
- Some fields of molecular virology as for example recombinant DNA including safety regulations and evaluation of benefits.
- Promoting channels for information on new methods in diagnostic procedures, especially rapid diagnosis of virus diseases.
- Standardization of material for diagnostic tests as well as for materials used for prevention and treatment of virus diseases.

- Study and prevention of some of the common and especially important diseases such as respiratory infections and hepatitis.
- Obtaining access to research facilities in different institutions, especially for young scientists, including training courses, and long or short-term fellowships, for example in regional institutions prepared to give training in applied clinical and epidemiological virology.
- Direct and rapid contact between working scientists in collaborating laboratories by all available means of communication.

ANNEX 4: Humanities and Social Sciences1. The Main Issues to be FacedA. General Issues

The main issues to be faced include such general phenomena as rapid demographic, social, cultural and psychological changes, the impact of the increasing sophistication of technology, the shifting role of women in society, alterations of values concerning the environment, and limitations imposed by a growing energy shortage. (A more detailed list of the problems to be faced appears in the Appendix.)

B. Urbanization

The process of urbanization has brought new possibilities and problems which have affected rural areas and open spaces as well as cities and their inhabitants. Among them are effects of internal and external migration, problems of crowding, disorder and crime, alterations to the natural environment, and pollution of the atmosphere, water resources and the land. All of this calls for an improved understanding of the processes of urbanization and their relationship to regional development.

C. Environmental Quality

There has been a growing consciousness of the importance of the protection of environment, but there are practical problems due to the imperfect understanding of the environment. In addition, economic accounting should to an increasing extent take into consideration not only economic activity but also the social, cultural and ecological values of the environment.

D. Research Methodology

The highly complex problems of urban development and environmental protection require the use of multi-disciplinary approaches, comparative studies and the development of mathematical, simulation or other kinds of models. Some of the difficulties in research on these matters is due to the differences in the collection, analysis of data and other materials in the various countries.

2. The Tasks Ahead

Based on the above considerations, six major areas of research were identified:

1. Changes in population structures and characteristics,
2. Present and future social, cultural, behavioral, economic and spatial problems of the process of urbanization,
3. Preservation of national patrimony and environment,
4. Impact of new technologies on human behavior, natural environment, and urban ecosystems,
5. Organization of ecologically oriented urban and regional planning and management,
6. Education, training, preparation and diffusion of information.

These areas were drawn from the detailed list of topics presented in the Appendix.

To ensure that such research is undertaken, and that its results will be put to use, two developments are needed. One is a larger allocation of funding than is presently characteristic in the social sciences and humanities, especially in the lesser developed countries with smaller resources. The other is the creation of closer co-operation between scientists, planners, the public and policy-makers.

It was emphasized that the needed efforts in the research can be attained by existing institutions with support of governments and administrative authorities. There was also agreement that promotion and expansion of international cooperation and collaboration is needed in research as well as in the training of scientists and in the exchange of information.

3. Recommendations

- (a) Scientific conferences and seminars should be organized during the coming years on the problems of urban development, cultural changes and the quality of the environment. These meetings could focus particularly upon problems in comparative studies and methodology in the interdisciplinary approach to investigations of social, socio-economic, ecological and cultural aspects of urban development and environmental change. These conferences or

seminars could be organized by UNESCO or ECE, and where appropriate in cooperation with existing international scientific bodies including the European Co-ordination Centre for Research and Documentation in Social Sciences (known as the Vienna Centre) and the International Institute for Applied Systems Analysis (IIASA). A consultative body of experts should prepare the meetings on the basis of results of national studies. The latter might focus upon a number of special pilot projects on urban and/or environmental issues, the results of which would then be discussed in the international forum.

- (b) International, national and regional organizations operating in Europe should be encouraged by CSCE within their field of competence, to arrange advanced training courses and seminars for scientists from states participating in the CSCE. In particular, provisions should be made for young scientists to attend training courses arranged in participating states.
- (c) An inventory of recently completed and ongoing studies on the problems of urban development and of human environment should be organized. A review of experience in the international cooperation in research and in the exchange of information should be undertaken. These reviews could be compiled by one of the existing international bodies, for example through UNEP, ECE or UNESCO.

- d) Eco-toxicological studies connected with relevant methods in the social and health sciences should be supported and improved on an international basis, especially within the relevant projects of the Scientific Committee on Problems of the Environment (SCOPE) of ICSU, and WHO.

- e) A series of comparative studies should be strengthened on the procedure^s in integrated urban and regional planning and management in order to determine the most effective way to link research to the process of decision-making.

- f) The impact of science and technology on society, the methodology of interdisciplinary studies with special reference to behavioral, social and natural sciences, research and policy making in social fields, the decision making process including the involvement of the public, research in political sciences relevant to the CSCE countries, science policy and improved and more efficient forms of cooperation, including the institutional framework, are themes which should be further explored in future meetings.

The working body had a thorough discussion on all tasks on agenda item number 2. The content of these discussions are reflected both in this Annex and in the general conclusions contained in the Report of the "Scientific Forum".

APPENDIX

GENERAL ISSUES

1. The impacts of increasingly sophisticated technology on urban development, lifestyles, and the environment compared with "appropriate" technology which may be less sophisticated but more closely adapted to the environment and the preservation of social values.
2. The impacts of an aging population on the economy, requirements for social services, housing and transportation.
3. The effects of the changing role of women in the work force.
4. The effects of shifts in social values on the role the individual plays in planning and policy-making.
5. The gap between the perceptions of various groups of professionals as to what society needs and how this should be provided and the perceptions of the public at large.
6. Finding effective means for including the results of research on human dimensions of urbanization and environmental quality in planning and policy-making.
7. Problems of undertaking and implementing truly comprehensive planning.
8. How to make research on social science and the humanities more relevant for planning and policy-making.

ENVIRONMENTAL ISSUES

1. The impact of environment on human health.
2. How to tackle the problems of environmental hazards and technological risks.
3. How to develop comprehensive environmental plans into which plans for industrial, transportation, urban and social development might be fitted.
4. Determination of the values which individuals attach to particular environments, and the extent to which such values vary over space and time.
5. Impediments to the improvement of environmental quality.
6. How to investigate objectively changes in the quality of life.
7. How to develop a broader perspective in planning so that more intensive use may be made of existing resources rather than bringing in new supplies from elsewhere, e.g. the introduction of wastewater renovation and re-cycling as opposed to development of water supplies at progressively further distances from the city.
8. The impact of economic development on environmental quality.
9. Sustaining an interest in the environmental question at the political level.

METHODOLOGICAL ISSUES

1. The circumstances in which an inter-disciplinary approach is especially appropriate, and the ways in which it can be most successfully pursued.
2. The integration of non-technical and non-economic factors in models relating to urban development and environmental quality management.
3. Problems of undertaking comparative studies, especially where cultural traits make data collection difficult, or where meanings and values attached to given phenomena are unique to a particular area.
4. How to take account of shifts in social values and new developments in technology in planning and policy-making.
5. Provision of opportunities for education on the environment.
6. How to cope with decision-making under uncertainty.
7. Inclusion of predictions of shifts in social values and development of technologies in plans and policies.

URBAN DEVELOPMENT AND HUMAN ENVIRONMENT

1. SOCIAL AND CULTURAL PROBLEMS OF URBANIZATION

Changes of population structures and their impact on urban life and development. (Professional structure, the impact of women entering the work force, new family models, youth-adult correlations, increasing ration of old people).

2. URBAN MIGRATION AND ITS CONSEQUENCIES

Social effects of migration to and from cities and its impact on areas of immigration and emigration. Increasing diffusion of urban population from cities to countryside leading up to leveling of differences between urban and rural life. The role of small and medium-sized cities. The process of concentration and of deconcentration of urban activities.

3. THE FUTURE OF URBANIZATION

Human adaptation to changing of urban life. The impact of technical progress on ^{the} functional and spatial structure of urbanization from ^{an} ecological point of view. Prognosis of new form of urbanization. Environment and technology. Optimum size of cities. The "human scale" in urban development.

4. TECHNOLOGIY AND ECONOMY CONFRONTED WITH HUMAN, SOCIAL, CULTURAL AND ECOLOGICAL NEEDS

Human perception of urban environment. Economical value of ecological and social factors. How to integrate ecological, social, cultural and economical criteria.

5. PRESERVATION OF NATIONAL PATRIMONY AND ENVIRONMENT

Interdisciplinary environmental research. Preservation of the national patrimony ^{on} in local and national scale (architectural cultural and traditional values, urban structures . Adaptation of old cities to new needs. Revalorisation of old housing system.

URBAN DEVELOPMENT AND HUMAN ENVIRONMENT (continued)

6. INTERRELATIONS BETWEEN URBAN AND REGIONAL DEVELOPMENT

Correlations between urban and regional growth and the national development. Urban and rural development. Structural forms of the net of settlements. Process of urban concentration and deconcentration.

7. METHODS OF ECOLOGICALLY ORIENTED INTEGRATED URBAN AND REGIONAL PLANNING

Principles of integrated planning. Methodology of long-term urban and regional planning presenting several strategies of development. How to compare them from economical and ecological point of view (mathematical models). The territorial integration of planning and implementation. Systems of urban management.

8. PROBLEMS OF BIG CITIES AND METROPOLITAN AREAS

Comparison of ^{various} cities growth. Internal structures of metropolia, their complex problems: housing, ^{location}, traffic, places of work, etc. Special problems of industrialized cities and regions, harbour cities and coastal urbanization.

9. EDUCATION, TRAINING AND INFORMATION

Methodology of comprehensive environmental training and education of specialists in undergraduate and postgraduate scale. Special training of young scientists. Informations ^{about} of the importance of ecological, social and cultural aspects of urban development and environment protection for decision-makers and the large public. New means: mass media, etc.

Public participation in planning and in implementation decisions. The public control of the mode of implementation of the results of planning based on scientific research.

APPENDIX B

Address to the Opening Plenary Session

Philip Handler

Chairman, Delegation of the United States of America

to the

Scientific Forum of the CSCE

Hamburg, F.R.G.

18 February to 2 March 1980

Mr. Chairman, distinguished delegates to the Scientific Forum from the nations of the Conference on Security and Cooperation in Europe, ladies and gentlemen:

Let me express the thanks of my country, and its delegation, for the hospitality of our host, the Federal Republic of Germany, and to my friend, Dr. Klaus Gottstein, Executive Secretary of the Forum for his diligence and imagination in preparing for this unprecedented gathering. Whatever the outcome of the Forum, we owe a debt of gratitude to Dr. Gottstein and to the City of Hamburg for establishing a suitable atmosphere in which to conduct our discussions.

The Forum is not a 'scientific meeting' as scientists use the term; it is a part of the 'CSCE Process'. Its principal concern is the international scientific enterprise, including its rules of ethical conduct, rather than the substance of science, itself. The Forum, therefore, is seen by the American delegates as an opportunity for scientists, speaking for themselves, as scientists, rather than for their governments, to discuss freely and without restriction those matters particularly germane to the improvement of

scientific relations among the CSCE countries. We were delighted to hear Frau Hamm-Brucher's invitation to speak frankly. My purpose, today, is to summarize for you, those matters that we most wish to discuss for the next two weeks.

We who have gathered here believe that knowledge gained anywhere benefits mankind everywhere. The unprecedented burgeoning of understanding of living systems and of the physical universe in the last three decades requires no recounting. Nor does the equally remarkable proliferation of technologies that affect virtually every aspect of our daily lives. But those dramatic developments have markedly altered the societal role of the scientist precisely because it is science that now offers the principal means to affect the ancient scourges of humanity--war, famine, and pestilence--as well as to affect the quality of life everywhere.

The scientific communities of the world will inevitably be expected to assume greater responsibility for expanded food production and dietary improvement, for better health care and the eradication of disease, for improved communication, for new ways both to conserve and to harness sources of energy, and--regrettably--for the development of new and more lethal weapons. We will also be faced with the great need to contribute to popular education for citizenship in our technology-dominated world. Pari passu, we will surely consider ourselves ever more responsible for the ways in which the fruits of our labors are used by the larger society.

Knowing all this, and knowing that governments today seek to use science and technology in ways unthinkable but a few decades ago, we must also reckon with the fact that scientific interchange across national boundaries, among scientists and their institutions, has become far more complicated than once it was.

What can we foresee for the future of scientific cooperation, exchange, and communication?

Because science is international, we have always been faced with the problem of international agreement on technical standards: on units of measurement, on symbols and nomenclature. Now, it is even more important that we agree and conform to common standards of responsibility and behavior.

It is ironic, therefore, that the obstacles to free and timely interchange among scientists are becoming more, not less, significant and complicated as our technical capacity to communicate expands. It is a painful paradox that scientific interchange has become more vulnerable as the forums for such interchange become more numerous.

Our formal adoption of common standards of behavior began in 1958, when the International Council for Scientific Unions (ICSU) first took a stand by adopting a resolution on political non-discrimination. In 1963, ICSU created its Committee on Free Circulation of Scientists. In 1976, it published its resolution on the universality of science and established the Committee on the Safeguard of the Pursuit of Science. (I am pleased that the distinguished Chairman of that Committee, Professor Ole Maaløe of Denmark, is a delegate to this Forum.)

Thus, the one nongovernmental scientific organization with which every scientific community represented at this Forum has some contact has a history of more than two decades of thoughtful, constructive progress toward the concept of common standards and values in the world of science. The Helsinki Final Act complements the ICSU initiatives and expands both their meaning and their force, since the Final Act was signed by governments rather than by scientists.

Yet, today, this Forum gathers in an atmosphere of international tension and with somewhat less than full trust. Those of you who read the press dispatches from the United States will know that the American delegation is here despite calls to boycott from a number of eloquent and eminent American scientists. You will be aware of the deep, pervading concern of the American scientific community for the fate of individual scientists now in prison, in exile, or held against their will in their own countries. Harsh words have been spoken; some of them were mine at a recent hearing before the Commission of our Congress charged with following the progress of the Helsinki Accords.

The American delegation to the Scientific Forum fervently believes that freedom is absolutely essential to the scientific endeavor. We are critical of national acts that fail to meet the basic tests of adherence to the Helsinki Final Act. We are dismayed about the manner in which some countries regulate the participation of their scientists in international scientific meetings; about the abridgement of freedom to leave a country, as well as of permission to enter it; about the censorship of international journals of science; about the dismissal of scientists from their posts because they ask to emigrate, or because they disagree with the current policies of a government; about the harsh treatment of scientists who have sought to monitor how well their governments adhere to the provisions of the Helsinki Accords.

Let me invite your attention to the Universal Declaration of Human Rights, to the International Covenant on Economic, Social and Cultural Rights, and to that excellent little monograph by the Council for Science and Society and the British Institute of Human Rights, entitled "Scholarly Freedom and Human Rights." It makes the unambiguous point that "The success of a scholar's work depends as much on the freedom of others to study and do research as it does on his own."

The members of our delegation will speak as individuals, as free men and women from a free country; we will offer constructive proposals on ways to improve the atmosphere for scientific interchange, on ways to find common standards and values, and on specific proposals for steps toward a true cooperative spirit.

In 1976, I told the Annual Meeting of our Academy that:

"I am committed to defense of the human rights of all persons, and to those of scientists in particular. Not, as is so often argued, because humanity may be denied the fruits of their science, but because they are precious as human beings; because abrogation of their rights is injurious to all mankind; because as liberal intellectuals, scientists not infrequently become involved in the defense of the human rights of others; and because I am likely to be best informed concerning their circumstances."

To me, and to all members of the American delegation, the questions of freedom of inquiry, freedom to write and publish, freedom to speak, freedom to come and go across national borders, and freedom to live where one's heart and conscience take one, are

indissolubly bound to freedom of one's person. We cannot consider scientific communication as separate and distinct from other forms of human communication. We perceive no essential distinctions between pursuit of truth about the nature of man or of the physical universe and pursuit of truth about the human condition in the societies in which we live. We will speak out for those whose rights have been denied, for the cost of silence is the abandonment of human rights and that is a price we will not pay.

Nor do we speak for ourselves alone. In our country, in a spontaneous upwelling without precedent, thousands of scientists have been declaring themselves personally unwilling to engage in scientific interchange with colleagues in the Soviet Union until the government of that country has restored the normal civil rights of such scientists as Shcharansky, Kovalev, and Orlov who have been imprisoned for acts consonant with the spirit of the Helsinki Agreement. They also protest the years of useless waiting of scientists such as Aleksander Lerner and Naum Meiman. And they are prepared to continue their protest until that scientist whom the Nobel Committee termed "the conscience of mankind" is once again allowed to serve his country and humanity with the freedom and honor he so well deserves. The scientific world refuses to accept protestations that such matters are the internal affairs of the countries involved. Indeed, agreement that these transgressions, wherever they occur, are of universal concern is the very essence of the Helsinki Accords. And if disaffection continues to spread among Western scientists, if the matters that trouble us are not rectified, if we are confronted with yet further crises of conscience, the

interchanges that we have gathered here to foster will, instead, soon dissolve in bitterness and anger.

In the past decade or so, the number of scientists crossing borders among the CSCE countries has expanded remarkably. International scientific cooperative programs have developed with enthusiasm and substantial governmental support. All of us would like this cooperation to continue and expand and would like the scientific cooperative avenues to broaden. Some of the CSCE countries have benefitted more than others; it would be good to redress that imbalance, to assure that the fruits of the scientific endeavor are truly of equal benefit to all.

The least complicated, yet in many ways the most important area of scientific cooperation is fundamental research--the exploration of nature itself. In an ideal world, this would require the support but neither the permission nor the catalysis of governments since it occurs readily on the initiative of scientists themselves. Since every political barrier to this spontaneous process must be a matter of deep concern to scientists everywhere, such problems rank high on the agenda of this Forum.

But there are also numerous opportunities for meaningful cooperation in the areas of applied research on our agenda. For example, there are opportunities for significant new cooperative ventures--bilateral and multilateral--in the fields of conservation, conversion, transmission, and use of energy. Patently, the success of efforts in these directions will be critical to the vitality of the economy and the quality of daily life in every country and may well be determinant with respect to the prospect for world peace.

Before this century is over, the success or failure of science may well be judged by the success or failure of agriculture. There are vast possibilities for increasing knowledge of genetic mechanisms which can improve geographic adaptability and disease resistance. With patience and skill, the reproductive efficiency of livestock can be enhanced and the devastations of epizootic diseases can be reduced. Current research on plant diseases may enable environmentally-conservative biological methods of pest control, for example through the use of gametocides, sterilants, and species-specific microbial pathogens. Better knowledge of the photosynthetic process and germplasm exchange should enable markedly enhanced food production efficiency.

Scientists stand before the bar of a hungry, burgeoning humanity; we must not be found wanting.

We have just begun to bring the fruits of new biological knowledge and understanding to bear on the dread diseases of mankind. The eradication of smallpox is a classic model of international cooperation in the application of knowledge. That accomplishment is a tribute to Professor Raska ^{of} the Charles University in Prague who was, for years, the lonely principal proponent of what became the successful eradication campaign and to Professor Henderson of Johns Hopkins University who planned and directed its final stages.

We are morally constrained to seek like solutions to such other infectious diseases as measles and poliomyelitis; to help bring under control such tropical diseases as trachoma and schistosomiasis and this conference should so resolve. What we are learning about interferon, hormones and their receptors, immunochemistry, genetic mechanisms, environmental challenge, the early detection and treatment of many forms of cancer, and the etiology and pathogenesis of cancer, atherosclerosis and 'autoimmune diseases' must be shared fully with each other and with those who conduct research on health problems in countries outside the CSCE family.

To share the results of the combined health research of the CSCE countries is surely a moral imperative.

Collective scientific research and decision-making are essential if we are to arrest global atmospheric and marine degradation and pollution. No nation has the resources, the access, or the talent to grapple with these problems alone. As one of our delegation has remarked, "Real progress in improving global environments while simultaneously making the fruits of technology accessible to a broader spectrum of the citizens of all countries is such a worthy objective."

We are well aware that only through the careful nurturing of cross-cultural communication can we bring a sense of perspective and balance to each others' views. The blights that bedevil many of the world's cities and the grinding poverty and ignorance of many rural peoples are, or are about to become, the common problems of all societies. We need each other if only to seek amelioration of these great evils.

It would be an immense tragedy if the glorious possibilities of cooperation in these ventures were to be denied to mankind in consequence of disintegration of the international scientific order because of the failure of some to live up to the standards of behavior to which our governments agreed in Helsinki. Are the ideological polarizations of today's world driving our scientific communities apart? Or can reason and good will prevail? We may know more two weeks hence.

It is my heartfelt hope that the results of this Forum will yet be recorded with pride by the scientists in attendance.

For the duration of this Forum, I suggest that we could usefully ask ourselves the following questions:

- (1) Can the ways in which the international organizations of science address their tasks be improved?
- (2) If traditional disciplines impose conventional boundaries that are inappropriate to today's needs, can new terms of reference be devised for the broadly-construed fields of inquiry before us?
- (3) Can we agree on guidelines to assure that international meetings and exchanges will take place in a climate conducive to free association and unfettered communication?
- (4) Is it possible to develop an international style that leaves arrangements for scientific interchange in the hands of scientists, not politicians, a style that facilitates the acceptance of invitations and the dissemination of knowledge, in which the desirability of mutual benefit is implicit?
- (5) Can we agree to strengthen the apparatus and the resolve of the International Council of Scientific Unions to develop and apply that set of common standards and values which is already part of its agenda?

But I must warn that even constructive, affirmative responses to these questions may not suffice. This meeting is being watched. This Forum, once deemed of little significance, has become a "step between Belgrade and Madrid," and the signals emanating from these halls will not go ignored.

To achieve the modest goals I have proposed, it is imperative that we and our governments first wholeheartedly accept and resolve to implement the elemental propositions concerning human rights that underlie the very roots of our scientific endeavor.

To quote another colleague:

"...intellectual freedom is essential to human society-- freedom to obtain and distribute information, freedom for open-minded and unfearing debate and freedom from pressure by officialdom and prejudices. Such a trinity of freedom of thought is the only guarantee against an infection of people by mass myths Freedom of thought is the only guarantee of the feasibility of a scientific democratic approach to politics, economy and culture."

Those words were written by a Foreign Associate of the National Academy of Sciences of the United States of America: Andrei Sakharov.

Thank you.

APPENDIX C

Closing Statement

by

Philip Handler

Chairman, Delegation of the United States of America

to the

Scientific Forum of the CSCE

Hamburg, F.R.G.

2 March 1980

Having volunteered to initiate the closing statements, I take great pleasure in expressing to our host scientists, to the government of the Federal Republic of Germany, to Dr. Gottstein and his conference staff--the interpreters and all the lovely ladies who have so efficiently managed a vast array of paper--our heartfelt gratitude for the innumerable courtesies extended us, and for the pleasant environment that they created for us. We want to say "thank you" to the University of Hamburg and its Rector for the useful programs they presented and for their generous, gracious hospitality. Finally we also want to thank the good fathers of the City of Hamburg for their efforts to make our stay comfortable and rewarding. And it is also time to thank those of our colleagues who have chaired our various sessions: working groups, formal plenary sessions and informal meetings. Having escaped that chore myself I am both grateful and relieved that others did it so well.

As our chairman has already noted, the most profound vote of thanks must, however, be reserved for our drafting group coordinator, Peter Troendle, whose unfailing patience and good will, evenhandedness and gentle humor undoubtedly

did more to bring us together than any other single person or factor in the meeting.

And finally, may I express my gratitude to all of the participants in the Forum from whom I have learned so much. It has been a long, tiring two weeks--but also a marvelous opportunity to form new friendships.

A facetious reference to "U.S. vital interests" in the informal drafting group reminded me of how remarkable a mixture of vital interests comes together in the CSCE.

Thirty-five countries are attempting to harmonize their attitudes about international borders and their own national security, about human rights and humanitarian concerns, about science and commerce. Their delegates, here, derive from a wide diversity of national cultures and they attempt that harmonization simultaneously in six languages--to say nothing of the many European tongues which are not official to the CSCE, yet native to various of our delegates.

The attempt at creative diplomacy that occurred here has seemed extraordinary to the scientists present, if for no reason other than that, perforce, we have spent two weeks studying the content and language of the Final Act. We have discovered--albeit painfully--how rich

it is and how comprehensive its underlying concepts. But we have also found ourselves frustrated and exasperated by the rules of behavior that govern CSCE meetings.

I, for one, have also learned, once more, how difficult it is to merge the two cultures of science and diplomacy. If ever there is a second Scientific Forum, I hope that it will occur in two stages. The first should be a meeting of scientists only--in all their glorious naiveté, enthusiasm and concern for fellow scientists everywhere. In the second phase, the CSCE experts should attempt to put in place, within the CSCE framework, what the scientists indicate that they wish to accomplish. It would surely be an interesting variation, and minimize the trauma of the "culture shock" that we have experienced. Meanwhile, I am grateful to our CSCE experts; they have done much to help us escape disaster.

When we arrived, I expressed the hope that we would be proud of our efforts at the end of the two weeks that faced us. Humbly, I confess that whatever pride I can muster is modest indeed.

It is surely much too soon to appraise what we have accomplished. Still, at this close range, it seems that we can take some small satisfaction in the progress that

we have made in the "journey from Belgrade to Madrid." By this I mean primarily that we appear to have helped sustain the "CSCE process," and I understand that this is of particular importance to our colleagues here in Europe.

Moreover, there are several meaningful, pregnant paragraphs in our Final Report. They speak of the importance of human rights and fundamental freedoms to international scientific cooperation and of the high value we attach to equitable opportunities to do research and to communicate and travel in association with such endeavors. If, in due course, these paragraphs are implemented by governments in the manner we intend, our two weeks in Hamburg will not have been in vain.

Yet, I must express my regret that we could not discuss more adequately and make more progress with respect to those problems, of deep significance to the future of international scientific cooperation, concern for which brought many of us to Hamburg. These were the matters that lay behind the issues which have absorbed so much of our time in the "non-existent" drafting group. How I wish that the nature of our meeting had been such that we could have taken serious stock of the matters that

continue to present real problems in the scientific relations among us, and have discussed these as they deserve.

In the Western view, the state is servant to the individual. Western scientists will continue to feel and express their deep personal concern for fellow scientists whose rights as human beings and as scientists have, in our view, been abrogated. I named several in my opening statement; they, and others, are, regrettably, all too well known. To our esteemed Soviet colleagues here this evening, let me say that the eyes of the scientific world will be on the meeting of your Academy Nauk this week. In the spirit of this Scientific Forum, we hope that Andrei Sakharov will not suffer humiliation at the hands of his fellow scientists.

The concerns that brought many of us to these halls are still very much with us.

Let me express the hope--once again--that, in the weeks and months to come, we will all reflect on the fact that the ultimate subject of our interest is the individual scientist. Only by concentrating our attention on the intellectual and spiritual freedoms and the conditions of work of each scientist, our most precious natural resource, can science survive in the years ahead.

Since science is surely the most powerful instrument available to mitigate the condition of man, the survival of science is absolutely critical to the survival of human societies.

As we have demonstrated at this Forum, the scientific enterprise can be, collectively, a small bridge of understanding among nations at a time when the penalty for serious international misunderstanding is far too great for humanity to pay. But as we have learned here, construction and maintenance of that bridge demands intense effort and at least an occasional willingness to forego confrontation in favor of forbearance and an assumption of good will. The extent to which we did so is mirrored in about eight typed lines of our Final Report. I hope that history will not find us wanting.

Thank you.

APPENDIX D

Let me begin with the very pleasant duty of conveying to all the distinguished participants in the Scientific Forum the greetings and good wishes of the Italian government. I also express our warmest thanks to the host Authorities and to the Executive Secretariat for the great care with which they have attended to organizational details, thus ensuring that our stay in Hamburg will be not only productive but also comfortable.

Secondly, speaking on behalf of the scientists in the Italian delegation who, in expressing their views, will be guided essentially by scientific interests, and on my own behalf, I want to tell you how determined we are to work constructively, each in his own area of expertise, to contribute to the development of science through the promotion of contacts and knowledge among scientists and scientific institutions.

The organization of this Forum represents the practical realization of specific intentions contained in the Final Act of Helsinki. It forms part of the broad range of work of all kinds following up the Conference on Security and Cooperation in Europe, together with the large number of meetings being held among the 35 participating countries after the signing of the Final Act. The Forum can make an important and individual contribution, which, within the broader setting of more specifically political or legal meetings will have as one of its important consequences the intensification of mutual relations between scientists from the various countries.

Italy is a part of Western Europe and as such has contributed from the beginning to the creation of a number of European Organizations devoted to research and the development of Science.

Italy is one of the twelve members of CERN (Centre Européen pour la Recherche Nucléaire). High energy physics is the subject of the researches carried on in the CERN laboratories in Geneva in a very close and friendly collaboration—and at the same time in sound competition—with the Stanford Linear Accelerator Center (SLAC), the Enrico Fermi National Laboratory in Batavia, near Chicago, and the Brookhaven National Laboratory at Long Island. CERN has also developed a tight collaboration with the International Laboratory of Dubna and the Russian laboratory of Serpukhov.

Walking through the experimental areas of the Geneva laboratory you can meet, quite often, teams of excellent young Soviet scientists, or, here and there, well known physicists belonging to many Eastern European countries. All of us are happy of these collaborations and we hope that they will be strengthened with the passing of time.

Fifteen western European countries are members of the European Space Agency (ESA), with its main quarter in Paris. The missions in space carried on by ESA, are carefully coordinated with those of NASA and of the corresponding organization for space research in USSR, although, quite frequently, with much greater bureaucratic difficulty.

The visitor of ESTEC, the technological laboratory at Nordwijk, in the Netherlands, or of ESTOC, the center for collection and elaboration of data at Darmstadt, West Germany, always encounters scientists from USA and frequently also from USSR, that are working there, side by side, with European scientists. It is always a great pleasure to collaborate with them.

There are others European Scientific Organizations such as the Joint European Thorus for Fusion Research, in short JET, located at Culham, in Great Britain, and the European Science Foundation (ESF), centered at Strasbourg, of which I could also talk at length from the point of view of their aperture towards collaborations with all other countries, in particular towards eastern Europe.

As a conclusion of this short view of the European collaborations I would like only to add a few words about the European Physical Society which is a kind of pool of the National Physical Societies of all countries from Western as well as from Eastern Europe.

I was very glad to hear the Head of the Soviet Delegation mentioning the International Center for Theoretical Physics of Trieste, as well as the more recently created center in Udine. Both of them are in great part financed by the Italian Government and for both of them, we Italians, but I believe I can say, we western Europeans, are glad to express our satisfaction, in full agreement with our Soviet colleagues.

It is important that there should be opportunities to develop these relations not only through the agencies and organizations set up for the purpose—or through the various academies, the national research councils and the universities—but also through natural and spontaneous contacts, and this means through ordinary personal acquaintance as well. Therefore, any restriction on the freedom of movement of scientists, or the exchange of ideas between them, or on their freedom to express their views and does severely hamper scientific and technological development, and, at the same time, disrupts cooperation and détente.

When we hear—and nowadays this is happening all too often—of authorities sentencing scientists to harsh penalties, severely curtailing their movements, or refusing to issue the documents they need to attend international conferences, even quite short ones, or to leave home to settle in other countries, we feel the deepest concern.

These harsh limitations of fundamental freedoms certainly undermine the scientific cooperation and détente among the countries of Europe.

In particular it is not acceptable that those who speak out for actual implementation of the commitments taken in the frame of the Conference on Security and Cooperation in Europe, are exposed to limitations of their personal freedom.

I would like that our colleagues of the USSR Delegation realize that we, as members of the Italian Delegation, cannot return to our country and say that, here in Hamburg, we did not talk about these problems.

We cannot return to our Faculties of Natural Science, Medicine, Engineering or Economy of the Universities of Rome, Milan, Bologna, Palermo and Catania and say that on the problem of the dissident scientists or on that of Jewish scientists who have lost their job after their application for an expatriation visa, we have not expressed a clear opinion.

I cannot return to Rome and say to my colleagues of the *Accademia Nazionale dei Lincei*, that these problems were not discussed because they did not appear in the agenda.

Perhaps very few people know that there are many (according to an Italian newspaper of the last week more than one hundred) cities of Italy, whose councils have voted unanimously the attribution of the honorary citizenship to Andrej Dimitrovic Sakharov. This is a solidarity without precedents in Italy!

I feel even more struck and humiliated by the news I read only today in the international press that, last Friday, Sakharov and his wife were roughed up near their exile house in Gorki, during a clash with police agents.

Mr. President, without leaving out of sight these two problems, that of the dissident scientists, and the other, of certainly not less importance, of the Jewish scientists who have received a refuse to their request for a visa and, at the same time, have been fired from their jobs, two problems that we consider of fundamental importance, the Delegation which it is my honour to preside, will endeavour in actively contributing to all the sectors of our mandate.

We have very little time—only two weeks—in which to get to grips with the major questions on our agenda, but I think we do have the opportunity to do something to strengthen, in human terms, the links which science has already forged among us.

The themes chosen, we feel, should encourage—at a difficult time in international relations—an approach to science as an instrument at the service of man, peace, and, to use a political expression, détente.

APPENDIX E

[Report from Chemical and Engineering News—Mar. 10, 1980]

Forum links science ties and human rights

A small but significant step was taken last week toward establishing respect for scientific freedom and human rights as part of the "rules of the game" for international scientific relations.

After two weeks of what one participant called "rough, exasperating, and frustrating" negotiations between scientists from East and West—concluding at 5 AM last Monday—agreement on a statement upholding these principles was reached at a Scientific Forum in Hamburg, West Germany. The forum brought together scientists representing the 35 nations that signed the 1975 Helsinki accords on European security, cooperation, human rights, and the free flow of information and ideas.

The forum was called to discuss major scientific problems of common interest, and to examine methods of improving international scientific contacts and communication. However, stresses National Academy of Sciences president Philip Handler, chairman of the U.S. delegation, the main focus of controversy and negotiation was the process of scientific exchange per se. The western delegations presented a strong front, he notes, giving the Soviets a "verbal beating" over their obstruction of



Handler: verbal beating to Soviets

scientific exchange and violations of the human rights of scientists, including interference with their scientists' participating in international meetings and travel abroad, censorship of foreign scientific journals, limits on scientific communication, denial of emigration and employment to some scientists, and imprisonment of certain scientists.

A particular concern for western scientists was the arrest and internal exile of Soviet physicist Andrei Sakharov. Forty-nine western delegates sent a cable to Soviet leaders urging that Sakharov be released.

Western scientists stand firm in demanding that any statement issued by the forum must mention scientific freedom and human rights as a basic ingredient of international scientific relations. Otherwise, they prefer no agreement.

However, the Soviet delegation apparently had instructions to bring home an agreement. Soviet bloc representatives fought over every word and punctuation mark, but in the end yielded.

The agreement is the first formally to link international scientific cooperation with observance of basic principles of scientific freedom and human rights, becoming a standard of reference for future behavior. It calls on the adhering nations to provide "equitable opportunities for scientific research and for wider communication and travel necessary for professional purposes," and to observe the principles of the Helsinki accords, "particularly with respect to conditions essential for international scientific cooperation." Moreover, making a specific link to human rights, it states, "Respect for human rights and fundamental freedoms by all states represents one of the foundations for a significant improvement of their mutual relations, and of international scientific cooperation at all levels."

Implementation and enforcement are a much more difficult question. But Handler hopes that the Soviet delegation will transmit the criticisms and deep concern of western scientists to Soviet leaders. □

Helsinki Final Act

The Final Act of the Helsinki Conference on Security and Cooperation in Europe (CSCE) in 1975 called for a meeting of scientists to discuss "current and future developments in science and to promote the expansion of contacts, communications and exchange of information between scientific institutions and scientists." Planned by the participating National Commissions on Security and Cooperation in Europe, this first scientific forum will take place in Hamburg from 18 to 29 February 1980. A major part of the agenda includes three substantive areas of consideration by "appropriate subsidiary working bodies." They are the exact and natural sciences, medicine, and the humanities and social sciences.

It is the conviction of the Committee of Concerned Scientists that the scientific forum can make its most significant contribution by stressing the structure of international scientific relationships rather than the substantive scientific problems. By concentrating on current and future developments in science as such—the first part of the Final Act's mandate—the forum would cover the same ground as the hundreds of international scientific meetings that already take place annually. Moreover, it would only cover this ground inadequately, since the breadth of topics to be considered would make adequate coverage extremely difficult.

In our view, the U.S. delegation should focus primarily on the second portion of the Helsinki Final Act's mandate for the forum—that is, on evaluating current modes of scientific interaction among individuals and institutions of the signatory countries. This is, indeed, the position taken by the United States at the CSCE experts meeting in Bonn in July. In this area a large number of questions beg for discussion, including the following:

- Are international scientific organizations, as presently constituted, adequately furthering exchanges?
- If they are not, what correctives need to be instituted?
- If, as discussions at the planning meeting last summer revealed, certain countries feel isolated from international science, why is this so and what can be done to remedy the situation?

In particular, delegates from the United States and other countries should discuss, in a constructive but forthright manner, the obstacles that exist to the kind of free scientific interchange envisioned in the Helsinki Final Act. They should attempt to determine why Soviet and Eastern bloc governments and academic officials exclude from scientific activities those who have sought permission to emigrate, in accordance with the Helsinki Final Act, or have spoken out for full implementation of the Act itself. They should also ask why Soviet and Eastern bloc scientists invited to international conferences are frequently not permitted to attend.

This discussion should by no means be limited to the Soviet Union and its allies. A number of American computer scientists have complained that our government is interfering, on grounds of national security, with their right to communicate freely the results of their research.

The forum should begin to formulate proposals designed to break down harmful intrusions on free interchange. For example, national security considerations have been invoked by both East and West to limit cooperation at various times and on various projects. At the forum, scientists could begin to formulate guidelines limiting the impingement of security interests on international scientific cooperation.

The signatories of the Helsinki Final Act recognized that scientific advancement brings "the effective solution of problems of common interest and the improvement of the conditions of human life." Scientific progress, however, is dependent on free international exchange of scientists and scientific information. With the proper focus, the scientific forum can do much to enhance the quality of international scientific exchanges.—MAX GOTTESMAN and MARK KAC, Cochairmen, and MARK MELLMAN, former director, Committee of Concerned Scientists, 9 East 40 Street, New York 10016

letters

Boycott Helsinki meeting

Next 18–29 February an international meeting will take place in Hamburg—the “Scientific Forum” agreed upon in the Final Act of the Helsinki Accord of 1975. A preparatory meeting of experts was held in June 1978, where the aims of the Hamburg Forum were stated in the following words:

“The Scientific Forum will be held in conformity with the relevant provisions of the Final Act, in the form of a meeting of leading personalities in science from the participating states to broaden and improve co-operation and exchanges in the field of science and thus to continue the multilateral process initiated by the Conference on the Security and Cooperation in Europe.”

What is this multilateral process?

The idea of the Helsinki Accord, as seen from the West, was to promote security and co-operation in Europe by formally recognizing the post-war borders in exchange for a formal Soviet pledge to observe basic human rights and to remove obstacles impeding the free flow of information and ideas. It is because of this supposed give and take that the Helsinki Accord was regarded universally not as just one more retreat by the West but, hopefully, as a way to make the Soviets behave in a more civilized, if not humane, manner.

However, the Soviet side, having signed the Accord and celebrated it as a great victory, safely ignored its part of the bargain. Moreover, the Soviet authorities sharply stepped up repression in connection with the Helsinki Accord itself. More than 20 members of the “Helsinki Watch” groups in the USSR were arrested and sentenced to long terms of imprisonment. The leader of the Moscow Helsinki group, Yuri Orlov, 55, was sentenced to 12 years of deprivation of freedom, beginning with 7 years in strict-regimen prison camp. (On the Orlov trial see *PHYSICS TODAY* editorial, September 1978, page 104.)

It is true that nobody in the USSR takes the regime’s word at its face value. Orlov and his friends understood that they could be arrested. And still many believed that the arrests of Helsinki monitors would be impractical for the Kremlin, because of the implications for the important Helsinki Accord. To put

Helsinki monitors into prison would be such an obvious and defiant violation of the Helsinki Accord that it would endanger its very existence.

But the KGB strategists reasoned better. They reckoned that they would get away with it, and they did. Some Western officials protested, but the Soviets experienced no real trouble. The West never came close even to mentioning the possibility of rescinding the Helsinki Accord. The result: Instead of becoming the first working example of a direct formal link between human rights and political relations, the Helsinki Accord became just one more in the long row of examples that teach the difference between what politicians say and what they mean. It became an invitation to consider human rights a sort of dressing on international agreements, which is useful to produce a good impression at home and abroad, but should not be taken seriously. The Helsinki Accord downgraded the concept of human rights, instead of upgrading it.

Such is the background of the Scientific Forum. While a minority of scientists are concerned about human rights in the world and try to induce the Soviet regime to release the imprisoned scientists, the representatives of the institutionalized majority (the American delegation, for example, is led by Philip Handler, President of the National Academy of Sciences) will go to Hamburg to continue the “multilateral process” that led physicist Yuri Orlov, computer scientist Anatoly Shcharansky, and other Helsinki monitors into Soviet prisons. With all the best intentions the Western scientists gathering in Hamburg may have, their main achievement will be the endorsement of the *status quo*. Because the Scientific Forum is a political event *par excellence*. It is not to coordinate scientific research between America, Belgium, France, and so on that the Forum will convene, nor even to coordinate research between the Western and Soviet-bloc countries. All those things could be done, if necessary, in technical meetings, without bearing any relation to the Helsinki Accord. Its goal is to approve “the multilateral process” as it is, and to tie to it some specific agreements and technical arrangements in the field of science. The

letters

reputation of the prominent scientists who take part in the Forum will be given to this cause.

Human rights are not mentioned in the agenda of the Scientific Forum. But the agenda does provide a possibility to discuss obstacles to East-West cooperation. Suppose for a moment that some of the participants use it to raise the issue of human rights and, specifically, the imprisonment of Orlov and others. Unfortunately, there is no reason to be optimistic about the results. One can predict what will happen from the experience of other international scientific conferences. Those scientists who are prepared to take a strong action in protest over the imprisonment of a scientist, or official refusal to permit the journey of an invited scientist, and, so on, invariably find themselves in the minority, so that only a very mild resolution can be passed, if any. Of course, even a mild resolution is welcome and makes the overall human rights balance positive when it is an addition to a quintessentially non-political event: a scientific conference. But the Scientific Forum is essentially a political event. The more than probable failure of potential human-rights activists to secure an adequate response to the repressions in the USSR will only stress the overall victory of the Soviets. "Although a miserable handful of spiteful enemies of détente," Soviet papers will say, "tried to hamper the work of the Scientific Forum, the scientific community showed that it wholeheartedly supports the growth of East-West cooperation and the principle of non-intervention into the internal affairs proclaimed by the Final Act of the Helsinki Accord."

Yuri Orlov's health is rapidly deteriorating in the awful conditions of a Soviet prison camp (see *PHYSICS TODAY*, December, page 88). No better is the condition of Shcharansky, biologist S. Kovalev (arrested in 1974) and others. I urge that there should be no Scientific Forum so long as Orlov and the other Helsinki monitors are imprisoned. By taking part in the Forum, scientists would signal their acceptance, if not approval, of the way the Soviets comply with the Helsinki Final Act.

VALENTIN F. TURCHIN
Forest Hills, N.Y.

* * *

Valentin F. Turchin is a former Soviet dissident, chairman of the Amnesty International group in Moscow. He emigrated to the USA in 1978 and is now a professor of computer science at the City College, the City University of New York.

expresses. Indeed, the Academy has not been remiss in communicating those very concerns to appropriate officials of the Soviet Union. But he and I are led to opposite conclusions concerning the Scientific Forum.

To be sure, there is the risk that, regardless of what actually transpires at Hamburg, internal Soviet news media may hail the very fact of the Forum as vindication, indeed as approbation of Soviet policy. But those Soviet scientists present will surely know otherwise. The American delegation, if no other, will go to Hamburg determined to bring forcibly to the attention of the delegates from all of Eastern Europe those concerns that, understandably and rightly, trouble Turchin.

The boycott he advocates is equivalent to the boycott of *all* exchanges that has been advocated by others. I welcome the fact that some Americans are so moved and publicly so indicate. They arm those of us in position to communicate their concerns, face to face, to those scientists who represent the Soviet bloc in these arrangements. Only so can the force and legitimacy of our moral position be made clear—and reported back to those governments. The struggle for human rights, like the struggle for a stable peace, requires that we continue to discuss these difficult matters. If we stop talking, we will have given up.

Finally, it should be recognized that Turchin would introduce to the varied and complex Soviet-American agenda the single-issue tactic that has proved so destructive of our national political life. In the end, both at home and abroad, that tactic must be self-defeating.

PHILIP HANDLER
President
National Academy of Sciences

COMMENT BY LEADER OF US DELEGATION: No one could sympathize more deeply than I do with the motives and concerns that Valentin Turchin so clearly

APPENDIX H

Congress of the United States

House of Representatives

Washington, D.C. 20515

February 13, 1980

Dr. Philip Handler
President
National Academy of Sciences
2101 Constitution Ave., NW
Washington, DC 20418

Dear Dr. Handler:

We write to convey this message of Congressional concern with regards to the Helsinki Scientific Forum which you will be attending this month in Hamburg, Germany. While we understand that you and the members of the US delegation will be attending as individual scientists and will be expressing your personal views, we would like to communicate our strong desire that the humanitarian provisions of the Helsinki Final Act be addressed at that time.

We understand from your testimony before the joint hearing on the future of East-West scientific relations and the Helsinki Scientific Forum, that you intend to raise human rights issues in Hamburg. We would like to take this opportunity to assure you of our full support for your positions.

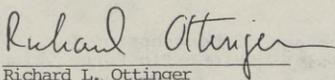
We strongly believe that the rights of scientists to intellectual freedom, to travel freely between nations, and to freely communicate with colleagues, is integral to the very purpose of this conference. Only if human rights are included as a central topic for discussion will this Forum fulfill its mission as mandated by the Helsinki Accords.

Furthermore, the Soviets' arrest and exile of Andrei Sakharov, the clear indications of escalating repression of other intellectuals and dissidents, and the invasion of Afghanistan have made it more urgent than ever that we insist upon seizing every opportunity to reaffirm our unfaltering commitment to human rights and the provisions of the Helsinki Final Act

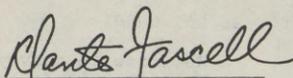
Quite simply we believe that scientists, along with all people, must be allowed to enjoy their freedom of thought, expression and belief without jeopardizing their professional goals.

We realize that this Forum will greatly influence the future of US/USSR scientific cooperation. We therefore urge you to ensure that human rights issues are discussed. We hope that you will also inform the Soviets of our continuing vigilance of their adherence to the provisions of the Helsinki Final Act. Finally, let them be assured that we will continue to speak out for those whose rights have been denied. For the cost of silence is the abandonment of human rights, and that is a price we will not pay.

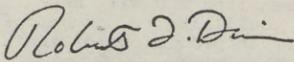
Sincerely,



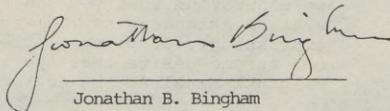
Richard L. Ottinger
Member of Congress



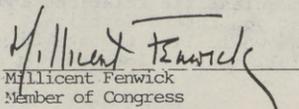
Dante B. Fascell
Member of Congress



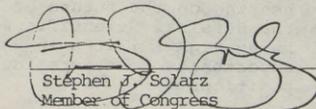
Robert F. Drinan
Member of Congress



Jonathan B. Bingham
Member of Congress



Millicent Fenwick
Member of Congress



Stephen J. Solarz
Member of Congress

Dr. Philip Handler
February 13, 1980
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Allen E. Ertel

Allen E. Ertel, MC

Pete Stark

Pete Stark, MC

Herbert E. Harris II

Herbert E. Harris, II, MC

Don Young

Don Young, MC

Edward J. Stack

Edward J. Stack, MC

Claude Pepper

Claude Pepper, MC

Tim Lee Carter

Tim Lee Carter, MC

Don Edwards

Don Edwards, MC

Larry Winn Jr.

Larry Winn, Jr., MC

Benjamin A. Gilman

Benjamin A. Gilman, MC

Lester L. Wolff

Lester L. Wolff, MC

Kent Bance

Kent Bance, MC

Andrew Maguire

Andrew Maguire, MC

Robert J. Lagomarsino

Robert J. Lagomarsino, MC

William S. Green

William S. Green, MC

Vic Fazio

Vic Fazio, MC

Hamilton Fish Jr.

Hamilton Fish, Jr., MC

Don Fuqua

Don Fuqua, MC

James H. Scheuer

James H. Scheuer, MC

John Buchanan

John Buchanan, MC

John Edward Porter

John Edward Porter, MC

Michael D. Barnes

Michael D. Barnes, MC

Dr. Philip Handler
February 13, 1980
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Chris Dodd

Christopher J. Dodd, MC

Bruce Vento

Bruce Vento, MC

Barbara A. Mikulski

Barbara A. Mikulski, MC

Jim Oberstar

James L. Oberstar, MC

J. Blanchard

Jim Blanchard, MC

Melvin Evans

Melvin Evans, MC

NATIONAL ACADEMY OF SCIENCES

OFFICE OF THE PRESIDENT
2101 CONSTITUTION AVENUE
WASHINGTON, D. C. 20418

February 15, 1980

The Honorable
Richard L. Ottinger
House of Representatives
Washington, D. C. 20515

Dear Mr. Ottinger:

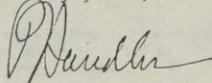
This will acknowledge receipt of the letter, dated 13 February, signed by you and 33 other Congressmen, concerning the conduct of the American delegation to the CSCE-sponsored Scientific Forum in Hamburg. Our delegation will surely be deeply impressed and grateful for the fact that so many of you feel strongly concerning issues of human rights.

As the simplest indicator of our intentions concerning the Hamburg meeting, I have attached a copy of the penultimate draft of my talk at the opening plenary sessions of the Forum. (Each of 35 nations is entitled to 15 minutes.) Of necessity, it treats in some degree of the purported scientific substance of the Forum agenda, but I hope that you will agree that its principal message is the profundity of American concern for human rights.

This text is still subject to modification when our delegation caucuses in Hamburg, so I trust that you will consider it a private communication. In all likelihood delivery of my statement will probably occur on Tuesday, 19 February.

On behalf of my colleagues, please accept our thanks for your powerful message of support for the very effort which is the reason that most of us are going to Hamburg.

Sincerely yours,



Philip Handler
President

Attachment

APPENDIX I

News from Senator

BOB DOLE

(R - Kansas)

2213 Dirksen Building, Washington, D.C. 20510

FOR IMMEDIATE RELEASE
THURSDAY, JANUARY 31, 1980CONTACT: BILL KATS, BOB WAITE
(202) 2248947, -8953DOLE REITERATES STAND AGAINST U.S.-SOVIET SCIENTIFIC EXCHANGES

WASHINGTON -- Following are Senator Bob Dole's remarks at today's meeting of the Helsinki Commission. Appearing before the commission was President Duane Acker of Kansas State University.

I am pleased to welcome the members of the three panels of witnesses appearing here today. As a Kansan, I am particularly glad to see a fellow Kansan, a man with a long history of involvement in the field of foreign affairs, in addition to an impressive list of accomplishments in the field of agricultural sciences, Mr. Acker, president of Kansas State University of Agriculture and Applied Sciences.

Your presence testifies to the importance of this hearing, as the first major congressional review of scientific exchanges between East and West since the recent events in Afghanistan, and prior to the scientific forum in Hamburg next month. Mandated by Helsinki to "promote the expansion of contacts and exchanges of information between scientific institutions and among scientists," the scientific forum has been turned into a mockery by the Soviets' latest acts.

The recent exile of Professor Sakharov to the closed city of Gorky sheds an ironic light on the goals that Helsinki sought to achieve. It appears that the Soviets are no longer content with the loss of their most prestigious writers, musicians and artists, who have come to enrich the cultural horizons of the West after being exiled from their homeland. Blindly refusing to learn the lesson of czarist repression, the Soviets have been engaged in a long and merciless persecution of their intellectual community. In the cruel silencing of one of the greatest scientific minds of our epoch, the Soviets have reached the outer limits of their revolting effort. The "sentence" -- for this is what it is -- that they have meted out to Professor Sakharov is a direct blow to the cause of human rights in the Soviet Union, given the fact that here is a man who won the Nobel Prize in 1975 for his defense of human rights.

The degree of revulsion elicited in the free world by this latest act by the Soviets is directly proportional to the stature of Dr. Sakharov. Yet, it might be useful to remind ourselves that Professor Sakharov stands at the end of a long line of victims of similar repressive acts against many other prestigious scientists.

Following the "trials" of Orlov and Sharansky in 1978, I advocated on the Senate floor that restrictions ought to be placed on scientific exchanges. I felt then, as I do now, that here was a measure of leverage we could use in insisting that human rights and other provisions of the Helsinki Accord signed by the Soviets be respected by them. Professor Sakharov expressed similar feelings in a collection of essays, "Alarm and Hope," in which he urged political, scientific and cultural leaders of the West to use all possible leverage, quiet and public, in an attempt to correct human rights violations in Eastern Europe. My proposal met with little support, and I am using the adjective "little" in a euphemistic manner. Needless to say how gratified I am, two years later, to note the words of Dr. Handler, present here today, as quoted in the Washington Post on Jan. 29 in an article signed by Daniel S. Greenberg. To parallel Dr. Handler's words, I too find it difficult, and always have, to imagine scientific exchanges continuing under the present, or past, circumstances. The "forces of moderation and reason" to which Dr. Handler referred in the article seem a paradox given the invasion of Afghanistan, against which Dr. Sakharov protested and for which he was punished.

The goals of Helsinki seem to recede, yet it is my hope that the hearing today will provide a flicker of light in the tunnel we are crossing, and that a new approach can be found and new ground broken in Hamburg next month, in a race that boils down to a pitting of civilization against catastrophe.

APPENDIX J

NATIONAL CONFERENCE ON SOVIET JEWRY

TESTIMONY SUBMITTED TO THE

COMMITTEE ON SCIENCE AND TECHNOLOGY

U.S. HOUSE OF REPRESENTATIVES

SUBCOMMITTEE ON SCIENCE, RESEARCH AND TECHNOLOGY

COMMITTEE ON FOREIGN AFFAIRS

U.S. HOUSE OF REPRESENTATIVES

SUBCOMMITTEE ON INTERNATIONAL SECURITY AND SCIENTIFIC AFFAIRS

AND

THE COMMISSION ON SECURITY AND COOPERATION IN EUROPE

BY

BURTON S. LEVINSON, CHAIRMAN

NATIONAL CONFERENCE ON SOVIET JEWRY

WASHINGTON, D.C.

THURSDAY, JANUARY 31, 1980

Mr. Chairman:

We welcome this opportunity to present some views concerning matters pending before these Committees.

Thirty-nine national membership organizations, and nearly three hundred local affiliated councils, federations and committees comprise our constituency. Through them, and especially via the National Jewish Community Relations Advisory Council and the Council of Jewish Federations, we are able to reach every corner of organized Jewish life in the United States.

The National Conference on Soviet Jewry, as the major, single-purpose agency in this country, representing the bulk of this nation's private sector involvement for the Jewish minority in the USSR, has always supported efforts to achieve detente. In our view the hopes of all people, including that of the Jewish minority in the Soviet Union, to achieve security and self expression will have a better opportunity in an atmosphere of increased multi-lateral contacts and diminished tensions. Mr. Chairman, in our view, however, multi-party relationships require reciprocal obligations.

In reviewing the agenda for the Science Forum meeting in Hamburg, Germany, next month, and the issues which may properly be raised by members of the US delegation to that meeting, we are given a critical opportunity to explore our commitment to human rights.

The Final Act of the Helsinki Conference on Security and Cooperation in Europe in 1975 provided for future meetings of scientists from the signatory nations. The Science Forum, flowing out of this agreement, can be structured so as to explore the

implementation records of the Commission of Security and Cooperation in Europe nations with regard to Baskets II and III of the Final Act.

As part of the continuing Helsinki process, the Science Forum provides a unique arena in which to examine how the potentialities of scientific progress can best be integrated into collective foreign policy objectives. Should this integration be accomplished, the advantages of scientific progress and development can then be made available to all peoples. In addition, this meeting could foster new levels of practical understanding between scientists and a new atmosphere of multi-lateral cooperation in all science fields.

For such objectives to be met, however, a candid review of existing compliance with international agreements on questions of freedom of contacts between scientists, freedom of contacts between institutes and, of course, general observance of human rights principles where they apply to scientists as citizens, is needed.

The National Conference on Soviet Jewry remains deeply concerned about the fate of Soviet Jewish refusenik scientists, many of whom have repeatedly been denied their rights to pursue their careers and to mingle freely in the international science community. Many of these scientists have been discriminated against purely by virtue of their expressed desire to exercise their legitimate emigration rights and to relocate in Israel. (Appended to this testimony is a collection of case histories of persecuted and long-languishing Soviet Jewish scientists.)

Additionally, the National Conference on Soviet Jewry remains profoundly disturbed at the arbitrary quota systems which have been

used against young Soviet Jewish scholars, preventing them from entering graduate institutes and acquiring advanced degrees.

The National Conference on Soviet Jewry is not only troubled by the repressive tactics of the Soviet authorities but also by:

- * Denial of access by the Soviet science establishment to visiting American and other Western scientists seeking entry into certain areas of Soviet society and research institutes.

- * The use of visits to the US and other Western countries by the Soviets as a reward for orthodoxy amid their scholar circles.

- * Censorship by Soviet officials of American and Western science journals with deliberate removal of articles touching upon human rights questions.

- * Manipulation by Soviet authorities of the list of invited Soviet scholars and scientists to international meetings to serve political needs along with flagrant abuse of accepted standards of reciprocity both with regard to science disciplines and scientists' stature.

- * Refusal by the Soviet authorities not only to permit those Soviet scientists wishing to emigrate to exercise their legitimate emigration rights but also to pursue their scientific careers at any level.

If any real benefit is to accrue to the participating scientists and the governments they represent at the Science Forum, it is clear that these topics must be raised.

Thirty-five years after the end of World War II it would appear that it is still not possible for scientists from West and East to engage in scholarly discourse on the basis of common conceptual and theoretical assumptions--primarily the unchallenged freedom to express a variety of views on a wide range of subjects.

Without a free flow of ideas, international academic relationships will continue to be marked with the shadow of political repression. Soviet Jewish scientists and others will be prevented from sharing their contributions with colleagues and those participating in scholarly exchanges will be haunted by moral questions, sapping their intellectual strength of purpose and diminishing the momentum of the exchanges themselves.

It is therefore, our fervent hope that the US delegation to the Science Forum will forcefully pursue every opportunity to comment on human rights violations in the scientist category. We expect that this delegation will press for compliance with the provisions of the Helsinki Final Act in the interest of all scientists, indeed, all nations and all peoples.

We are especially sensitive to this need at this time because of the oppressive action just taken by Soviet authorities against Academician Andrei Sakharov. The seizure and internal exile-suquestrian of this distinguished scientist and humanist is an act which flies in the face of all fundamental human rights principles and diminishes all those who value freedom and unimpeded intellectual achievement.

NATIONAL CONFERENCE ON SOVIET JEWRY
10 EAST 40TH STREET, N.Y., N.Y. 10016

SOVIET JEWRY RESEARCH BUREAU
(212) 679-6122

INDIVIDUAL PROFILE

NAME: Pavel Abramovich

ADDRESS: Baykalskaya 30/2/87
Moscow 107207
RSFSR
USSR

FAMILY BACKGROUND:

<u>RELATIONSHIP</u>	<u>FIRST NAME</u>	<u>DATE OF BIRTH</u>	<u>OCCUPATION/PROFESSION</u>
	Pavel	March 24, 1939	Electronics Engineer
Wife	Marta Balashinskaja		Engineer
Child	Felix	1964	

VISA APPLICATIONS HISTORY:

DATE OF FIRST APPLICATION: February 17, 1969

DATE/REASON FOR REFUSAL: April 1971 - "access to secret information"

OTHER REFUSALS: Repeatedly; Most recent refusal: Feb. 1978

PERMISSION:

CASE HISTORY/ADDITIONAL COMMENTS:

Pavel Abramovich was employed as an electronics engineer prior to Feb. 1971, when he applied for an exit visa to emigrate to Israel. His request was denied by the Soviet government alleging that Pavel had access to secret information. Soon after this application, Pavel was fired from his job. He has been and continues to be a Hebrew tutor, but the Soviet government does not recognize this as employment. Subsequently, in 1978, the Soviets have attempted to charge Pavel with parasitism.

Since 1971, Pavel has been harassed and dealt with unfairly by the Soviet government. Now, not only has a pretext of a criminal charge been lodged against him, but Pavel's lawyer has been denied access to his file, yet another discriminatory action against Pavel Abramovich.

On April 18, 1978, the Northern California Lawyers Committee for Soviet Jews sent a petition for dismissal of the Charges of Parasitism against Pavel Abramovich to the Deputy Procurator in Moscow.

Pavel does have another job, apart from his Hebrew tutoring, but he is fearful of revealing his place of employment because the government may have him fired again.

The case against Pavel was scheduled for court on March 20, 1978, but was postponed because the appointed Judge suffered a heart attack.

Throughout his long wait for permission to emigrate, Pavel has demonstrated considerable courage and strength on behalf of other Soviet Jews. Pavel has publicly claimed Israeli citizenship, renouncing his Soviet citizenship and has been arrested on several occasions for protesting his continued denials.

2/79

NATIONAL CONFERENCE ON SOVIET JEWRY
10 EAST 40TH STREET, N.Y., N.Y. 10016

SOVIET JEWRY RESEARCH BUREAU
(212) 679-6122

INDIVIDUAL PROFILE

NAME: Peter Balshem

ADDRESS: C13/9/35
Tashkent 700128
Uzbek SSR
USSR

FAMILY BACKGROUND:

<u>RELATIONSHIP</u>	<u>FIRST NAME</u>	<u>DATE OF BIRTH</u>	<u>OCCUPATION/PROFESSION</u>
	Peter	March 15, 1946	Physicist
Wife	Clara	1950	Nurse
Child	Evgeny	1974	

RELATIVES

Parents: Mr. and Mrs. Abram Balshem
c/o Alla Farber
3133 Brighton 7th St. Apt. 2A
Brooklyn, N.Y. 11235

VISA APPLICATIONS HISTORY:

DATE OF FIRST APPLICATION: May 1974

DATE/REASON FOR REFUSAL:

1974 - No reason given.

OTHER REFUSALS:

Repeatedly; most recent refusal: January 1978.

PERMISSION:

CASE HISTORY/ADDITIONAL COMMENTS:

Peter Balshem, a physicist working with American-made computers, lost his job in 1974 when he applied for an exit visa for himself, his wife, Clara, and their son, Evgeny. Peter's parents, Abram and Maria Balshem, also applied for visas at this time. Permission was refused to all, with no reason given.

In 1976, Peter's parents were granted permission to depart. Peter, his wife, and child were still denied emigration. Reluctantly, in August 1977, Abram and Maria Balshem left the USSR.

Since that time, Peter Balshem has repeatedly applied for visas and is repeatedly denied; his last denial was in January 1978.

In September 1978, a delegation of U.S. District Attorneys was hosted by Soviet Procurator Roman Rudenko. In their meeting with the Tashkent Procurator, the case of Balshem was raised and a promise was given that his application would be immediately processed in a positive manner. Balshem has not received permission to date.

NATIONAL CONFERENCE ON SOVIET JEWRY
10 East 40th Street Suite 907
New York, N.Y. 10016

IOSIF BEGUN

PRISONER OF CONSCIENCE

BORN: July 9, 1932
FROM: Moscow
MARITAL STATUS: Married/two children
OCCUPATION: Engineer, specializing in applying
mathematical methods to engineering
ARRESTED: May 17, 1978
TRIED: June 28, 1978
CHARGES: Violating Internal Passport Laws
SENTENCE: 3 years internal exile (to May 1981)
CAMP: In exile
ADDRESS: Post Index 686326
Posiolok Burkandaya
Susmanski Rayon
Magadanskaya Oblast
RSFSR, USSR
WIFE'S ADDRESS: Alla Drugova Begun
Nagatinskaya 17/1/141
Moscow RSFSR
USSR

OVER

After a two year sentence to internal exile, Iosif Begun returned to Moscow in 1978, his wife's place of residence, to resume his application to emigrate, as well as continue his activities as a Soviet Jewish activist. Soon after leaving the trial of Soviet dissident Yuri Orlov, Begun was re-arrested, charged, eventually tried and convicted of living in Moscow without a residency permit.

The cycle of arrest, detention and imprisonment, as well as Begun's protest of hunger strike began for a second time.

An engineer, in 1967 Begun received a doctorate degree in sciences and became quite well-known for his work. Begun achieved excellence not only in his own specialized field, but in many other undertakings. In order to develop and preserve the Jewish traditions and culture he had inherited from his father and grandfather, he taught himself Hebrew. In time he became a Hebrew teacher himself and fought for the legalization of Hebrew teaching. In April 1971 he requested an exit permit for Israel, but was refused because the Soviet authorities said he was privy to state secrets. He was subsequently forced to find a job unrelated to and incompatible with his educational background. He took on a job as a telephone operator, but was fired on the pretext of staff reduction. He took on a job as a night watchman and was barely able to support his son Boris and himself. He was dismissed again. He obtained a meager income by tutoring young students in Hebrew and mathematics.

During the many years since he first applied for an exit permit, he fought with all his might for his right to emigrate, initiated and composed dozens of declarations and protests. Despite KGB harassment, he tenaciously persisted in his activities. In January 1977 an anti-Zionist and anti-Semitic film "Traders of Souls" was shown in the Soviet Union. In the film, among other Jewish activists, Begun was portrayed as a "soldier of Zionism", receiving money from abroad, to be used to undermine the Soviet system. On February 2, 1977, Begun filed a personal suit of libel against the company producing the film.

On March 3, 1977, Begun was arrested and charged with "parasitism", in an attempt to smear Begun's reputation and discourage other allya activists, many of whom are caught in a similar trap.

On March 28, 1977 Begun embarked on a hunger strike that lasted more than 100 days. He was forced-fed every 3 days, fatigued and ill he was brought to court to stand trial, June 1977. In court he was wearing a Kippah (skullcap) and requested a prayer book and Bible before he was sentenced to 2 years' exile. At the entrance to the court his son Boris was waiting for him. He showed him that he too was wearing a Kippah.

Alla and Iosif were married, while Begun was in exile in October 1977. His second term of imprisonment will last until 1981.

NATIONAL CONFERENCE ON SOVIET JEWRY
10 EAST 40TH STREET, N.Y., N.Y. 10016

SOVIET JEWRY RESEARCH BUREAU

(212) 679-6122

INDIVIDUAL PROFILE

NAME:	Brailovsky	ADDRESS:	Vernadsky Prospekt 99/1/128 Moscow 117526 RSFSR USSR
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FAMILY BACKGROUND:

<u>RELATIONSHIP</u>	<u>FIRST NAME</u>	<u>DATE OF BIRTH</u>	<u>OCCUPATION/PROFESSION</u>
Father	Victor	1935	Doctor of Computer Science
Mother	Irina	1936	Doctor of Computer Science
Son	Leonid	1961	Student
Daughter	Dalia	1974	

RELATIVES IN ISRAEL: Uncle: Mikhail Brailovsky
Haifa
Azar 4-1

VISA APPLICATIONS HISTORY: **DATE OF FIRST APPLICATION:** March 10, 1972

DATE/REASON FOR REFUSAL: January 1973 - Secrecy

OTHER REFUSALS: Refused repeatedly since first application.

PERMISSION:

CASE HISTORY/ADDITIONAL COMMENTS:

In October 1972, Victor and Irina Brailovsky, both Doctors of Computer Science, first applied for permission to leave the USSR. In January 1973, their request was denied because the government felt that Irina had had access to "secret information" as a computer scientist at Moscow University. Since this refusal, Victor and Irina have been involved with the Jewish emigration movement and Victor is an organizer of the Moscow Seminar of Jewish Scientists.

In 1973, the Brailovskys, along with eight other scientists, held a 17-day hunger strike to protest the absence of free emigration of Jews. Victor also joined Professor Mark Azbel's seminar for unemployed Jewish scientists awaiting permission to emigrate to Israel.

In 1974, Victor and other activists were imprisoned for 15 days for attempting to hold an international session of the seminar.

In 1976, Victor Brailovsky was granted permission to emigrate, but he refused to leave without his wife and children.

In October of 1976, Victor was arrested at a Moscow sit-in demonstration and later released.

In December of that same year, the Brailovsky home was searched in connection with the start of the Moscow Cultural Symposium. KGB officials confiscated books on Jewish history and culture, along with Jewish and Israeli music tapes.

In May 1977, Victor was interrogated for 12 hours at Lefortovo Prison in connection with the case against Anatoly Shcharansky.

In October 1978, the Rector of Moscow University stated that the university had no

NATIONAL CONFERENCE ON SOVIET JEWRY
10 East 40th Street Suite 907
New York, New York 10016

SEMYON GLUZMAN

PRISONERS OF CONSCIENCE

BORN: 1948
FROM: Kiev
MARITAL STATUS: Single
OCCUPATION: Psychiatrist
ARRESTED: May 11, 1972
TRIED: October 12, 1972
CHARGES: "Anti-Soviet Agitation and Propaganda"
SENTENCE: 7 years-strict regime camp
3 years exile (to May, 1982)
CAMP: Perm #35
CAMP ADDRESS: P.O.B. 5110/1 VS 389/35,
Moscow
RSFSR, USSR

OVER

Dr. Gluzman is a 30 year-old psychiatrist who graduated from Kiev Medical School in 1968 and was offered a position as a psychiatrist at the Dnepropetrovsk Special Psychiatric Hospital, where Leonid Plyusch was being held at the time. Because he recognized and refused to be associated with the morally depraved Soviet practice of committing healthy political prisoners to psychiatric hospitals and medically treating them for insanity, Dr. Gluzman declined the position.

In 1971, Gluzman joined two fellow psychiatrists, who remain anonymous, in writing an alternative psychiatric diagnosis in absentia for Gen. Pytor Grigorenko in which they rejected the official finding that Grigorenko was mentally ill. For this action motivated by human decency, Gluzman was convicted of "anti-Soviet agitation and propaganda," and sentenced to 7 years in a strict regime corrective labor camp.

While incarcerated, Dr. Gluzman has been strongly influenced by his fellow Jewish prisoners, Anatoly Aitman, Hillel Butman, Leib Knokh, and Lev Yagman, from whom came his dream of becoming a resident and citizen of Israel. In October 1975 Gluzman wrote to his parents:

"I am a Jew, and my Judaism speaks for more than memory -- memory of the victims of genocide and of the persecutions caused by prejudice become dogma. My Judaism lies in the knowledge of our people as they are today, with their own State, their own history and, happily their own weapons. My Uncle Abram who was shot at Babi Yar did not grant me any "reconsiderations." Every September my spirit seethes with indignation for him. You know why."

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(212) 679-6122

INDIVIDUAL PROFILE

NAME: Drs. Isai and Grigory Goldshtein **ADDRESS:** Octiabrskaya 2nd Mikroraiou 2/124
Tbilisi 380080
Georgian SSR
USSR

FAMILY BACKGROUND:	NAME	DATE OF BIRTH	PROFESSION
	Grigory	1931	Physicist
Brother	Isai	1938	Physicist
Isai's Wife	Elizaveta	1949	Physicist
Isai's Son	Avi	Dec. 29, 1973	

RELATIVES IN ISRAEL: Elizaveta's brother: Lev Krichmar
Kiri'at Yam
Shderot Erushalaim 70/14
Israel

VISA APPLICATIONS HISTORY: **DATE OF FIRST APPLICATION:** December 1971

DATE/REASON FOR REFUSAL: January 1972 - access to secret information.

OTHER REFUSALS: Repeatedly; most recent - April 26, 1976.

PERMISSION:

CASE HISTORY/ADDITIONAL COMMENTS:

Isai and Grigory Goldshtein, along with their mother and Isai's wife and son, submitted their applications for permission to emigrate to Israel in 1971. In 1972, their applications were rejected and both Isai and Grigory were unable to find work in their professions as a result.

The Goldshteins have been subjected to constant harassment by the KGB and their telephone was disconnected.

In January 1978, Grigory was arrested and subsequently tried on parasitism charges. In March, he was sentenced to one year in a general regime labor camp.

On March 11, 1979, Grigory was released from labor camp and on March 12th, he appeared at the OVIR office and re-applied for an exit visa.

The Goldshtein family has been awaiting visas for 8 years and they refuse to give up hope.

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SOVIET JEWRY RESEARCH BUREAU

(212) 679-6122

INDIVIDUAL PROFILE

NAME: Dr. Aleksandr Lerner
(Born 1913; Cyberneticist)

ADDRESS: Dimitry Ulyanova 4/2/322
Moscow 117333
RSFSR, USSR

FAMILY BACKGROUND:

<u>RELATIONSHIP</u>	<u>FIRST NAME</u>	<u>DATE OF BIRTH</u>	<u>OCCUPATION/PROFESSION</u>
Wife	Judith	1916	
Son	Vladimir	1945	Systems Analyst
Daughter	Sonya	1950	Mathematician

RELATIVES IN ISRAEL:

Daughter: Sonya Lerner Levin
Rehov Hanasi Hareshon 33/15
Rehovot, Israel

VISA APPLICATIONS HISTORY:

DATE OF FIRST APPLICATION: November 1971

DATE/REASON FOR REFUSAL: "State's Secrets"

OTHER REFUSALS: Refused continually for 7 years

PERMISSION:

CASE HISTORY/ADDITIONAL COMMENTS:

One of the most respected of Soviet scientists, Dr. Aleksandr Lerner submitted his visa application to emigrate to Israel in 1971, but has been constantly refused on the grounds of "state secrets", an accusation he denies. In 1939, Lerner was awarded the academic degree of Candidate, in 1954 that of Doctor of Science and in 1955 the academic title of Professor. He was the author of 168 scientific works, including 12 books many of which have been translated abroad. After submitting his family's application he was dismissed from all his duties.

In an open letter published in the newspaper Izvestia (March 4, 1977), Lerner was accused of espionage and treason and that of "instructing persons who had a single platform and leader at American secret services and foreign anti-Soviet organizations." In addition, Lerner was accused of systematically receiving through "unofficial channels instructions, hostile literature and financial means in order to aggravate tension between the United States and the USSR."

In a reply available in the West, Lerner said: "1) I was never connected in any form with any secret service of any foreign state, including the United States, nor have I ever collected or instructed anyone to collect information constituting military or statistics secrets. 2) I never received remuneration for my activities either from the CIA or any other foreign organizations and I never needed or need such remunerations. 3) During the period of waiting for an emigration permit, since the end of 1971, I met with many foreigners, tourists, correspondents, scientists, diplomats and statesmen, but not one of them ever offered me to collaborate with a foreign secret service or an anti-Soviet organization." In conclusion, Lerner pointed out that "all the charges presented against me and my friends are nothing more than deliberately malicious slander."

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(212) 679-6122

INDIVIDUAL PROFILE

NAME: Vladimir (Zeev) Shachnovsky

ADDRESS: Proezd Cherepanovych 70/76
Moscow A-183 RSFSR
USSR

FAMILY BACKGROUND:

<u>RELATIONSHIP</u>	<u>FIRST NAME</u>	<u>DATE OF BIRTH</u>	<u>OCCUPATION/PROFESSION</u>
Wife	Vladimir Elena	Dec. 16, 1941 1945	Mathematician Radio Engineer

RELATIVES IN ISRAEL: Brother - Alexander Shachnovsky
Rehov Sireni 32/16
Rehovot, Israel

VISA APPLICATIONS HISTORY:

DATE OF FIRST APPLICATION: December 1972

DATE/REASON FOR REFUSAL: 1973 - Secrecy

OTHER REFUSALS: Repeatedly - Summer 1977

PERMISSION:

CASE HISTORY/ADDITIONAL COMMENTS:

Vladimir (Zeev) Shachnovsky, a mathematician, has been unemployed since 1971, when he first expressed desire to emigrate to Israel. In December 1972, Vladimir formally applied for a visa, wishing to join his brother, Alexander, who emigrated to Israel in 1972.

Vladimir has been active in the Jewish movement since 1968. From 1968-1970 he took part in preparing a series of Russian language Jewish publications. It was in 1972 that Vladimir began to teach Hebrew. He is regarded as one of the best qualified Hebrew teachers in the USSR. Vladimir was instrumental in introducing elements of Jewish religion and culture to his pupils, as well as preparing thirty new Hebrew teachers to carry on the work.

In 1972, the KGB ordered Vladimir to stop teaching Hebrew. In 1973, his telephone was disconnected in an attempt to further discourage his organizing and teaching.

From 1972-1975, Vladimir traveled to Leningrad and other cities in order to encourage the study of Hebrew. In April 1975, Vladimir gave six lessons in the city of Derbent and was arrested and sent by force back to Moscow.

In late 1976, Vladimir and several other Aliyah activists were arrested and sent to prison for one month.

Shachnovsky is an observant Jew practicing Jewish ritual despite the lack of necessary materials.

2/79

NATIONAL CONFERENCE ON SOVIET JEWRY
10 East 40th Street Suite 907
New York, N.Y. 10016

ANATOLY SHCHARANSKY

PRISONER OF CONSCIENCE

BORN: January 20, 1948
FROM: Moscow
MARITAL STATUS: Married
OCCUPATION: Computer Technologist
ARRESTED: March 1977
TRIED: July 1978
CHARGES: "Treason, Espionage and Anti-Soviet Agitation"
SENTENCE: 3 years imprisonment
10 years special regime camp (to March 1990)
CAMP: Chistopol
CAMP ADDRESS: UCHR 5110/1
Moscow RSFSR
USSR
WIFE'S ADDRESS: Avital Shcharansky
70/30 Ben Zakai Street
Jerusalem, Israel
MOTHER'S ADDRESS: Ida Milgrom
Ul. Kooperativnaya 8 Istra
Moskovskaya Oblast
RSFSR, USSR

OVER

Born in 1948, Shcharansky graduated from Moscow Institute's Physics Department of Computers and Applied Mathematics in June 1972, with a specialty in applied mathematics. A chess master, he has expertise in computer technology and cybernetics. Shcharansky was denied a visa by Soviet emigration authorities on grounds that "it is against state interests," despite the fact that he was never engaged in any sensitive work.

In July 1974, Avital and Anatoly Shcharansky were married in Moscow according to Jewish law. "It was very difficult to find a Rabbi who would marry us," Avital said. "The Soviet authorities claimed a civil marriage was impossible because Anatoly was three years older than me. The excuses were absurd."

Harassment, surveillance, questionings by the Soviet authorities have been commonplace for Shcharansky since he first applied to emigrate. He has been arrested on numerous occasions and in March, 1975, was informed by the KGB that "your destiny is in our hands. You saw what happened to your friends. You have to know that no one in the West is interested in you and all that you are doing here and nobody will say a word in the entire world if there is one more Prisoner of Conscience in the Soviet Union.

Prior to his arrest, Shcharansky was under daily surveillance, by up to eight security men. In February, 1977 he filed a suit, along with activist Vladimir Slepak, for defamation based on the airing of the spurious anti-Semitic T.V. documentary "Buyers of Souls." The program was aired twice to the mass of Soviet television viewers.

Accused in the Soviet newspaper Izvestia of working for the CIA, Shcharansky was picked up by Soviet secret police in March, 1977 and was held in Moscow's Lefortovo prison until his trial in July, 1978 when he was convicted and sentenced to a total of thirteen years in prison and labor camp.

Throughout his imprisonment, Shcharansky was held incommunicado. He was unable to see, speak with, or otherwise communicate with anyone except the KGB, Soviet secret police interrogators trying to fabricate the case against him. Despite dozens of attempts by the family to supply a lawyer for Shcharansky, none was permitted.

Shcharansky's fate clearly became a focal point for U.S.-Soviet relations. Numerous Senators, Representatives and President Jimmy Carter voiced their assurance of his innocence. A special Ad Hoc Commission on Justice for Anatoly Shcharansky, headed by President William McGill of Columbia University, convened in October, 1977 to hear testimony in defense of Shcharansky.

During 30 months of prison confinement, Anatoly's health has deteriorated. He is suffering from terrible headaches and cannot read or write for more than ten minutes. Since his trial in July, 1978 his mother has seen him only once.

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New York, N.Y. 10016

SIMON SHNIRMAN

PRISONER OF CONSCIENCE

BORN: November 8, 1957

FROM: Zaporozhe

MARITAL STATUS: Single

OCCUPATION: Chemical Technician

ARRESTED: May 31, 1978

TRIED: June 27, 1978

CHARGES: Article #72 of the Ukrainian Criminal Code
"Draft Evasion"

SENTENCE: 2½ years (to December 1980)

ADDRESS: Uchrezhdenie YU Z.17/7
Selo Starosburavka
Golopristansky Rayon
Khersonskaya Oblast
Ukrainian SSR, USSR

MOTHER'S ADDRESS: Faina Shnirman
Ul. Kirova 79 Kv. 31
334518 Kerch
Krinskaya Oblast
Ukrainian SSR, USSR

FATHER'S ADDRESS: David Shnirman
Derech Strusha 26/3
Nahariya, Israel

Simon Shnirman, since he first applied to emigrate to Israel in April, 1977, fought a desperate battle to be reunited with his father who was allowed to leave the USSR in December, 1976. Soon after graduating from his studies, Shnirman, who was born in 1957, applied to leave, refused under the pretext that "he did not work long enough to pay for the money invested by the State in his studies." Meanwhile, Soviet authorities began the process of drafting Shnirman.

Refusing the call to the Soviet Army, Shnirman was charged and convicted of draft evasion. After his sentence, Shnirman's sister received permission to rejoin their father, while the children's mother will remain in the USSR until her son is freed. By the time Shnirman completes his sentence, the family will have been separated four long years.

NATIONAL CONFERENCE ON SOVIET JEWRY
10 East 40th Street Suite 907
New York, N.Y. 10016

VLADIMIR SLEPAK

PRISONER OF CONSCIENCE

BORN: October 29, 1927

FROM: Moscow

MARITAL STATUS: Married

OCCUPATION: Radio Engineer

ARRESTED: June 1978

TRIED: June 1978

CHARGES: "Malicious Hooliganism"

SENTENCE: 5 years internal exile (to June 1983)

EXILE: Do-Vostrebovania
Selo Tsogoto shangil 674466
Aginski Rayon
Chitinskaya Oblast, USSR

SON'S ADDRESS: Aleksandr Slepak
C19 Koshland Way
University of California
at Santa Cruz
Santa Cruz, California 95064

WIFE'S ADDRESS: Maria Slepak
Gorky 15/77
Moscow 103009
RSFSR, USSR

Maria Slepak in an interview in June 1978 said that after she and her husband were arrested by Moscow police on June 1, they were questioned principally on the whereabouts of their younger son who is in hiding to escape being drafted into the Soviet Army. Released from prison due to an attack of pancreatitis, her husband was later convicted of malicious hooliganism and sentenced to five years internal exile. Maria's three year sentence was dismissed. The couple are now in exile together.

The Slepaks were arrested after they displayed a banner from their eighth floor apartment saying "Let us go to our son in Israel".

Vladimir Slepak first applied for an exit visa in April 1970 and was refused in June 1970 because of "State's interest". Until the beginning of 1969, Vladimir Slepak worked in the TV Institute in Moscow. Though he did work in sensitive areas, he stopped working in April 1969 as he had intended to apply to emigrate. More than the required five years have passed, since he has had any exposure to so-called "secret" work.

Upon application to emigrate, he was harassed by other workers and changed from job to job until 1972 when work conditions became so intolerable he was forced to resign. Almost immediately he was threatened with parasitism and his apartment raided. His phone was disconnected and he has served numerous prison sentences. Early in 1975 the entire family went on a hunger strike, protesting the numerous denials to their application. Though numerous telegrams and letters of support were sent, none were received.

Vladimir's wife, Maria is a radiologist who was forced to leave her job. Maria's health undermined by many years of nervous tension, had deteriorated in the last few years. She is suffering from serious vascular and endocrinal disorders. The eldest son, Aleksandr, finished high school and had hoped to study zoology at the university. He was told by university authorities that he could not register as "We do not prepare specialists for Israel." He served a 15 day prison sentence for "petty hooliganism". In 1977, Aleksandr was allowed to emigrate to Israel with his American wife, Elaine.

In June 1976, Slepak became a member of the Public Group to Assist the Fulfillment of the Helsinki Accords in the USSR. The group consists of prominent members of the human rights movement in the Soviet Union, including Nobel Laureate, Andrei Sakharov. Slepak's signature has appeared on a number of documents coming out of the Soviet Union.

Slepak's involvement as a Jewish activist goes back to 1970. He was interrogated and then called to testify at the Second Leningrad Trial (1971), and in March of that year arrested, whereupon he went on a hunger strike. He was detained in September 1972 for 14 days and put in solitary confinement for two days. He was again imprisoned that year for charges which were never made known to him and detained at the onset of the Yom Kippur War (1973).

NATIONAL CONFERENCE ON SOVIET JEWRY
10 EAST 40TH STREET, N.Y., N.Y. 10016

SOVIET JEWRY RESEARCH BUREAU
(212) 679-6122

INDIVIDUAL PROFILE

NAME: ABA and IDA TARATUTA **ADDRESS:** Prospect of the Cosmonauts 27/1/71
Leningrad 19211
RSFSR, USSR

FAMILY BACKGROUND:

<u>RELATIONSHIP</u>	<u>FIRST NAME</u>	<u>DATE OF BIRTH</u>	<u>OCCUPATION/PROFESSION</u>
Father	Aba	1930	Mathematician/Engineer
Mother	Ida		Translator
Child	Misha		

RELATIVES/FRIENDS IN ISRAEL:

VISA APPLICATIONS HISTORY: **DATE OF FIRST APPLICATION:** August, 1973

DATE/REASON FOR REFUSAL: Secrecy

OTHER REFUSALS: Refused repeatedly since first applying

PERMISSION:

CASE HISTORY/ADDITIONAL COMMENTS:

Dismissed from his position as a mathematical engineer upon application to emigrate, Aba works as an elevator maintenance man, a position which saves him from the threat of "parasitism charges".

His wife, an unemployed technical translator, tutors occasionally, producing additional income for the family.

Their teenage son, Misha attends school and shows a developed interest and talent in painting.

In the spring of 1977, the family was harassed for sponsoring the Leningrad mathematics seminar in their apartment.

APPENDIX K



American Psychiatric Association

1700 Eighteenth Street, N.W., Washington, D.C. 20009 • Telephone: (202) 797-4900

Council on
International Affairs

February 19, 1980

Alfred M. Freedman, M.D.
Chairperson
New York Medical College
5th Avenue & 106th Street
New York, N.Y. 10029

Robert O. Jones, M.D.

Joe Yamamoto, M.D.

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Jack Weinberg, M.D.

Charles Pinderhughes, M.D.

Observer-Consultant

Steven Pieczenik, M.D.

Consultant

Charles Krauthammer, M.D.

Consultant

Norman Rosenzweig, M.D.

Assembly Liaison

Robert L. Robinson, M.A.

Staff Liaison

Jane Edgerton, M.A.

Assistant Staff Liaison

Anthony Scoville
House Subcommittee on Science
Research and Technology
2321 Rayburn Building
Washington, D.C.

Dear Mr. Scoville:

In January, you called me concerning hearings being held on January 31, 1980 co-sponsored by the House Subcommittee on Science Research and Technology. The purpose of these hearings was to provide information for the U.S. delegation attending a scientific forum in Hamburg, Germany.

The American Psychiatric Association has long been concerned about the abuse and misuse of psychiatry and psychiatrists. Enclosed is a statement we hope is not too late to be included in the record.

With best regards,

Sincerely,

Jane Edgerton
Jane Edgerton
Staff Liaison

JE:1
Enclosure

January, 1980

HUMAN RIGHTS ACTIVITIES
OF THE
AMERICAN PSYCHIATRIC ASSOCIATION
1976-1979

In September 1976, the Executive Committee of the Board of Trustees restated the APA's positions of 1971 and 1972 regarding abuse of psychiatric procedures and approved the statement which follows:

"The American Psychiatric Association in previous action unequivocally condemned the abuse of psychiatric diagnosis and incarceration as instruments of propaganda, terror and punishment. As instances of this, in December 1971 the Association passed the following resolution:

The American Psychiatric Association firmly opposes the misuse of psychiatric facilities for the detention of persons solely on the basis of their political dissent, no matter where it occurs.

"Five months later, the American Psychiatric Association reinforced this statement by passing the following resolution in April 1972:

The President of the World Psychiatric Association was asked to circulate the 1971 position to all national societies which are members of WPA requesting endorsement of the principle expressed. APA urges that an appropriate international organization establish a properly staffed agency to formulate internationally acceptable standards and guidelines to safeguard involuntary hospitalization from political influences as far as possible, to receive complaints from individuals or appropriate national bodies alleging enforced use of psychiatric facilities for political purposes and to investigate such complaints.

"The American Psychiatric Association notes with approval that recent accords among nations have made possible increased communication, informational exchange, and site visits. In view of this hopeful development, the American Psychiatric Association again urgently petitions psychiatric and other professional societies and colleagues in all countries of the world to join in concerted and effective efforts to halt abuses by psychiatrists and other professionals for the purpose of detaining, incarcerating and punishing persons for religious, ethical, social or political beliefs. The American Psychiatric Association stands ready to initiate and coordinate these humanitarian efforts.

"Toward these goals, the American Psychiatric Association urgently requests The World Psychiatric Association to schedule an open session during its forthcoming meeting in Hawaii for the purpose of discussing the misuse of psychiatric facilities or the psychiatric profession,

in whatever country this may be occurring.

"Further, we ask The World Psychiatric Association and its member organizations to adopt the positions outlined by the American Psychiatric Association in December 1971 and April 1972."

The APA then informed The World Psychiatric Association of this action and urged placing this issue on the agenda for the VI World Congress (August 1977). Copies of the statement were sent to every component of the WPA and to other international associations. At the VI World Congress of Psychiatry, which met in August, 1977, three significant resolutions were adopted. The Declaration of Hawaii was adopted as a statement of ethical principles to guide psychiatrists in their professional work. Secondly, a resolution submitted by the Royal Australian and New Zealand College of Psychiatrists was narrowly passed. This resolution asked all WPA member nations to "renounce and expunge" abuses of psychiatry for political purposes where they might occur, and to "implement the resolution in the first instance with reference to the systematic abuse of psychiatry for political purposes in the USSR." Its passage meant that the Soviet Union had been condemned by professional colleagues for misusing psychiatry for political purposes. Then the American Psychiatric Association introduced a resolution, which passed, asking the WPA to "established a committee to investigate the abuse of psychiatry and to review all notices or complaints which are officially addressed to the President of WPA regarding the political abuse of psychiatry." The WPA Committee to Review the Abuse of Psychiatry for Political Purposes is reviewing currently (January 1980) a case of a Russian political dissenter confined to a psychiatric hospital. This case was submitted by the Royal College of Psychiatrists in Great Britain.

Since 1977, the American Psychiatric Association has written many letters to government officials about people who are apparently confined to psychiatric hospitals only for political reasons. It has established two Committees on Abuse and Misuse of Psychiatry and Psychiatrists. One is concerned with domestic problems and the other with international ones. In December, 1979, Semyon Gluzman, M.D., a Soviet psychiatrist who publicly denounced the political abuse of psychiatry in his country, was awarded Distinguished Fellowship in the APA. Other people in the Soviet Union whose confinement to psychiatric hospitals APA has protested are Alexander Podrabinek, Anatoly Scharansky, Valerie Makiyeva, Vera Lipinskaya, and Gennady Kuznetsov.

Also, the APA has been especially concerned about abuse and misuse of psychiatry and psychiatrists in South Africa, Uruguay, and Argentina. The American Psychiatric Association continues its efforts to accomplish a major goal, the world-wide elimination of political abuses of psychiatry.

APPENDIX L

ACADEMICIAN ALEKSANDROV, PRESIDENT
ACADEMY OF SCIENCES OF THE USSR
MOSCOW, USSR

THE ATTACHED CABLE WAS SENT TODAY TO H.E.
LEONID BREZHNEV.

H. E. LEONID BREZHNEV
THE KREMLIN
MOSCOW, USSR

WE, THE UNDERSIGNED, SCIENTISTS GATHERED AT THE CSCE
SCIENTIFIC FORUM IN HAMBURG, FRG, SPEAKING FOR OURSELVES
AS INDIVIDUAL SCIENTISTS AND NOT FOR OUR GOVERNMENTS,
ARE DEEPLY CONCERNED FOR THE WELFARE OF OUR RESPECTED
FELLOW SCIENTIST ANDREI SAKHAROV AND HIS FAMILY AND
HEREBY URGE THAT THEY BE PERMITTED TO RETURN TO THEIR
HOME IN MOSCOW OR TO LEAVE THE USSR, AS THEY MAY PREFER.

SIGNATURE:

OLA M. HEIDE

ORJAR OYEN

BJARNE A. WALLER

POVEL RIIS

GUNNAR SEIDENFADEN

H. HOJGAARD JENSEN

OLE MAALOE

OLIVER REVERDIN

WALTER RUEGG

J J WENT

PAUL J FLORY

ELEANOR B. SHELDON

CHRISTIAN B. ANFINSEN

DANIEL C. TOSTESON

NATIONAL DELEGATION:

NORWEGIAN

NORWEGIAN

NORWEGIAN

DANISH

DANISH

DANISH

DANISH

SWISS

SWISS

NETHERLANDS

USA

USA

USA

USA

JOHN E. CANTLON	USA
VLADIMIR HAENSEL	USA
ORVILLE G. BENTLEY	USA
PHILIP HANDLER	USA
DUANE ACKER	USA
LASALLE B. LEFALL, JR.	USA
TODD	UK
WILLIAM HAWTHORN	UK
MICHAEL STOKER	UK
IEUAN MADDOCK	UK
PETER HALL	UK
JOHN GOODWIN	UK
G. ELIAS	ITALY
E. AMALDI	ITALY
G. RODOLICO	ITALY
C. CANTARELLI	ITALY
GIORGIO PRODI	ITALY
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NATIONAL DELEGATION:

FEDERAL REPUBLIC OF GERMANY

APPENDIX M

FOR IMMEDIATE RELEASE: JANUARY 31, 1980

F.A.S.**FEDERATION OF AMERICAN SCIENTISTS**
307 Massachusetts Avenue, N.E.
Washington, D.C. 20002 (202) 546-3300Frank von Hippel
*Chairman*John T. Edsall
*Secretary*John P. Holdren
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*Director*FEDERATION OF AMERICAN SCIENTISTS
ADOPTS ANDREI SAKHAROV

The Executive Committee of the Federation of American Scientists today announced that, in an unprecedented action, it had "adopted" Andrei Sakharov as a colleague deserving and requiring an unprecedented defense by foreign colleagues. As a first step in his continuing defense, the Federation decided to encourage individual scientists to consider whether or not they would like to declare their intention of refusing to participate in official bilateral scientific exchange with the Soviet Union until Sakharov was released from internal exile in Gorky. As initial adherents to the pledge, it released the names of five Nobel prize winners and the four highest FAS officials.

FAS announced that several other major scientific societies had agreed, in various ways to circulate, or otherwise make known, this pledge to their members. In some cases, such as that of the New York Academy of Sciences, the organization will poll its members on this issue.

Further steps in defense of Sakharov would be taken as conditions evolve, and circumstances require, and as determined by subsequent Federation polls and votes of its officials.

Afghanistan & Scientific Exchange

In particular, the Federation released a poll on Afghanistan and scientific exchange taken in advance of the Soviet action against Sakharov. The poll revealed more than 50% of FAS officials prepared to support, in addition to the Administration's present policy on cutbacks of high visibility scientific exchanges, such further actions as encouraging individual scientists to refuse participation in exchanges (21%) and cutbacks in federally-funded scientific exchange (27%). These are important straws in the wind for eminent members of a scientific community devoted to scientific exchange (in an organization devoted, historically, to disarmament and better relations with all states). The Russians should note the rising storm.

The Federation of American Scientists, founded in 1945 as the Federation of Atomic Scientists, contains 5,000 dues paying members including 50% of American Nobel prize winners and functions as a civic organization on issues of science and public policy.

FAS has been in sporadic contact with Andrei Sakharov since November 1975 when he met with the Federation's Director in Moscow. FAS campaigned vigorously, in particular, in May, 1975 and October, 1978, to ensure that Sakharov's wife, Yelena Bonner received a visa from Soviet authorities for needed eye operations in Italy.

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SCIENTISTS ENCOURAGED TO ADOPT SAKHAROV

The Executive Committee of the Federation of American Scientists today urged American scientists to consider the possibility of their announcing, as individuals, that they would refuse to engage in scientific exchange with the Soviet Union until such time as Andrei Sakharov had his political rights returned to him or was permitted, if he preferred, to leave the Soviet Union. They released the following declaration for scientists to consider:

"I assert my intention of refusing to participate in official bilateral scientific exchange with the Soviet government, and its scientific representatives, either here or in the Soviet Union, until such time as Andrei Sakharov is released from internal exile."^{*}

In raising this possibility, the Federation applies to Sakharov a method which it first conceived and proclaimed in March, 1976, after meeting with Sakharov and other dissidents in Moscow in November, 1975. (The Editorial is attached for background on the method). Since that time, a number of individuals have "adopted" foreign colleagues who were denied certain rights, and have refused to cooperate with their colleague's government pending a restoration of those rights. Indeed, not long ago, an

*Among the initial adherents to this pledge were: Christian B. Anfinsen, Nobel Laureate in biochemistry; John T. Edsall, FAS Secretary and Harvard biologist; Paul J. Flory, Nobel Laureate in chemistry; Sheldon L. Glashow, Nobel Laureate in physics; Hudson Hoagland, Past President, American Academy of Arts and Sciences; John P. Holdren, FAS Treasurer and Berkeley physicist; Robert W. Holley, Nobel Laureate in chemistry; Arthur Kornberg, Nobel Laureate in Biochemistry; Hans J. Morgenthau, political scientist; Robert M. Solow, M.I.T. economist; William H. Stein, Nobel Laureate in chemistry; Jeremy J. Stone, Director, F.A.S.; Frank von Hippel, Chairman, F.A.S. and Princeton physicist.

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organization was formed to adopt two particular individuals--Scientists for Orlov and Shcharansky (SOS).

The Federation has never before, however, itself suggested that any particular individual be the focus of quite general concern. But obviously Sakharov is an unprecedented case.

In the first place, he personifies the scientist of conscience. Indeed, his Nobel Laureate citation called him "the spokesman for the conscience of mankind." This Peace Prize was awarded for his courage and eloquence and for his thesis that no country could consider its national security assured unless individual liberties were assured in every country. Thus he enunciated and advanced a new and fundamental justification for the pursuit of individual freedom everywhere.

Moreover, of significance to scientists, he reached his conclusion as a result of his scientific experience--as the inventor of the Soviet H-bomb. Thus, he moved gradually and tortuously toward this conviction as a result of his professional appreciation of the destructiveness of nuclear weapons, an experience which gives his views special significance throughout the world.

Of paramount importance, in his writings, such as his Treatise on Progress, Coexistence, and Intellectual Freedom, and in his periodic comments on world affairs, he generated the world's most powerful voice of science and public affairs. To silence this voice by exiling him in a closed city is an historic crime against the freedom of scientific conscience.

Needless to say, he was also the captain of the ship of democratic dissent in the Soviet Union. Unquestionably, his suppression is keyed to the suppression of dissent throughout the Soviet Union and meant to signal others to keep still. If scientists do not protect his voice, whose would they protect?

In this connection, Academician Sakharov himself observed on January 28 .
that the measures taken against him were:

"aimed at humiliating and discrediting me and at the same time making possible further repressive measures against all dissident groups in the country, with less possibility of the world's finding out about them, and further international adventures."

Finally, we cannot forebear from observing our close kinship with this man. Our Federation was founded by those who had invented our own nuclear weapon of mass destruction. Our own founders reached many of the same conclusions as did Academician Sakharov, and in the same way-- through experience with nuclear weapons and a sense of guilt about participation in their creation. If FAS did not defend Academician Sakharov, we would not be defending ourselves.

Nevertheless, we do not now call upon all scientists to foreclose all scientific communication until such time as Sakharov is released from this sentence of internal exile. We recognize, as we always have, the importance of maintaining the scientific brotherhood. And we do not mean, in any case, to exclude personal scientific contacts, scientific contacts aimed at diplomatic solutions of war and peace issues and other non-scientific questions (such as Pugwash conferences) or the exchange of reprints and so on. Indeed, the more difficult the cold war, the more important these exchanges can be. Thus we recognize the importance of having some scientists go and complain, even as others refuse to go and complain.

Indeed, our strategy of defending Academician Sakharov is not foreclosed by any lack of unanimity. A very large number of scientists will adopt Sakharov, we are sure, in any case. This means that the Soviet Union

will have to recognize how often its delegations will be snubbed on arrival by many offices they would otherwise visit and how many fine scientists will not travel to Moscow.

And, in the end, this spontaneous outburst of scientific support for Sakharov, through his individual adoption, is probably the only immediate strategy which cannot be credibly dismissed by the Soviets as politically motivated by hostile foreign forces.

With these considerations in mind, we propose to invite scientific professional societies, throughout the United States, to relay our message to their members and to secure themselves, or direct to us, what responses their members choose to make. Such distinguished societies as the New York Academy of Sciences, the American Physical Society, and the American Chemical Society have already assured us that means will be made available to carry this message to their members. (The Federation will also ask the organization, Scientists for Orlov and Shcharansky (SOS) to explore with their members the possibility of extending that organization's commitments to the case of Andrei Sakharov's political freedom.) FAS will maintain a depository of declarations in support of Sakharov and will periodically relay the results to the Soviet authorities.

AFGHANISTAN AND SCIENTIFIC EXCHANGE

FAS also released a poll of its members taken after the Soviet invasion of Afghanistan, and before the internal exile of Sakharov. This poll of 100 FAS officials, taken by mailgram, provided the FAS members with five possibilities, with regard to a response by the scientific community to the Russian invasion of Afghanistan--much as sportsman and grain traders were asked to support a showing of national outrage.

This was, to our knowledge, the first time that FAS officials were asked to consider a response in terms of scientific exchange to a non-scientific action.

A spectrum of responses resulted, as expected. Probably most significant was the unprecedented fraction of FAS officials prepared to consider cutbacks in scientific exchange in response to the Afghanistan invasion.

- 17% believe that scientific exchange should be insulated completely from such political events.
- 27% support the Administration cancellation of high level visits.
- 21% support the Administration and would encourage individual scientists to consider boycotting scientific exchange for so long as they see fit.
- 8% would advertize their readiness to break off federally funded scientific exchange for years in the light of further Soviet aggression.
- 27% would advocate such a cut-off for a significant period today.

It is this last significant vote that indicates a shift in the traditional thinking of the scientific community and, in conjunction with the Sakharov affair, indicates that the Soviet Union has, indeed, brought U.S.-Soviet relations to the brink of a cut-off in scientific exchange. In particular, a majority of FAS officials are prepared to do more than just support the Administration policy on cancelling some high-level exchanges. And that same majority support measures that are as strong, or stronger, than encouraging individual scientists to consider boycotting scientific exchange for so long as they see fit (viz. Option III).

Afghanistan poll on reverse side.

DEAR FAS OFFICIAL:

FOR THE PURPOSE OF FORMULATING OUR POLICY, AND ADVISING ON NATIONAL POLICY, WOULD YOU LET US KNOW HOW YOU WOULD CHOOSE BETWEEN THESE OPTIONS FOR RESPONSE BY THE SCIENTIFIC COMMUNITY TO THE RUSSIAN INVASION OF AFGHANISTAN:

I. AFGHANISTAN BEING A POLITICAL MATTER, NOT A SCIENTIFIC ONE, AMERICAN SCIENTISTS SHOULD NOT BECOME INVOLVED, AND SCIENTIFIC EXCHANGE OUGHT NOT BE USED AS PART OF ANY REPRISALS;

II. IN ACCORDANCE WITH PRESENT U.S. POLICY, RESTRICTIONS ON U.S.-SOVIET SCIENTIFIC EXCHANGE SHOULD BE LIMITED TO DEFERRING HIGH-VISIBILITY VISITS, AND CANCELLING SOME CURRENT SCIENTIFIC MEETINGS AND EXCHANGES ON A CASE-BY-CASE BASIS;

III. IN ADDITION TO OPTION II, INDIVIDUAL AMERICAN SCIENTISTS SHOULD BE ENCOURAGED TO DECLINE TO VISIT AND/OR RECEIVE SOVIET SCIENTISTS UNTIL SUCH TIME AS EACH SEES FIT, INDIVIDUALLY, TO RESUME SUCH RELATIONS;

IV. AMERICAN SCIENTISTS SHOULD JOIN IN SPONSORING A PROCLAMATION THAT IN THE EVENT OF A SOVIET MILITARY ADVANCE ON PAKISTAN, IRAN, OR YUGOSLAVIA, THEY WOULD SUPPORT A BREAK IN OFFICIALLY FUNDED SCIENTIFIC EXCHANGE FOR A DECADE OR MORE;

V. ALL U.S. GOVERNMENT FUNDED SCIENTIFIC EXCHANGE WITH THE SOVIET UNION SHOULD NOW BE CANCELLED FOR A FINITE, BUT SIGNIFICANT PERIOD, AS THE SCIENTIFIC COMMUNITY CONTRIBUTION TO THE NATIONAL EFFORT TO DETER SOVIET AGGRESSION;

VI. OTHER OPTIONS PREFERRED, OR COMMENT DESIRED.

FRANK VON HIPPEL, CHAIRMAN

F. A. S. PUBLIC INTEREST REPORT

Formerly the FAS Newsletter

THIS ISSUE:
HELPING COLLEAGUES ABROAD:
A METHOD

Vol. 29, No. 3

March, 1976

ON A METHOD OF HELPING COLLEAGUES ABROAD: "THE AMERICAN REFUSENIK"

In December, we reported on the individual situations of some Soviet scientists in Moscow. In January, we discussed both the general situation and the general obligation of American scientists to assist their colleagues abroad. But what is it that, in fact, American scientists can do? FAS has an obligation to try to answer this question in this last, for the time, report on this issue.

A review of the history of the problem reveals that, for the most part, scientific institutions have left the problem of protest to individuals. But the individuals themselves have not, by and large, hit upon any plausible method. More activity, and more creativity, seems called for by both individuals and institutions. But, in particular, a useful method by which individuals could be effective would take some of the burden off of scientific institutions who could continue to function in support of unalloyed openness in their way.

We begin by asking what conditions a successful method should have. In the first place, such a method should be promulgated in the context of a general desire to increase scientific exchange, to improve cooperation between nations, to advance the cause of peace, and so on.

Second, the method used must be such that it does not exhaust the enthusiasm of the American scientific community for persisting in the face of a problem that is itself certain to be continuing.

Third, the method should be such that the punishment fits the crime. This means that the method

must be flexible, because the different offenses against scientific freedom are themselves numerous and quite different. And it means that the method must focus on resolvable problems, issues which do not require leopards to change their spots.

Fourth, the method must be largely decentralized so that the community at large need not work within or through any particular organization, or organizations, with all that would imply for tapping the energy of only a restricted group.

Fifth, the method should apply to all scientists — not just the Jewish refusniks, and not just the embattled Soviet scientists in general, but all scientists abroad suffering any problem that is unfairly interfering with their pursuit of science.

The solution we propose does have these characteristics. We propose that American scientists make it a practice, from time to time, to adopt colleagues abroad who need and deserve help in protecting their careers against improper governmental action. The American scientist would then advise the government in question that he intends, as an individual, to refuse to participate in one or more particular kinds of scientific exchange or cooperation until the specified scientific injustice is rectified.

Thus an American scientist might quietly advise a foreign government — or just publicly announce — that he was refusing: 1) to open his laboratory to foreign visitors from a specific state; or 2) to attend

—Continued on page 2

—Approved by The FAS National Council

FAS WILL DO WHAT IT CAN BUT OTHERS MUST HELP

We have come to understand, with surprise and over a period of time, that total strangers who live in distant countries, in situations and cultures alien to one's own, can also help.

—Founders of a Soviet Human Rights Organization

Scientists and intellectuals like to speak, but they do nothing concrete; they make appeals to the Soviet authorities, but later say that the protests and appeals were not serious.

—KGB General to Corresponding Member
Benjamin Levich

To what extent can intellectuals help and how? This is the ultimate question for American scientists, virtually all of whom share a consensus on the desirability of helping colleagues abroad enjoy the scientific and human freedoms which we know here.

It is evident that many different methods will be necessary for any one nation much less for the many different

nations at issue. What we want, in this final report, is to start individuals and organizations thinking along creative lines; to solicit suggestions from our members; to encourage all scientists to participate as individuals and through their organizations in this effort; and to provide readers with information about the international organizations available to which one could complain, (WFSW, ICSU, and UNESCO).

As indicated on page 8, the FAS Council has approved the proposal that FAS extend its work in helping foreign colleagues. We will undertake, about once a year, to look into the plight of foreign colleagues in different areas. But we hope that American scientists and institutions will not adopt a "leave it to FAS" posture. FAS has many issues of concern and is extremely limited in staff time. The scope of our work in this area will be directly proportional to the moral and financial expressions of interest in it by our members and will, in any case, be far more limited than the task requires. □

Continued from page 1

an international conference; or 3) to travel to a specific state; or 4) to participate in an exchange program; until such time as his adopted counterpart in that state was permitted: a) to attend a specific foreign conference; or b) to hold a job befitting his qualifications; or c) to be released from a prison; or whatever. The American scientist could himself decide what punishment suited what crime. But whatever he decided would be not just an empty farce since he was prepared to carry it out. And it would not be an effort to sabotage scientific exchange. Instead, it would be a well-defined inducement to a foreign government to permit a specific foreign scientific effort by threatening — until that scientific activity or cooperation was permitted — to withhold his own cooperation.

There are few states indeed that do not want the cooperation of American scientists. Most would worry, to some degree at least, about the low level probability that, when some exchange became indicated, some of the scientists involved might be unwilling to cooperate. And since all scientists will not be up-in-arms with regard to any particular country at any particular time, scientific exchange with all countries can go forward under this system. Further, nations are provided with the means to reduce the level by which cooperation has been impaired by satisfying the precise and limited complaints of the aroused American scientists.

Is The Method Suitable?

Does this method fit our conditions? The American scientist does threaten to withdraw scientific cooperation (his) — but he only does so in an effort to increase scientific production and cooperation (his colleagues').

The method does not exhaust the enthusiasm of our community because it focuses on individuals doing whatever their conscience impels, and doing so only for such periods as they wish.

The method will fit the crime as precisely as the individual American scientist can make it do, and thus taps the ingenuity of individual American scientists.

The method is largely decentralized and the American scientist needs not act through any specific organization, or even learn about the case from them.

Finally, the method does apply to all scientists everywhere, not only Soviet scientists or Soviet refuseniks. It is true, and we recognize, that the effectiveness of this method for achieving any specific goal will vary when confronted with nations of different personalities and with different objective needs for American science. To this extent the method is necessarily somewhat tentative and experimental and individual scientists will be "playing it by ear" at the outset.

We also recognize that certain kinds of very fundamental cooperation probably should not be abridged — the sending of reprints, for example, or published material. But other kinds of cooperation might very clearly be abridged; such as the cooperation with politically chosen delegations of irrelevant scientists

who sometimes replace the desired invitees to an international conference.

Above all, we think that our method should be combined with vigorous efforts to expand organized scientific exchange, to support international conferences, to seek all feasible ways to spread scientific knowledge in traditional ways. This complements — and even underlies — the success of the method.

But what should the method be called? Glorifying the fashion in which FAS's attention has been drawn to this problem, and noting that the American scientist would be "refusing" certain cooperation in an effort to secure other cooperation, we think it appropriate to dub the participating American scientists of conscience: "The American Refuseniks". □

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| Raphael Litaner (Physics) | Myron H. Weppman (Medicine) |

• Nobel Laureates

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APPENDIX N

January 29, 1980

CONGRESSIONAL RECORD—HOUSE

H 385

LEGISLATION INTRODUCED TO LIMIT UNITED STATES-SOVIET SCIENTIFIC EXCHANGES IN RESPONSE TO ACTIONS AGAINST ANDREI SAKHAROV

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from California (Mr. Brown) is recognized for 5 minutes.

• Mr. BROWN of California. Mr. Speaker, today I am introducing legislation which is designed to demonstrate to the Soviet Union that their actions against Dr. Andrei Sakharov will have a serious and adverse impact upon United States-Soviet scientific exchanges. In the past the Soviet Union has placed great value upon these exchanges, which have had a mutual value to the United States.

The actions against Andrei Sakharov, however, changed the climate for such exchanges, even in areas where the Soviet invasion of Afghanistan did not. As chairman of the Subcommittee on Science, Research and Technology of the Committee on Science and Technology, I have had considerable opportunity to investigate our present programs, and have some ability to influence the future direction of those programs. The legislation which I, and the ranking minority member on my subcommittee, Representative HAROLD HOLLENBERG, introduce today is our present thinking about what steps the United States should take to modify future scientific exchanges with the Soviet Union.

Hearings, of course, will be held on this matter. This Thursday my subcommittee will hold joint hearings with the House Foreign Affairs Subcommittee on International Security and Scientific Affairs on the upcoming Helsinki Scientific Forum, where the actions against Andrei Sakharov are certain to be discussed. Other hearings will occur in the future.

At this time I wish to have the text of House Joint Resolution 487 printed in the Record for the review of my colleagues:

H.J. Res. 487

Whereas the free exchange of ideas of interaction is a fundamental principle of the Constitution of the United States, and has been subscribed to by all signatories to the Final Act of the Conference on Security and Cooperation in Europe (hereinafter referred to as the "Final Act");

Whereas scientific and scholarly exchanges between the United States of America and the Union of Soviet Socialist Republics (hereinafter referred to as the "Soviet Union") embody this principle;

Whereas the signatories to the Final Act recognized therein that cooperative efforts in science and technology are urgently required to solve world-wide economic, environmental, and social problems;

Whereas the signatories to the Final Act guaranteed therein to respect "human rights and fundamental freedoms including the freedom of thought" and "conscience" and guaranteed "to promote and encourage the effective exercise of civil, political, economic, social, cultural and other rights and freedoms which derive from the inherent dignity of the human person and are essential for his free and full development" and which are required for open and effective scientific and technical cooperation;

Whereas Andrei Sakharov, physicist, member of the Soviet National Academy of Sciences, and Nobel Peace Prize Laureate, has

worked for peaceful international scientific cooperation, has championed freedom of scientific investigation and communication, and condemned the use of force by all nations as a threat to human existence, and has actively sought to assume faithful adherence to the principles of the Final Act by the authorities of the Soviet Union;

Whereas in consequence of his acts the authorities of the Soviet Union have involuntarily placated, harassed, and attempted to silence Andrei Sakharov and his wife, Elena Bonner, and have stripped him of many public and professional honors;

Whereas by these acts the authorities of the Soviet Union have violated the spirit and letter of the Final Act;

Whereas scientists and scientific societies of the United States and other nations have condemned the aforesaid acts of authorities of the Soviet Union; and

Whereas these actions against Andrei Sakharov have severely damaged the fragile relationship between the United States and the Soviet Union, and, if continued, raise great doubts about any future relations; Now therefore be it resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the Government and people of the United States:

(1) join the American and international scientific communities in condemning the actions and dishonoring of Andrei Sakharov by the government of the Soviet Union;

(2) urge the immediate restoration of Andrei Sakharov and his wife to their former status;

(3) declare that it is the policy of the United States government to halt official travel to the United States which is not travel to our national needs, by scientists and scholars of the Soviet Union, for a minimum of one year;

(4) recommend that all agencies of Federal, State, and local governments, including but not limited to the National Science Foundation, the National Bureau of Standards, the National Aeronautics and Space Administration, the Department of Energy, the Environmental Protection Agency, and the Environmental Protection Agency, private agencies and professional societies, scientists, and engineers be requested to defer all official and non-essential travel to the Soviet Union for a period of one year unless otherwise dictated by extraordinary circumstances or individual conscience;

(5) call upon the governments, professional societies, and individual scientists and engineers of nations who are signatories to the Final Act to join the United States of America in resolutions or other appropriate actions similar to this one; and

(6) direct the President to report to the Congress at the earliest practical moment, and thereafter as necessary, concerning other domestic and foreign policies which are appropriate to further the purposes of this resolution.

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from Florida (Mr. PEPPER) is recognized for 60 minutes.

[Mr. PEPPER addressed the House. His remarks will appear hereafter in the Extensions of Remarks.]

LEGISLATION CALLING FOR RELEASE FROM INTERNAL EXILE OF DR. SAKHAROV

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from New York (Mr. WOLFF) is recognized for 5 minutes.

• Mr. WOLFF. Mr. Speaker, I, along with Chairman ZASTOCKI, have introduced a resolution calling for the release from internal exile of Dr. Andrei Sakharov.

Dr. Sakharov has for years devoted tremendous energy and resolve in his advocacy of the cause of human rights throughout the world. His efforts were acknowledged in 1975 with his receipt of the Nobel Peace Prize. But as we know, human rights are not very fashionable in the Soviet Union; Dr. Sakharov was not permitted to accept his prize personally.

Up until now, Dr. Sakharov has been left alone by the Soviet authorities; his status as one of the leading scientists in his country provoked hesitation from those who wished to silence him. Last week, however, the Soviets decided to change this policy to one of active repression. Dr. Sakharov's place of exile in Gorky has been conveniently located next to the police station.

To make matters entirely intolerable, a live-in KGB agent has been stationed right in his living room. Not only have contacts with foreigners been forbidden, but all "criminal elements," loosely applied to mean almost anyone, are denied access. The Soviet police, true to their reputation, are reported to have brutalized some of the few who have been able to get in to see the Sakharovs; Yelena Bonner, tried to intervene on behalf of one of her unfortunate guests, she was forcibly ejected from the police station, causing her physical harm.

I am sure that every freedom-loving individual throughout the world shares my sense of utter revulsion at this inhuman display of institutionalized repression. The Soviets have demonstrated conclusively that they have and will continue to systematically destroy the basic rights of their citizens and neighbors, world opinion be damned. I have not forgotten the Shcharankers and the Ginsburgs who continue to languish in Soviet prisons; but the arrest of Dr. Sakharov bears added significance. In a time when the relations between our two countries are severely strained, the Soviets have found it opportune to thumb their noses in our direction. All have acknowledged Dr. Sakharov as being the voice of the oppressed behind the Iron Curtain. I vow that this thoughtful and compassionate voice shall not be silenced.

The SPEAKER pro tempore. Under a previous order of the House, the gentleman from Missouri (Mr. SKELTON) is recognized for 5 minutes.

[Mr. SKELTON addressed the House. His remarks will appear hereafter in the Extensions of Remarks.]

THE RETIREMENT OF THE HONORABLE JOHN CAVANAUGH

(Mr. HANLEY asked and was given permission to extend his remarks at this point in the Record and to include extraneous matter.)

• Mr. HANLEY. Mr. Speaker, it comes to few men or women to receive such passes

March 4, 1980

Some Issues to Consider Before Marking Up H.J. Res. 487

1. Should the resolution continue to emphasize Andrei Sakharov and the human rights of scientists, or should it be linked to the Soviet invasion of Afganistan?
2. Is the language in the resolution (page 3, resolved #3) on "official travel to the U.S. which is not essential to our national needs" in accord with the resolution adopted by the Hamburg Scientific Forum, and other provisions of international law and protocol?
3. Should the resolution be expanded to include other scientists besides Sakharov?
4. Should the policy be to have a moratorium on all U.S. funded scientific exchanges, whether the funding is direct or indirect?
5. How closely should the resolution distinguish between technical and scientific exchanges?
6. What additional points should be added to the resolution to make it more constructive (such as adding the need for standards of conduct for exchanges)?
7. Should the time of a one-year moratorium be shortened, lengthened, or made flexible?

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States representative for the taxpayers of east Tennessee.

When many of his fellow Congressmen are flying around the world on junkets to the warm countries in the winter and the cool countries in the summer, John Duncan is either freezing with us in the winter or just plain sweating with us in the summer months as he makes his weekly trips from Washington, D.C. to Tennessee in search of what the people he represents are thinking about and wanting to have happen in our Government.

Duncan wears out his staff in Tennessee with night and day trips to schools, hospitals, business and workers meetings, open forums throughout his district and untold number of picnics, dinners, and special events.

He is seemingly tireless in his contact with "his" people... his Tennesseans. Often, he brings his whole family with him to let them become acquainted with the people he serves and vice versa.

The Congressman is a stickler in answering his mail which is a switch from many elected officials. His staff in Washington must acknowledge all mail within 48 hours and seek out answers to constituent's questions with all possible haste.

Many inquiries are personal problems dealing with the government while others are questions relating to legislation or bureaucracy rulings.

Born in a small town in Tennessee, John Duncan is one whose values stem from conservative and financial stability in his upbringing. Although he is a man of compassion, he believes in a dollar's worth for a dollar's pay. He abhors the runaway inflation largely created by the federal government's lack of financial restraint and waste.

Visitors to the nation's capital will find the office of John Duncan as open and friendly as the man who was put there by the voters. No one is turned away with a cold "he's too busy to see you" approach.

While the congressman does his duty in answering roll call and voting on the hundreds of bills presented each year, he finds time to greet and be with his Tennesseans.

There must be times when a man with his convictions feels so frustrated with the majority of Congress and their continued breach of public faith, their restless search for more taxes to spend in frivolous ways that he would want to chuck it all and retire to the good life of East Tennessee.

One could not fault him for harboring such thoughts nor blame him if he called it a day but it is too bad we can't clone John Duncan and keep such a man representing us from now on.

It is even more desirous to have several hundred John Duncans in Congress but it not only takes men of his character to run for office, it takes a voting public that is demanding of such integrity to elect them. Unfortunately, such congressmen are in the minority in Washington.

In the meantime, it was good to have John J. Duncan, U.S. Representative for the Second District, among us again and to see him honored by an appreciative crowd of Tennesseans. He is respected by his peers as well and rightly so.

They know where John Duncan stands and who he represents. Wouldn't it be nice if the same were true of all our elected officials in Washington, D.C.?

SUPPORTING ANDREI SAKHAROV

HON. GEORGE E. BROWN, JR. OF CALIFORNIA

IN THE HOUSE OF REPRESENTATIVES Thursday, February 28, 1980

Mr. BROWN of California. Mr. Speaker, today the Wall Street Journal carried a very sensitive and sound editorial concerning the actions against and reactions to Soviet attempts to silence Dr. Andrei Sakharov.

I have previously discussed this matter and, as you know, have introduced legislation linking the fate of United States-Soviet scientific exchange to the fate of Andrei Sakharov. The Subcommittee on Science, Research and Technology, which I chair, will receive an informal report next week from Dr. Phillip Handler and other members of the U.S. delegation to the Scientific Forum being held in Hamburg at this moment, and decide on our future actions at that time.

At this time, I commend this editorial to my colleagues. (From the Wall Street Journal, Feb. 28, 1980) THE SAKHAROV FORUM

Andrei Sakharov was recently sent on internal exile from Moscow, and seven more unpleasant developments may await the Soviet Union's most prominent domestic dissident. But the Carter administration seems to have exhausted its diplomatic arsenal in protesting the Afghanist invasion. Western action on behalf of Dr. Sakharov will have to come from the private sphere, and particularly from the scientific fraternity of which he is such a distinguished member. In spite of its ambivalence toward political action, this fraternity does command considerable power of persuasion. Now is the appropriate time to use it.

In several ways, in fact, the world scientific community is making an impressive effort on Dr. Sakharov's behalf. His exile has dominated proceedings of the Scientific Forum, a 30-nation gathering which ends this Friday in Hamburg. (Western delegations to this two-week offshoot of the 1975 Helsinki Accord are largely scientists unconnected with government.) The opening public session featured a number of strong statements on his behalf, even from scientists of countries which previously had not taken the lead on human rights issues. Separately the (U.S.) National Academy of Sciences, of which Dr. Sakharov is a foreign associate, announced Monday it would suspend bilateral contacts with the Soviet Academy of Sciences for six months. In a survey conducted by the policy-oriented Federation of American Scientists, more than 75 percent of the scientists responding said they would forego official exchanges with the Soviets; the Federation announced Tuesday.

These actions deserve praise, but they can't be considered the end of the story or even much more than a minimal response. From the testimony of his friends, Dr. Sakharov is not just another scientist who has gone into politics; he is one of the great men of our time. His distinguishing trait is a morally compelling ability to exert himself against injustices, great and small, while maintaining total clarity about the limited prospects for political reform. One Ameri-

can supporter calls him "the last and finest example of the Russian Intellectual."

Even the Soviet government seems dimly to recognize his quality, treating him, by its standards, with kid gloves. Although a kind of bill of attainder stripped him of his medals, he still retains his membership in the Soviet Academy of Sciences, with its salary and considerable perquisites. But this treatment hasn't kept armed agents from bursting into Dr. Sakharov's new apartment or police from roughing him up during a visit to a Gorky police station. The Soviet Union has a long tradition of brutality toward its best people.

Some clues to Dr. Sakharov's fate might emerge at the March 4 to 8 regular meeting of the Soviet Academy, especially if the attempt is made to expel him. This course of events may well be determined by the firmness with which international science and Western public opinion continues to rally to his support.

MORE INDUSTRIES SUPPORT CAPITAL COST RECOVERY ACT

HON. JAMES R. JONES

IN THE HOUSE OF REPRESENTATIVES Thursday, February 28, 1980

Mr. JONES of Oklahoma. Mr. Speaker, since Congressman Barber Conable and I introduced H.R. 4646, the "Capital Cost Recovery" Act, last year, business leaders and industries all across the country have joined in our efforts to promote increased capital formation. Furthermore, 285 of our colleagues in the House have added their names as cosponsors of this bill. At this time, I am especially pleased to announce that two more important business groups have joined us in this effort.

The National Association of Furniture Manufacturers have joined with Semiconductor Circuits, Inc. in endorsing H.R. 4646, as one of the essential factors necessary to increase economic growth and productivity. I am pleased to have the endorsement of these two outstanding groups in our efforts to improve our country's sagging economy.

I would like to thank these two groups for their support, and at this point in the Record I include the letter of endorsement from Semiconductor Circuits, Inc. I urge my colleagues to take note of the points Mr. LaBrie makes.

Re H.R. 4646 and H. 4433, Desperately Needed Capital Formation Incentives. Hon. JAMES R. JONES, U.S. Representative, Oklahoma. Hon. JOHN H. CHAFFE, U.S. Representative, Oklahoma. Hon. BOB PACKWOOD, U.S. Senator and House of Representatives, Washington, D.C.

GENTLEMEN: Just imagine, a headline saying, "Productivity Increases and Inflation Decreases in America." The 11 January 80, Wall Street Journal reported, on Page 2, "Firms Plan Slim, Inflation-Adjusted Rise Of 1% to 2% For Spending During 1980." A copy of that article is attached for your information. If the source of that report is partially correct, then very few businesses in the United States really believe that Congress is prepared to do anything to help

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and flagrant violation of a host of international agreements to which it is a party. It means that Soviet leaders cynically talk about human rights while they stifle the free expression of one of their country's great thinkers and Nobel Laureates.

This resolution will send a clear message of resounding disapproval from the American people to Moscow. But it cannot be an isolated gesture.

The American scientific community, in particular, will have many opportunities in private and in public to make clear how repulsive they find this brutal treatment of one of the world's most distinguished members of their profession.

Indeed, at this very moment, a gathering of scientists representing the 35 signatories to the Helsinki accords is taking place in Hamburg, Germany. Philip Handler, the president of the National Academy of Sciences and head of the U.S. delegation, and other Americans are using this forum to make their views known to their colleagues around the world.

In a statement delivered prior to his departure for Hamburg, Mr. Handler forecast the message he was carrying:

Our message will be clear: By flouting the standards of human decency, by creating an atmosphere of tension and fear, Soviet authorities have angered and alienated the scientists of the U.S. and of the West; in so doing, they have isolated their scientific community from the one resource they crave more than any other—the stimulation and creativity of free minds. That message will be conveyed in the presence of delegates from all the other East-European nations. May it strike home.

It is a powerful statement, Mr. President.

I ask unanimous consent that the opening address given yesterday in Hamburg by Mr. Handler be printed in the Record. The message he promised is delivered forcefully and publicly.

There being no objection, the address was ordered to be printed in the Record, as follows:

ADDRESS BY PHILIP HANDLER

Mr. Chairman, distinguished delegates to the Scientific Forum from the nations of the Conference on Security and Cooperation in Europe, ladies and gentlemen:

Let me express the thanks of my country, and to my friend, Dr. Klaus Gottstein, Executive Secretary of the Forum for his diligence and imagination in preparing for this unprecedented gathering. The rules by which CSCE proceeds seem strange and awkward to scientists. Hence, it is all the more true that, whatever the outcome of the Forum, we owe a debt of gratitude to Dr. Gottstein and to his government for establishing a suitable atmosphere in which to conduct our discussions.

The Forum is not a "scientific meeting" as scientists use the term; it is a part of what is called the "CSCE Process." Its principal concern is the international scientific enterprise, including its groundrules, rather than the substance of science, itself. The Forum, therefore, is seen by the American delegates as an opportunity to discuss freely and without restriction those matters particularly germane to the improvement of scientific relations among the CSCE countries. My purpose, today, is to summarize

for you, those matters that we most wish to discuss for the next two weeks.

The background against which our discussions take place begins in the post-World War II recovery of Europe. North America emerged from that war physically unharmed and with unparalleled scientific resources. For almost two decades our rapidly grown scientific enterprise was perhaps two-thirds of the world total. Since then, our relative position has diminished as the other CSCE nations had Japan developed their own scientific capabilities so effectively. But, to us, who believe that knowledge gained anywhere benefits mankind everywhere, that is cause only for rejoicing. The resultant unprecedented burgeoning of understanding of living systems and of the physical universe requires no recounting here. Nor does the equally remarkable proliferation of technologies that affect virtually every aspect of our daily lives. But those dramatic developments have markedly altered the societal role of the scientist precisely because it is science that now offers the principal means to affect the ancient scourges of humanity—war, famine, and pestilence—as well as to affect the quality of life everywhere.

As scientists, we have also learned something of the consequences of our acts of discovery and application. Robert Oppenheimer said, "The physicists have known sin," but the physicists are not alone. We enter the last two decades of the twentieth century acutely aware that we share responsibility for the fate of our children's children; we share responsibility for the quality of the future of mankind and we appreciate our obligation to help assure that there will, indeed, be a future for mankind.

The scientific communities of the world will inevitably be expected to assume greater responsibility for expanded food production and dietary improvement, for better health care and the eradication of disease, for improved communication, for new ways both to conserve and to harness sources of energy, and—regrettably—for the development of new and more lethal weapons. We will also be faced with the great need to contribute to popular education for citizenship in our technology-dominated world. *Pari passu*, we will surely consider ourselves ever more responsible for the ways in which the fruits of our labors are used by the larger society.

Knowing all this, and knowing that governments today seek to use science and technology in ways unthinkable but a few decades ago, we must also reckon with the fact that scientific interchange across national boundaries, among scientists and their institutions, has become far more complicated than once it was.

What can we foresee for the future of scientific cooperation, exchange, and communication?

Because science is international, we have always been faced with the problem of international agreement on technical standards: on units of measurement, on symbols and nomenclature. Now, it is even more important that we agree and conform to common standards of responsibility and behavior.

It is ironic, therefore, that the obstacles to free and timely interchange among scientists are becoming more, not less, significant and complicated as our technical capacity to communicate expands. It is a painful paradox that scientific interchange has become more vulnerable as the forums for such interchange become more numerous.

Our formal adoption of common standards of behavior began in 1968, when the International Council for Scientific Unions (ICSU) first took a stand by adopting a resolution on political non-discrimination. In 1963, ICSU created its Committee on Free

Circulation of Scientists. In 1976, it published its resolution on the universality of science and established the Committee on the Safeguard of the Pursuit of Science. (I am pleased that the distinguished Chairman of that Committee, Professor Ole Maaloe of Denmark, is a delegate to this Forum.)

Thus, the one nongovernmental scientific organization with which every scientific community represented at this Forum has some contact has a history of more than two decades of thoughtful, constructive progress toward the concept of common standards and values in the world of science. The Helsinki Final Act complements the ICSU initiatives and expands both their meaning and their force, since the Final Act was signed by governments rather than by scientists.

Yet, today, this Forum gathers in an atmosphere of international tension and with somewhat less than full trust. Those of you who read the press dispatches from the United States will know that the American delegation is here despite calls to boycott from a number of eloquent and eminent American scientists. You will be aware of the deep, pervasive concern of the American scientific community for the fate of individual scientists now in prison or in exile in their own countries. Harsh words have been spoken; some of them were made at a recent hearing before the Commission of our Congress charged with following the progress of the Helsinki Accords.

The American delegation to the Scientific Forum fervently believes that freedom is absolutely essential to the scientific endeavor. We are critical of national acts that fall to meet the basic tests of adherence to the Helsinki Final Act. We are dismayed about the manner in which some countries regulate the participation of their scientists in international scientific meetings; about the abridgement of freedom to leave a country, as well as of permission to enter it; about the censorship of international journals of science; about the dismissal of scientists from their posts because they ask to emigrate, or because they disagree with the current policies of a government; about the harsh treatment of scientists who have sought to monitor how well their governments adhere to the provisions of the Helsinki Accords.

Let me invite your attention to the Universal Declaration of Human Rights, to the International Covenant on Economic, Social and Cultural Rights, and to that excellent and little monograph by the Council for Science and Society and the British Institute of Human Rights, entitled "Scholarly Freedom and Human Rights." It makes the unambiguous point that "The success of a scholar's work depends as much on the freedom of others to study and do research as it does on his own."

The members of our delegation will speak as individuals, as free men and women from a free country; we will offer constructive proposals on ways to improve the atmosphere for scientific interchange, on ways to find common standards and values, and on specific proposals for steps toward a true cooperative spirit.

In 1976, I told the Annual Meeting of our Academy that:

"I am committed to defense of the human rights of all persons, and to those of scientists in particular. Not, as is so often argued, because humanity may be denied the fruits of their science, but because they are precious as human beings; because abrogation of their rights is injurious to all mankind; because as liberal intellectuals, scientists not infrequently become involved in the defense of the human rights of others; and because I am likely to be best informed concerning their circumstances."

To me, and to all members of the American

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delegation, the questions of freedom of inquiry, freedom to write and publish, freedom to speak, freedom to come and go across national borders, and freedom to live where one's heart and conscience take one, are indissolubly bound to freedom of one's person. We cannot consider scientific communication. We perceive no essential distinctions between pursuit of truth about the nature of man or of the physical universe and pursuit of truth about the human condition in the societies in which we live.

Nor do we speak for ourselves alone. In our country, in a spontaneous upwelling without precedent, thousands of scientists have been declaring themselves personally unwilling to engage in scientific interchange with colleagues in the Soviet Union until the government of that country has restored the normal civil status of scientists who have been imprisoned for acts consonant with the spirit of the Helsinki Agreement, until that scientist whom the Nobel Committee termed "the conscience of mankind" is once again allowed to serve his country and humanity with the freedom and honor he so well deserves. The scientific world refuses to accept protestations that such matters are the internal affairs of the countries involved. Indeed, agreement that these transgressions, wherever they occur, are of universal concern is the very essence of the Helsinki Accords. And if dissatisfaction continues to spread among Western scientists, if the matters that trouble us are not rectified, if we are confronted with yet further crises of conscience, the interchanges that we have gathered here to foster will, instead, soon dissolve in bitterness and anger.

In the past decade or so, the number of scientists crossing borders among the CCGP countries has expanded remarkably. International scientific cooperative programs have developed with enthusiasm and substantial governmental support. All of us would like this cooperation to continue and expand and would like the scientific cooperative avenues to broaden. Some of the CCGP countries have benefited more than others; it would be good to redress that imbalance, to assure that the fruits of the scientific endeavor are truly of equal benefit to all.

The least complicated, yet in many ways the most important area of scientific cooperation is fundamental research—the exploration of nature itself. In an ideal world, this would require the support but neither the permission nor the catalysis of governments since it occurs readily on the initiative of scientists themselves. Since every political barrier to this spontaneous process must be a matter of deep concern to scientists everywhere, such problems rank high on the agenda of this Forum.

But there are also numerous opportunities for meaningful cooperation in the areas of applied research on our agenda. For example, there are opportunities for significant new cooperative ventures—bilateral and multilateral in the fields of conservation, conversion, transmission, and use of energy. Patently, the success of efforts in these directions will be critical to the vitality of the economy and the quality of daily life in every country and may well be determinant with respect to the prospect for world peace.

Before this century is over, the success or failure of science may well be judged by the success or failure of agriculture. There are vast possibilities for increasing knowledge of genetic mechanisms which can improve geographic adaptability and disease resistance. With patience and skill, the reproductive efficiency of livestock can be enhanced and the devastations of epizootic diseases can be reduced. Current research on plant diseases may enable environmentally-conservative biological methods of pest control, for example through the use of gametocides, ster-

ilants, and species-specific microbial pathogens. Better knowledge of the photosynthetic process and the nitrogen exchange should enable markedly enhanced food production efficiency.

Scientists stand before the task of a hungry, burgeoning humanity; we must not be found wanting.

We have just begun to bring the fruits of new biological knowledge and understanding to bear on the dread diseases of mankind. The eradication of smallpox is a classic model of international cooperation in the application of knowledge. That accomplishment is a tribute to Professor Raska at the Charles University in Prague who was, for years, the lonely principal proponent of what became the successful eradication campaign and to Professor Henderson of Johns Hopkins University who planned and directed its final stages. We are morally constrained to seek like solutions to such other infectious diseases as measles and poliomyelitis; to help bring under control such tropical diseases as trachoma and schistosomiasis. What we are learning about interferon, hormones and their receptors, immunochemistry, genetic mechanisms, environmental challenge, the early detection and treatment of many forms of cancer, the etiology and pathogenesis of cancer, atherosclerosis and "autoimmune diseases" must be shared fully with each other and with those who conduct research on health problems in countries outside the CCGP family.

To share the results of the combined health research of the CCGP countries is a collective scientific research and decision-making are essential if we are to arrest global warming and marine degradation and pollution. No nation has the resources, the access, or the talent to grapple with these problems alone. As one of my colleagues in our delegation has remarked, "Real progress in improving global environments while simultaneously making the fruits of technology accessible to a broader spectrum of the citizens of all countries is such a worthy objective."

We are well aware that only through the careful nurturing of cross-cultural communication can we bring a sense of perspective and balance to each others' views. The blights that bedevil many of the world's cities and the grinding poverty and ignorance of many rural peoples are, or are about to become, the common problems of all societies. We need each other if only to seek amelioration of these great evils.

It would be an immense tragedy if the glorious possibilities of cooperation in these ventures were to be denied to mankind in consequence of disintegration of the international scientific order because of the failure of some to live up to the standards of behavior to which our governments agreed in Helsinki. Are the ideological polarizations of today's world driving our scientific communities apart? Or can reason and good will prevail? We may know more two weeks hence.

It is my heartfelt hope that the results of this Forum will yet be recorded with pride by the scientists in attendance.

For the duration of this Forum, I suggest that we could usefully ask ourselves the following questions:

(1) Can the ways in which the international organizations of science address their tasks be improved?

(2) If traditional disciplines impose conventional boundaries that are inappropriate to today's needs, can new terms of reference be devised for the broadly-constructed fields of inquiry before us?

(3) Can we agree on guidelines to assure that international meetings and exchanges will take place in a climate conducive to

free association and unfettered communication?

(4) Is it possible to develop an international style that leaves arrangements for scientific interchange in the hands of scientists, not politicians, a style that facilitates the acceptance of invitations and the dissemination of knowledge, in which the desirability of mutual benefit is implicit?

(5) Can we agree to strengthen the apparatus and the resolve of the International Council of Scientific Unions to develop and apply that set of common standards and values which is already part of its agenda?

But I must warn that even constructive, affirmative responses to these questions may not suffice. This meeting is being watched. This Forum, once deemed of little significance, has become a "step between Belgrade and Madrid," and the signals emanating from these halls will not go ignored.

To achieve the modest goals I have proposed, it is imperative that we first wholeheartedly accept and resolve to implement the elemental propositions concerning human rights that underlie the very roots of our scientific endeavor.

To quote another colleague: "Intellectual freedom is essential to human society—freedom to obtain and distribute information, freedom for open-minded and unfeared debate and freedom from pressure by officials and prejudices. Such a trinity of freedom of thought is the only guarantee against an infection of people by mass myths. Freedom of thought is the only guarantee of the feasibility of a scientific democratic approach to politics, economy and culture."

Those words were written by a Foreign Associate of the National Academy of Sciences: Andrei Sakharov.

Mr. HAYAKAWA: Mr. President, I yield 2 minutes to the distinguished Senator from Illinois who also wishes to speak on this resolution.

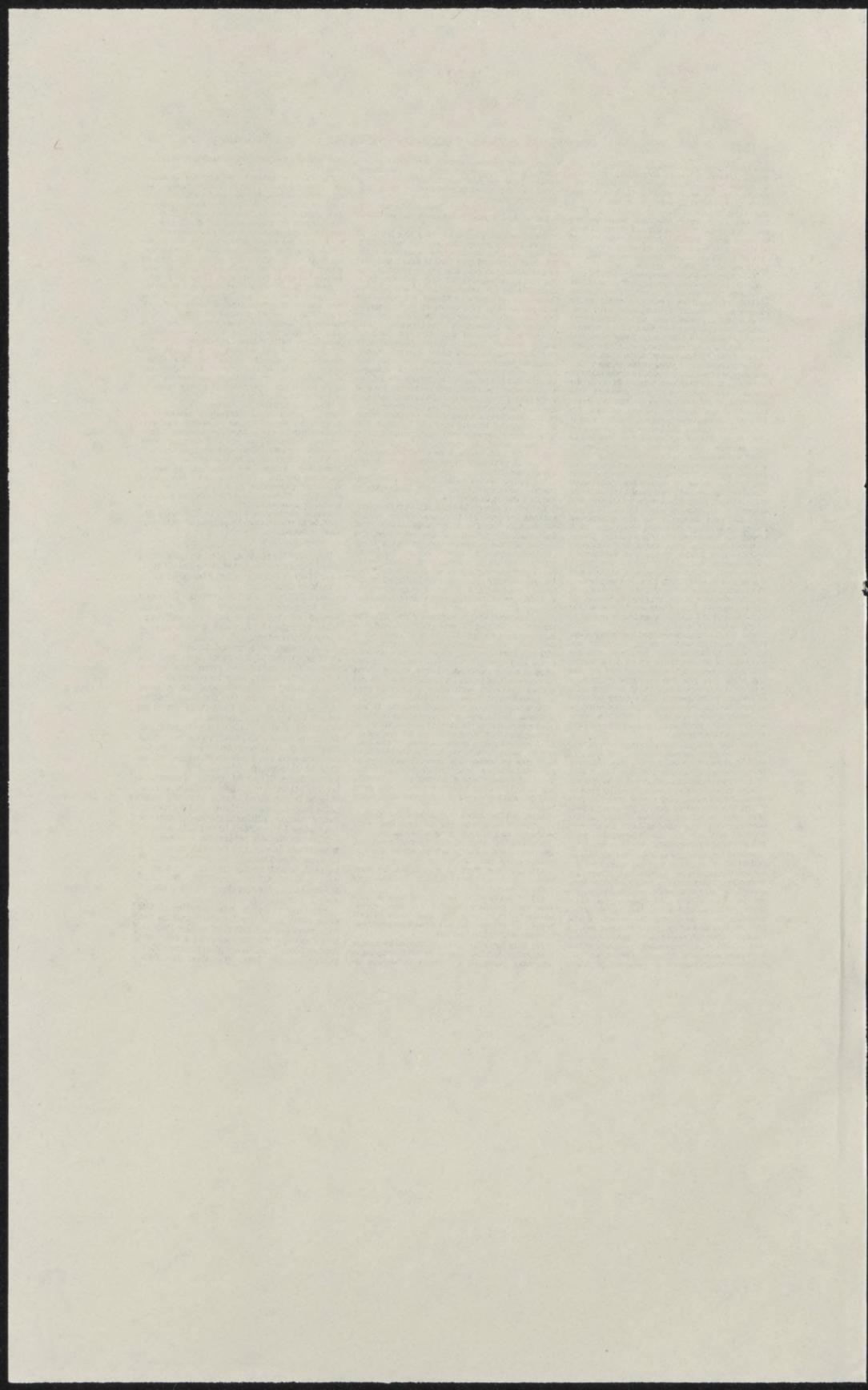
Mr. PERCY: Mr. President, I should like to associate myself with the comments of my distinguished colleague from Maryland, who has always been a voice for freedom.

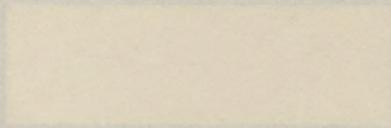
I am also very proud indeed of the floor manager of this resolution, our distinguished colleague from California (Mr. HAYAKAWA), who has spoken with depth and conviction and in a very meaningful way for the freedom that he cherishes, has long fought for, and in which we all deeply believe.

Earlier today I spoke on Lithuanian Independence Day, which is a reminder to all of us that repression can go on for decades and yet there lives in the hopes and in the minds of many Americans, particularly those of Baltic descent, a feeling that we simply cannot permit this to become the status quo. We must raise our voices constantly, as I have on every single Lithuanian Independence Day since I have been in the U.S. Senate.

The resolution before us, I believe, is a message that must be sent, and must be sent unanimously, to the world, must be sent to the Soviet Union. The Senate of the United States and the House of Representatives feel deeply and strongly about this matter.

Senator MATTHIAS has mentioned the statement by Philip Handler, and he has incorporated the full text in the Record. But I should like to just read a few sentences from that to emphasize the depth of feeling of Philip Handler, president







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