Physicists Meet to Honor Sakharov

The Soviet physicist Andrei Sakharov will be 60 on 21 May; a symposium in his honor was held on May Day, not in Moscow but in New York

New York. The group of people watching the jittery image of a home movie in the Rockefeller University auditorium last week may have seemed ordinary but the occasion was a strange conjunction of contrarieties. In the audience were several of the United States' leading physicists, including some who had helped design the American hydrogen bomb. The movie was of their Russian counterpart, Andrei Sakharov, by whose efforts the Soviet Union was able to explode a hydrogen bomb a few months later. Through the medium of the smuggled movie, made under the noses of the KGB a few weeks ago, Sakharov spoke from his exile in Gorky of what he views as the special responsibility of scientists in the contemporary world.

The purpose of the New York meeting* was to mark Sakharov's 60th birthday by discussion of his various contributions to physics and the cause of peace. Much about his life is still obscure. Shortly after his training as a physicist, he disappeared into the ultrasecret world of the Soviet nuclear weapons establishment for two decades, his name unknown to the world and his fellow countrymen. "Did Sakharov invent the hydrogen bomb by the same route you did?" a member of the audience asked Stanislaw Ulam. "Nobody in this country knows the exact contributions Sakharov made," Ulam replied.

"The division of mankind threatens it with destruction." So begins the treatise *Progress, Coexistence, and Intellectual Freedom* with whose publication in 1968 Sakharov burst from almost total obscurity into a front role on the world stage. From the heart of the Soviet system designed to produce Bolshevik man had emerged not a dedicated servant of the state but one who criticized the secrecy and lack of intellectual freedom on which it is built. "The fact that this happened I take to be the most optimistic single phenomenon in the contemporary world," remarked Harrison Salisbury, a former editor of the *New York Times*. Sakharov, in his view, is a true member of the Russian intelligentsia, the free thinkers who kept alive the ideals of liberalism under the despotism of the czars. "It is not in our tradition to have a Sakharov," Salisbury said, "but perhaps it is only under the hammer of oppression that you get this crystallization of the human spirit."

Jeri Laber/Helsinki Watch

Without honor in his own country

Gorky exile Andrei Sakharov

What moves American physicists of his generation is that they see in Sakharov a man who has followed the same tragic path as they have, but for him many times harder, that of designing the bomb for patriotic reasons and then trying in vain to control the nationalistic urges that drive the arms race. Herbert York, the first Director of Defense Research and Engineering, recounted how Sakharov first came into conflict with chairman Khrushchev over the issue of radioactive fallout. "Sakharov is a good scientist, but leave it to us, who are specialists in this tricky business, to make foreign policy," Khrushchev replied. Sakharov failed to prevent the Soviet resumption of atmospheric testing in 1958, but he may have played a crucial role on the Soviet side in achieving the ban that followed shortly afterward.

Dealing with these issues led Sakharov for the first time to examine the political structure of his own society. In the Soviet Academy of Sciences, to which he had been elected in 1953 at the youngest ever age of 32, he spoke out against the politicization of genetics by Lysenko. In 1966 he signed a collective letter warning against revival of the cult of Stalin, and for the first time associated himself with the human rights movement in Russia by writing to Brezhnev to protest the detention of four of its members.

A man of Sakharov's stature could not be ignored by the state authorities. In 1968, after the publication of his treatise on coexistence, the government took the first of a series of increasingly severe measures against him, the removal of his security clearance. The parallel with a case in the United States was noted by Isidor Rabi: "One of our number, Robert Oppenheimer, underwent very severe punishment, not of exactly this sort, but in a very American way, and he did not survive very long." Sakharov continued his opposition, carrying his protests to the distortions of the Soviet judicial system, the abuse of psychiatry to punish political dissidents, and the lack of political and religious freedom. In 1970 he joined in founding the Moscow Human Rights Committee.

During the decade that followed, Sakharov developed the idea that nuclear disarmament and human rights were intimately linked with one another through their joint dependence upon the democratization of the Soviet state. "Sakharov's love of truth," stated the citation for the Nobel peace prize which was awarded to him in 1975, "and strong belief in the inviolability of the human being, his fight against violence and brutality . . . have turned him into the spokesman for the conscience of mankind, which the world so sorely needs today."

In January 1980, after protesting the Soviet invasion of Afghanistan, Sakharov was stripped of all his state honors and exiled from Moscow to Gorky. He is kept in almost total isolation, with his wife his only regular visitor. Even in this

*The conference was organized by Sydney Drell of Stanford University, under the auspices of the New York Academy of Sciences and others. The idea of holding it was that of David and Gregory Chudnovsky, two emigré mathematicians now at Columbia University.

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semi-imprisonment, he is not secure. KGB agents broke into his apartment in March this year and stole scientific and other manuscripts. With this theft "the KGB demonstrates its intention to deprive me of memory, thought, and the possibility of any intellectual life even in my solitude," Sakharov said in a recent statement.

Several speakers at last week's conference described Sakharov's contributions as a physicist to fusion research and cosmology. Others remarked on the irony that the festschrift to honor Sakharov should be being held in New York and not in Moscow. "I find it hard to comprehend that the Soviet Union is so weak, morally and intellectually, as to take one of its greatest sons and muzzle him," observed Rabi. John Wheeler, a friend of Einstein, noted that the two men saw themselves as outsiders to physics: "Sakharov has a certain independence of outlook which makes him in a certain sense like Einstein in earlier times. Both were admired by professional scientists yet each, in a way, felt himself outside the community of scientists. Just as Einstein regarded himself as a patent clerk, Sakharov regards himself in some sense as an engineer, and when you speak with him you see it."

Rabi referred to Sakharov's work on the hydrogen bomb as an accomplishment "which he may regret," but McGeorge Bundy, senior adviser to Presidents Kennedy and Johnson during the Vietnam war, maintained that Sakharov was right in believing that only from a position of strategic parity would the Soviet Union take part in negotiating with the United States. "It is no accident that Sakharov played so important a part—for which he has never apologized, and has no need to apologize—in the Soviet effort to match the United States, and has played no part in the Soviet effort to outmatch the United States," Bundy remarked.

In his message to the New York conference, written on 24 March 1981, Sakharov concludes with an autobiographical note. "I am not," he says, "a professional politician. Perhaps that is why I am always bothered by questions concerning the usefulness and eventual results of my actions. I am inclined to believe that moral criteria together with uninhibited thought provide the only possible compass for these complex and contradictory problems. I shall refrain from specific predictions, but today as always I believe in the power of reason and the human spirit."

—NICHOLAS WADE

NAS Elects New Members

The National Academy of Sciences elected 60 new members at its 118th annual meeting, bringing the total membership to 1352. Newly elected members (with their affiliations at the time of nominations) are:

Bruce M. Alberts, biochemistry and biophysics, University of California, San Francisco; **Jesse L. Beauchamp**, chemistry, California Institute of Technology; **George B. Benedek**, physics, Massachusetts Institute of Technology; **Michael V. L. Bennett**, cellular neurobiology, Albert Einstein College of Medicine; **Sidney W. Benson**, chemistry, University of Southern California; **David Botstein**, biology, Massachusetts Institute of Technology; **Robert M. Boynton**, psychology, University of California, San Diego; **Daniel Branton**, The Biological Laboratories, Harvard University; **William B. Bridges**, electrical and applied physics, California Institute of Technology; **Norman H. Brooks**, environmental and civil engineering, California Institute of Technology.

Eugene P. Cronkite, medical department, Medical Research Center, Brookhaven National Laboratory; **John C. Crowell**, geology, University of California, Santa Barbara; **Igor B. Dawid**, developmental biochemistry, National Cancer Institute, National Institutes of Health; **Edward S. Deevey, Jr.**, Florida State Museum, University of Florida; **Gerald R. Fink**, genetics, Cornell University; **Irwin Fridovich**, biochemistry, Duke University Medical Center; **Edward A. Frieman**, plasma physics laboratory, Princeton University; **Robert Gomer**, The James Franck Institute, University of Chicago; **Harish-Chandra**, mathematics, Institute for Advanced Study; **Stephen E. Harris**, electrical engineering and applied physics, Edward L. Ginzton Laboratory, Stanford University; **Joseph F. Hoffman**, physiology, Yale University School of Medicine; **Frank Hole**, anthropology, Yale University; **Ralph T. Holman**, Hormel Institute, University of Minnesota, Austin; **Theodore D. Holstein**, physics, University of California, Los Angeles.

Donald M. Hunten, planetary sciences, University of Arizona; **Alex Inkeles**, sociology, Hoover Institution, Stanford University; **Wolfgang K. Joklik**, microbiology and immunology, Duke University Medical Center; **Robert T. Jones**, NASA Ames Research Center; **David M. Kipnis**, medicine, Washington University School of Medicine, St. Louis; **Marian E. Koshland**, molecular biology, University of California, Berkeley; **Grant W. Liddle**, medicine, Vanderbilt University School of Medicine; **Gene E. Likens**, ecology and systematics, Cornell University; **Robert E. Lucas, Jr.**, economics, University of Chicago; **Boyce D. McDaniel**, nuclear studies, Cornell University; **Daniel L. McFadden**, economics, Massachusetts Institute of Technology; **Dimitri Mihalas**, High Altitude Observatory, Boulder, Colorado; **Francis D. Moore**, surgery, Harvard Medical School; **Susumu Ohno**, biology, City of Hope National Medical Center; **Donald S. Ornstein**, mathematics, Stanford University; **David Perkins**, biological sciences, Stanford University.

Martin L. Perl, Stanford Linear Accelerator Center, Stanford University; **Michael I. Posner**, psychology, University of Oregon; **Michael Potter**, immunochemistry, National Cancer Institute, National Institutes of Health; **Jesse C. Rabinowitz**, biochemistry, University of California, Berkeley; **Peter B. Rhines**, Woods Hole Oceanographic Institution; **James R. Rice**, theoretical and applied mechanics, Brown University; **Vera C. Rubin**, terrestrial magnetism, Carnegie Institution of Washington; **Aaron J. Shatkin**, laboratory of molecular virology, Roche Institute of Molecular Biology; **Elwyn L. Simons**, anthropology and anatomy, Duke Primate Center, Duke University; **Ray F. Smith**, entomological sciences, University of California, Berkeley; **Frank Spitzer**, mathematics, Cornell University; **Thressa C. Stadtman**, intermediary metabolism and bioenergetics, National Heart, Lung, and Blood Institute, National Institutes of Health; **Champ B. Tanner**, soil science, University of Wisconsin, Madison.

Hugh P. Taylor, Jr., geological and planetary sciences, California Institute of Technology; **Joseph H. Taylor, Jr.**, physics and astronomy, University of Massachusetts, Amherst; **Charles Tilly**, sociology and history, University of Michigan; **John G. Torrey**, biology, Harvard Forest, Petersham, Massachusetts; **Nicholas J. Turro**, chemistry, Columbia University; **Sidney F. Velick**, biological chemistry, University of Utah; **Ralph S. Wolfe**, microbiology, University of Illinois.

In addition, the Academy elected 12 foreign associates:

Walter F. Bodmer, Imperial Cancer Research Funds Laboratories, London, United Kingdom; **W. Maxwell Cowan**, Developmental Neurobiology Laboratory, Salk Institute, San Diego, California (South Africa); **Jean B. G. J. Dausset**, experimental medicine, Laboratoire Immunogenetique de la Transplantation Humaine, Hôpital St. Louis, Paris, France; **Kenichi Fukui**, hydrocarbon chemistry, Kyoto University, Kyoto, Japan; **Vitalii L. Ginzburg**, theoretical physics, Lebedev Institute, Moscow, USSR; **Mark Grigor'evich Krein**, mathematical physics and mechanics (retired), Odessa Institute of Civil Engineering, Odessa, USSR; **James Meade**, applied economics, Cambridge University, Cambridge, United Kingdom; **César Milstein**, protein chemistry, Medical Research Council Laboratory of Molecular Biology, Cambridge, United Kingdom (Argentina); **Diter H. von Wettstein**, physiology, Carlsberg Laboratory, Copenhagen, Denmark (Federal Republic of Germany); **Ewald Rudolf Weibel**, anatomy, University of Berne, Berne, Switzerland; **Michael James Denham White**, genetics, University of Melbourne, Victoria, Australia; **Peter John Wyllie**, geophysical sciences, University of Chicago (United Kingdom).

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